Green Entrepreneurship in Italy

Regional Activity Centre for Cleaner Production (CP/RAC)
Mediterranean Action Plan

Regional Activity Centre for Cleaner Production

UNEP

MAP

STOCKHOLM CONVENTION

GOBIERNO DE ESPAÑA
MINISTERIO DE MEDIO AMBIENTE Y MEDIO RURAL Y MARINO

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If there is any study point which can be improved or if there is any inaccuracy, please let us know.

The CP/RAC, based in Barcelona-Spain, was established in 1996. Its mission is to promote mechanisms leading to sustainable consumption and production patterns and sound chemicals management in Mediterranean countries. The CP/RAC activities are financed by the Spanish Government once they have been submitted and approved by the Contracting Parties to the Barcelona Convention and by the Bilateral Monitoring Commission made up of representatives from the Spanish and Catalan Governments.

Italy, December 2011

Coordination: The HUB Sicilia aps

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ACRONYMS AND ABBREVIATIONS

AIAB	Italian Association of Organic Producers
AITR	Italian Association for Responsible Tourism
APSTI	Italian Association of Technological Parks
CCS	Carbon Capture and Storage
EIB	European Investment Fund
EMAS	Eco-Management and Audit Scheme
FAO	Food and Agriculture Organization
FCS	Foundation for Climate and Sustainability
FGD	Focus Group Discussion
GAS	Joint Purchasing Groups
GDP	Gross Domestic Product
GE	Green Entrepreneurship
GPP	Green Public Procurement
ICT	Information and Communication Technologies
IFAD	International Fund For Agricultural Development
IMF	International Monetary Fund
ISTAT	Italian Institute of Statistic
LCA	Life Cycle Assessment
LERN	Low-Energy Nuclear Reaction
LEED	Leadership in Energy and Environmental Design
NEET	Not in Employment, Education and Training
OECD	Organization for economic cooperation and development
R&D	Research and Development
RDP	Rural Development Plan
SME	Small and Medium Enterprises
PSR	Rural Development Plan
UNWTO	United Nation World Tourism Organization

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EXECUTIVE SUMMARY

Green entrepreneurship is a worldwide phenomenon, which has been rising steadily over the last decade and which embodies a new era of environmental and social awareness. Capitalism needs to move beyond the trade-off between social and economic returns if it wants to continue to be seen as the world's most successful economic development model. If we want global growth to happen without it causing huge environmental catastrophes and correlated social upheavals, we need a new theoretical paradigm for business and politics. With the adoption at the 2009 G20 Pittsburgh Summit of the Leaders' Statement - a year after the start of the crisis that is still rocking the global financial markets and the world's economies - it was already clear that we need to "usher in a new era of sustainable global economic activity grounded in responsibility".

It is common sense that sustainable development consists not only of sound environmental behaviours but that this must be coupled with social development at all stages of production and consumption. The new concept of shared value is a solution pointed out recently and authoritatively by the literature of business economics. In a nutshell, the notion of "shared value" suggests creating economic value in a way that also creates social value. The idea is to accept the interdependence of stakeholders and develop a longer-term vision, in order to increase the amount of value created. Climate change, extensive pollution, waste proliferation combined with the consequences of a socially unsatisfactory growth model has pushed 'green value led' producers, consumers and investors towards new sustainable economic and financial practices. Consequently, we need to start maximising reciprocity rather than self-interest in all economic activities, in which (and not after or alongside which) social exchange occurs: from the restrictive perspective of a utilitarian *homo oeconomicus*, we have to move towards the more sustainable model of *homo reciprocans*.

- A limited number projects have been implemented in public institutions on the subject. Most of these projects were not carried out directly to enhance the cleaner (sustainable) production capacity in the country. They were implemented to comply with some commitments regarding international agreements, adoption to EU, etc. and mainly by international consultants. Thus, they did not create a significant capacity.

Entrepreneurship Ecosystem in Italy

As a whole, the main characteristics of the Italian entrepreneurial ecosystem are:

- small average dimension of productive units;
- significant presence of small-sized and medium-sized family-run businesses;
- export-led development;
- specialisation in low and medium content of technology sectors;
- a strong State presence and strong family control.

In the 1970s, 'small' became the key to success, when the Italian productive system had to face the saturation of standardised goods' markets. The flexibility and agility enjoyed by small-sized enterprises induced many large firms to externalise the production of their in-

termediate goods, a move that spurred many new entrepreneurs, who in turn began experimenting with incremental innovations within their own firms. With the accelerating pace of globalisation, however, dimension has become crucial in determining the success of firms. The Italian productive system has been showing signs of distress in the last decade, primarily due to three main external factors:

- Globalisation, which exposed many industrial and service sectors to the pressure of international competition.
- European integration and Monetary Union, which reinforced the effects of globalisation.
- The information and communication technologies (ICT) revolution, which created a widening gap between those entrepreneurial systems that were faster at embracing these new technologies and those that were slower.

All these elements conspired to produce cumulative effects on the Italian productive system, which was especially strong in traditional low-technology sectors. The consequence was a concentration of added value produced by a smaller number of firms, a sharpening of the crisis of traditional industrial sectors and the success of those firms that were able to diversify their products and strategies, maintaining their presence on international markets.

In the 2008 World Bank Report, Italy came 65th out of 181 countries with regard to the quality and scope of its business regulations. Weaknesses in the legal system are also evident on the enforcement side. Inefficiencies in any legal system lead to a reduction in the number of new companies being created, and those that are born tend to be smaller and have a preference for bank rather than public debt. Italy's frequent reforms of its judicial system in recent years have not improved the situation.

A major weakness of the Italian economy is its relative inability to generate technological knowledge. Standing at 1.14 in 2006, Italian R&D intensity (that is, the R&D expenditure as a % of GDP) is lower than the average ratio in all major OECD countries, while patenting activity in recent decades has been well below the country's economic weight. Italy spent 4.8% of its GDP on Education in 2008, 1.3 percentage points less than the OECD average (6.1%), and ranking therefore 29th out of 34 OECD countries in 2008.

In 2010, two years after the beginning of the international crisis, the rate of unemployment was in Italy 8.3% and reached the impressive level of 28.6% of male young labour force (15-29 years old). Against this background, as more extensively described below, the increasing levels of investments and employment rates in the green sector are encouraging, and prove this to be one of the most promising answers to the crisis.

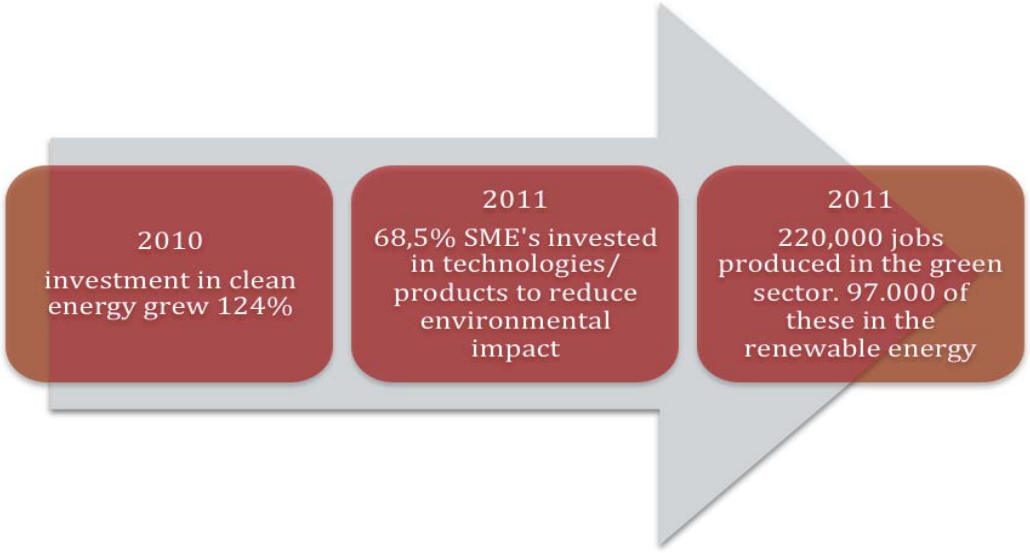
Green Entrepreneurship Ecosystem in Italy

The green entrepreneurship ecosystem of Italy is growing and developing, with promising economic sectors spearheading a conversion towards ultimately sustainable production and distribution practices, and others opening up entirely new areas in response to a growing need for green products and services. In some cases, Italy stands out on the international scene as a leader, for example in the organic food production and export sector.
In others it is displaying promising examples of market leadership and excellence, for example in the manufacturing sector. Green entrepreneurship has become the core vision of 30% of Italian firms affected by the economic downturn.

This attitude appears to be on the rise not just as a strategic response to economic woes, but also thanks to a renewed interest at the global and local level towards environmental issues. Recent surveys suggest Italians are just as concerned as most Europeans with the consequences of climate change for our planet and our economies, and a growing number of them (45%) wish economic development strategies were designed to ensure a sustainable future for the next generations.

This consumer shift towards natural produce, coupled with a long tradition of attention to the quality and diversity of food - at the heart of Italy's culture - has led the country to become a European and world leader in the area of organic agricultural production.

The green sector in Italy expands also in other sectors.

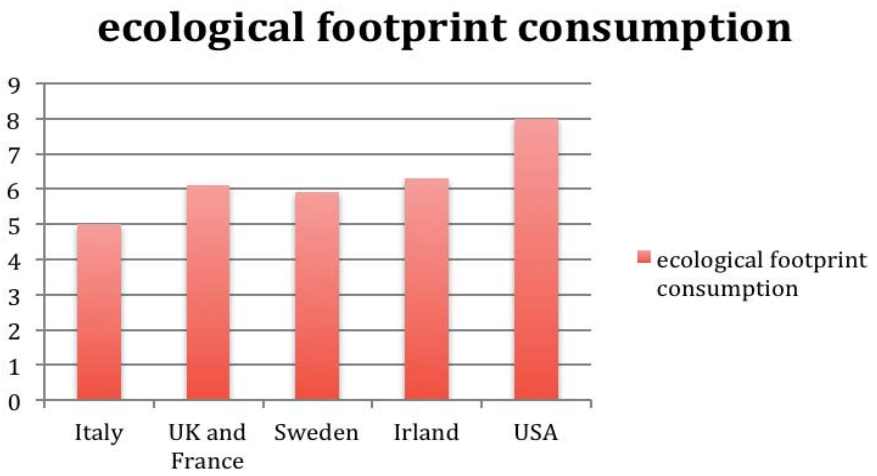


Confidustria report on energy efficency, 2011

Confindustria believes the renewable sector alone will be responsible for creating 1.6m jobs and increasing Italy's GDP by 0.4% on an annual basis between 2011 and 2020.

Overall, however, two considerations taint this rosy picture. On one hand, almost every analyst believes that this bottom-up development was rarely met by a strategic and visionary governmental support framework. In fact, most analysts believe the expansion of the green sector has happened without - or at times despite - government intervention. On the other hand, a poor regulatory and enforcement context have given rise to inevitable opportunistic behaviours by economic actors who are taking advantage of this green revolution through mere green-washing exercises.

Despite this, Italy as a whole is well placed not just to meet the challenge of turning its economy green, but also to become a world leader in many sustainable sectors. A rich tapestry of new green start-ups and old enterprises converting to sustainable practices are spearheading this transformation, in some cases opening up entire new paths thanks to ground-breaking innovations. Moreover, the country's latitude and geographical composition offer abundant renewable energy sources (especially sun, water, wind and geothermal), while its culture appears primed to embrace more sustainable lifestyles, that prize lower consumptions, locally-sourced goods and services and a more holistic approach to economic development as a component of a long-term social and environmental vision.



Global Footprint Network, 2011

That said, there is still a long way to go. Many Italian companies are very skilled and innovative, but are still unable to access international markets. They are often unable to market their green products/services skilfully abroad, despite their often superior quality. Environmental policy needs stability and long-term strategic perspective. While countries like France, Britain and Germany have made a concerted effort to remove any complexity, contradiction or disharmony in their environmental policy frameworks, Italy has failed to do so. This is partially explained by the fact that Italy only approved a comprehensive national conservation framework in 1991, while France, Britain and Germany did so in 1960, 1972 and 1976 respectively.

The Italian scenario is hampered not only by late legislation, but also by an extreme dispersion of rules within the same policy areas, demonstrating the urgency of reorganising the entire legislative canon, a systematisation which has in fact already started in the waste and water management areas. Although there are some significant examples of success at the regional level, the overall performance of environmental policy in Italy must be described as rather inadequate, when measured against the constant depletion of the nation's environmental resources, and especially when compared with the results obtained by others European States with similar income levels.

Sectoral outlook

All research, statistics and sources tend to describe the green economy as a huge opportunity to overcome Italy's current economic stagnation, which is further aggravated by the heavy crisis shaking the global economies.

In Italy the consumption of energy from renewable sources has risen from 6.9% in 2000 to 10.7% in 2009. The Valle d'Aosta and Trentino Alto Adige regions produce electricity almost exclusively from renewable sources (93%). Waste management is highly variegated, with peaks of excellence, especially in the North, and infamous mismanagement cases, especially in the South. On average, waste management is approximately three times lower than for the rest of Europe, even though Italy is world leader in paper recycling and reuse.

In agriculture, Italy can boast the first place in Europe for origin-controlled product certification (DOP and IGP), with 182 products certified, followed by France and Spain. It can

also claim first place in the field of organic production and export, followed by France and Germany.

The building industry has been encouraged by a series of recent incentives towards upgrading the energy efficiency of buildings, which required a 50% reduction (compared to the limits of 2005) in consumption by 2010. More generally the whole housing and related materials cluster is developing interesting sustainable alternatives. The ceramics sector, amongst the hardest hit by the recession, was one of the first ones to pursue a 'green' diversion strategy. Tiles primarily made of recycled materials and solar tiles able to transform light into electrical energy represent two of the most creative examples that this cluster came up with to overcome the crisis.

Italy is the only country, along with Germany, to have developed technology for the production of unleaded taps and valves. In the wood-furniture sector, Italy's third largest sector in terms of number of companies, the environmental challenge is becoming an important factor for competitiveness, and is becoming an intangible added value for Italian products. Innovation in production processes and industrial raw materials, especially in construction and wood-origin certification, is constantly growing, despite the crisis.

Climate challenge is forcing some traditional 'Made in Italy' sectors to reposition themselves in the market through a focus on eco-friendliness:

- in mechanics, many small and medium-sized enterprises are moving towards the renewable energy sector - including in the fields of plant design and energy production;
- in the automotive sector, Italy, together with France, is European leader in the production of low carbon vehicles, thanks to innovative technologies that reduce cars' consumption, to the adoption of the 'Start & Stop' system and to the introduction of low viscosity oils;
- in the ship and naval sector, the development is focusing on improving existing know-how, developing in particular the characteristics of hulls, materials, engines and fuels used. The sector is working on a project aimed at recycling disused hulls;
- in the chemical sector, low-impact production has become an opportunity to revitalise the industry, and research is being done into new products that re-use agricultural waste, in synergy with the food industry.

The fashion, design and textile districts are developing a more responsible marketing policy, and investing in research of eco-materials and less polluting production systems. The tanning industry has banned chemicals and additives, and pushed for a return to natural leathers that rediscover ancient methods of tannery. Also the textile sector, one of Italy's most relevant in the past, has renewed its attention on natural fibres and is growing together with the market of organic tissues. Over 300 firms have started the process to become organically certified over the last two years.

In the last few years Italians have developed more sustainable habits, although many argue that the 'farmer's soul' of Italy, more than in other places on the Planet, has always driven Italians' behaviour, stimulating in particular savings and reduced-consumption. But over the last 10 years a growing attention towards critical consumption has grown, often thanks to widespread information campaigns directed against unethical big corporations or irresponsible large banks. Fa' la cosa giusta (*Do the right thing*), for instance, was born as a comprehensive guide to critical consumption in cities like Milan, Genoa or regions like Sicily, and as a comprehensive directory of ethical and sustainable firms. Growing ethical financial instruments and tour operators promoting responsible and sustainable tourism can be considered two further main indicators of this pervasive social change. (*see also chapter 4.7 Critical consumption and sustainable behaviour*)

Conclusions

The following Table summarises the main findings of the report into a SWOT analysis:

Strengths	**Weaknesses**
1. Italy's ecological footprint consumption is set at 5.0, against an average for high-income countries of 6.1 2. Italians stakeholders generally share a holistic approach to GE, encompassing environment, shared value and social innovation 3. The GE sector is one of the few positive trend in Italy in terms of investments, market, employment, profit and induced economy. 4. Italy is one of the main producers and global leaders in some GE sectors (i.e organic food, energy) 5. Italy performs picks of innovation in specific GE sectors (i.e. textile, ceramic)	1. The Italian environmental policy lacks of soundness and vision 2. The regulatory system is scarcely harmonised 3. There is a weak enforcement of the environmental laws and investment on R&D 4. The GE is particularly fragmented and it is not able to converge into and ultimately build an integrated system 5. The green sectors that particularly require governance capacities and synergies between private, public and local communities prove to be particularly weak (i.e. waste management, transport and mobility)
Opportunities	**Threats**
1. The global and national crisis could spin off and accelerate the move toward the green revolution 2. Italy displays several potentials for the development of GE (latitude and geographical composition, abundant renewable energy sources, culture and lifestyles…) 3. Italian companies and SMEs generally show good resilience and high adaptation capacities 4. Italy is populated by a crowd of "small green heroes", people which are at the same time green consumers and micro-entrepreneurs	1. The non harmonisation and weak endorsement of the legal system together with the heavy bureaucracy risk to seriously affect the growth of the GE 2. The fragmentation and not connection of initiatives and micro-sectors risk to miss the creation of a critical mass of producers and customers able to switch into green the entire Italian system 3. The bulk of the Italians still remains captivated by non-green habits, especially in certain domains (i.e. mobility, respect for the nature, sense of civil responsibility)

Our analysis of the green entrepreneurship sector does split the country into three categories:

- The **Trail-blazers**, a category composed of firms capable of conquering international markets, with high levels of research, development and innovation, and capable of bearing the Made in Italy banner towards new green frontiers;
- The **Followers**, a category that includes a great number of enterprises that are showing resilience by embracing a 'green' approach in response to a radically transformed scenario, and to a lesser extent firms that take this 'green' turn for slightly more opportunistic reasons, or simply because they are very sensitive to how the market behaves;

- The **DIY Pioneers**, a final category of Do-it-Yourself people that comprises those heroic micro-entrepreneurs who are self-taught, visionary and extremely passionate, who fight day after day against a system that does not support them and who live, breathe and think sustainability, at times building their visionart green micro-enterprises literally in their backyards.

In conclusions, although this report hints at an evident development of the green entrepreneurship in the future, reliable forecasts are impossible to make until the political and legislative framework will truly be able and willing to support green entrepreneurship in Italy.

1. CONCEPTUAL FRAMEWORK

With the adoption at the 2009 G20 Pittsburgh summit of the Leaders' Statement - a year after the start of the crisis that was still rocking the global financial markets and the world's economies - it was already clear that "the economic crisis demonstrate[d] the importance of ushering in a new era of sustainable global economic activity grounded in responsibility"[1]. Green entrepreneurship is a worldwide phenomenon, which has been rising steadily over the last decade and which embodies this new era of environmental and social awareness.

In this section, after an explanatory distinction between environmental (also referred to as ecological and green) economics and green entrepreneurship, we will show how traditional views of capitalism are now being updated. Green entrepreneurship will be analysed in this light and within the broader context of sustainable development, which aims at creating long-term shared value. Particular attention will be paid to the theory of civil economics, the Italian school of thought which proposes an alternative view of market economics based on public well-being, reciprocity and ethical participation. Like other schools, civil economics treats the institutional setting of society as crucial for both long-term and short-term economic development. In this view societies flourish when citizens possess deeply rooted civil virtues and have clear opinions on what the public interest is, which is allowed by fair and pervasive information and education, and who conform their behaviour to meet this public interest.

Economics has been investigating environmental issues since the 1920s, has produced a considerable amount of knowledge in this field and has shaped different policy measures worldwide. In the past, environmental economics was considered a subfield of studies, which in general (but not necessarily) used the analytical tools of the so-called mainstream economics. Environmental economics used to dialogue with different disciplines and together were mainly interested in the impact of specific economic issues on the environment. Recently however, the increasing public dissatisfaction towards economic sciences and their inability to make reliable predictions and pave the way for sound economic and social development has given rise to 'green economics', a loose definition encompassing all economic fields and which refers to the investigation of the relationship between the environment, the economy and society, with a focus on sustainability. Dissatisfied with so-called mainstream economics, a growing number of heterodox approaches have adopted the 'green' label. In contrast with environmental economics, today green economics may be considered a dissenting area of thought characterised by a multidisciplinary approach, resulting in contamination between economic ideas and a number of other subjects.

Green entrepreneurship, on the other hand, is a field of business economic theory, which examines the characteristics of those entrepreneurs who have been finding new markets and business models within the green sector. Indeed the traditional economic framework treats environmental issues as a sort of constraint imposed by the public sector on the profit maximisation of firms.

[1] Leaders' Statement, The Pittsburgh Summit, September 24-25, 2009; Annex, 1

After the seminal work of Quinn 1971[2] in the Harvard Business Review, it has become progressively evident that the green sector (which at that time was known as the 'ecology movement') offers a high number of potential business opportunities. Over the course of the past few years and in line with the cultural changes that are putting sustainable behaviour at the core of everyday actions, an increasing number of small and medium enterprises (SMEs) have been meeting the demands of consumers for sustainable goods and services. Without undermining the efforts of all those actors which have spearheaded environmental awareness within mainstream economics, it is fair to say that it was only after the financial crisis that the economic and environmental untenability of conventional business approaches began to be understood by both society and academia.

1.1. Distrust in the conventional business approach

Why is the conventional business approach flawed? Capitalism traditionally sees businesses as contributing to society by making profits which support employment, wages, consumption, investments and taxes. Governments fund public policies through taxes and ensure that the redistribution of wealth and income and other social goals are achieved. A successful business produces wider social benefits by pursuing profit and social goals which go beyond its actual business scope. It follows that entrepreneurs and shareholders who do not pursue personal greed are violating the 'ethics' of the market and this in turn reduces social well-being. Such a view[3] has led firms to consider value creation narrowly and prioritise short-term financial performance.

As a result not just social needs but also consumer needs have been ignored and there has been a real lack of understanding of the long-term consequences of short-term business decisions. For example, in recent decades companies that have shifted their activities to countries with lower labour costs have not considered the distress caused to local communities, where levels of employment and income have fallen dramatically. The trade-off between social goals (equity, justice, environmental conservation) and economic efficiency have been lodged in public policy frameworks, which in turn have attempted to find solutions to social issues at the expense of businesses. It was on these grounds that liberal economists convincingly argued that a firm pursuing profit is realising its social mandate.

Certainly, the idea that well-off communities are necessary for successful business is not alien to the traditional approach. Philanthropy originates from such an idea and the stories of many foundations, charities and other philanthropic institutions are cases in point. These stories are an example of the famous dichotomy that exists between the moment of creation and the moment of distribution of wealth described by John Stuart Mill. The logic of that dichotomy implies that if we want wealth to be distributed within communities we should allow it to be accumulated first by those who are most smart with little regard for the means employed.

The impact of the recent financial crisis has, however, revealed that this approach is mistaken. We are witnessing the collapse of national economies, the failure of banks, rising unemployment, Government cuts and it is becoming increasingly difficult to support social, environmental and welfare programmes. Corporate firms are now perceived as growing at

[2] Quinn, J.B. (1971). Next Big Industry: Environmental Improvement, in Harvard Business Review, Sept-Oct, 3, 3, pp. 120-131.
[3] See M. Friedman (1970). The social responsibility of business is to increase its profit, New York Magazine, September 13.

the expense of workers, consumers, the environment and communities. Capitalism must go beyond the mere trade-off between social aims and economic efficiency if it wants to survive the siege declared by politicians, activists and theorists and a new theoretical paradigm for business and politics is needed for global growth to continue.

1.2 The emergence of a new business approach

The new concept of shared value has recently and authoritatively been explained in business economics literature[4] and is based on the suggestion that economic value should be created so as to also create social value. Accepting this concept, which is new to businesses as well as Governments and NGOs, implies considering the market as a place not just defined by economic needs but also by social needs. Managers are in fact are well aware of the internal costs to firms that social vulnerabilities often create, such as remedial training courses to make up for failures in the education system, the waste of raw materials and energy or the consequences of an inefficient legal system.

When attempting to define shared value it may be mistakenly suggested that a redistribution of value is created by the productive system. In actual fact the idea is to increase the amount of value that is being created by accepting the interdependence of stakeholders and developing a longer-term vision. It is in a community's interest to have successful enterprises that guarantee jobs, wealth creation and opportunity but it is also in the interest of enterprises to have successful communities that provide not only demand but also a supportive environment. In light of this simple truth there is growing consensus that not all forms of profit are equal; profit which creates economic as well as social value represents a superior form of capitalism. It in fact speeds up the advance of society and in a longer-term perspective also allows a more stable and stronger growth rate for firms.

For this reason, an increasing number of companies with a hard-nosed approach to business such as Nestlé, Google, Unilever or Wal-Mart, are investing their money in initiatives aimed at creating shared value. In addition to this the boundary between for-profit and non-profit enterprises is being increasingly blurred by new hybrid models. Social enterprises and green enterprises belong to this new ecosystem. It follows that sustainable development must consist not only of sound environmental behaviour but also of social development at all stages of production, consumption and saving activities[5]. Climate change, extensive pollution and bad waste management combined with the consequences of a socially unsatisfactory growth model has pushed 'green value led' producers, consumers and investors towards new sustainable economic and financial practices.

1.3 Civil economics and green entrepreneurship

This report on the current state of Italian green entrepreneurship highlights how the new ideas of shared value and green economy are consistent with the Italian tradition of civil economics which is rooted in the Neapolitan school of thought developed by Antonio Gen-

[4] M. Porter and M.R. Kramer (2006). Strategy and society: the link between competitive advantage and corporate social responsibility, in Harvard Business Revue, December 2006; Porter, M. & Kramer, M.R. (2011). The Big Idea: Creating Shared Value, Harvard Law Review and Dees, J. G. (1998), Enterprising Nonprofits, Harvard Law Review, 76, 55-67.

[5] For bibliographical references on green entrepreneurship theories, see the extensive review contained in the UNEP Final Report on Green Entrepreneurship in Turkey.

ovesi (1713-1769)[6], a political economist and Aristotelian philosopher who was contemporary to Adam Smith. In recent decades much attention has been paid to his work and the field of *civil economics* draws today from much of his thinking, alongside Amartya Sen's capabilities theory and Martha Nussbaum's neo-Aristotelian studies on ethics and happiness[7]. His approach is based on the idea that civil life and 'good life' are not mutually exclusive and the market, aided by good laws and trade, is seen as the place where the human need to reciprocate can be fulfilled. Consequently it is not self-interest but reciprocity which is to be maximised by economic activities within which (not after or alongside which) social exchange occurs. As is demonstrated by the practice of green economy, economic activity becomes an exchange which takes into consideration the benefits to all participants; people are led by value-based motivations not mere self-interest and produce and enjoy different forms of relational goods such as trust, responsibility, solidarity and recognition.

It is important to stress that civil economics does not preach against the market in favour of state intervention but rather suggests that the marketplace take on a different role and that signals (i.e. prices) not be neglected because economic choices also take price and convenience into consideration. The underlying assumption that market relationships are not ethically neutral is significant, as these must not be thought of merely as the act of trading two goods of equal value, but as relationships which are infused with the very principles of responsibility, mutual support and global care that denote the marketplace as a civil place (or an uncivil place if they are absent).

It is evident that these features derive from an explanatory platform which differs to the more restrictive perspective of utilitarian *homo oeconomicus* and the cost-benefit calculus for individual utility cost-maximisation. A different anthropological approach is implied where the *homo reciprocans* requires a society with market exchanges and labour specialisation in order to fulfill his/her economic and relational needs. It also implies that economic choices are part of the usual spectrum of social experiences and do not occur in an ethical vacuum.

Looking back at green entrepreneurship, if we take this relatively new concept of civil economy (i.e. a market economy with different kinds of enterprises that are all pursuing efficiency alongside other value-based objectives such as environmental and social sustainability) we soon realise that a number of new business approaches - from social enterprises to microcredit organisations, from fair-trade companies to green enterprises - are already operating along the lines of a model that ties economic performance with social outcomes. In the current transition away from a growth-oriented model that has shown its serious limits we are

[6] Genovesi, A., Lezioni di Commercio o sia di Economia Civile, Società Tipografica dei Classici Italiani, Milano, 1824. First edition, Napoli, 1765-67.
Genovesi, A., Della Diceosina o sia della Filosofia del Giusto e dell'Onesto, Marzorati, Milano 1973. First edition, Napoli, 1766.
Genovesi, A., Autobiografia e Lettere, Feltrinelli, Milano, 1963.
Genovesi, A., Scritti, Feltrinelli, Milano, 1979.

[7] Bruni L. (2006). Civil Happiness, Routledge, London,
Bruni L. (2008). Reciprocity, Altruism and Civil Society, Routledge, London,
Bruni L. & P. L. Porta (2003). "Pubblica Felicità" and "Economia Civile" in the Italian Enlightenment, in History of Political Economy, Bruni L. & S. Zamagni (2004). Economia Civile, Efficienza, Equità, Felicità Pubblica. Il Mulino, Bologna.
Bruni L. & P. L. Porta (2005), Happiness and Economics, Oxford University Press,
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Sacco P. L. & S. Zamagni (2001). Civil Economy, Cultural Evolution and Participatory Development: a Theoretical Enquiry, in G. Mwabu, C, Ugaz & G. White (eds) Social Provision in Low Income Country, Oxford University Press, Oxford.

witnessing the transformation of our economies, as will be shown in chapters 3, 4, 5 and 6 of this Report.

Civil economics provides us with a deep and internationally recognised philosophical and economic framework which points to green entrepreneurship as a viable path towards a better future.

2. ENTREPRENEURSHIP ECOSYSTEM IN ITALY

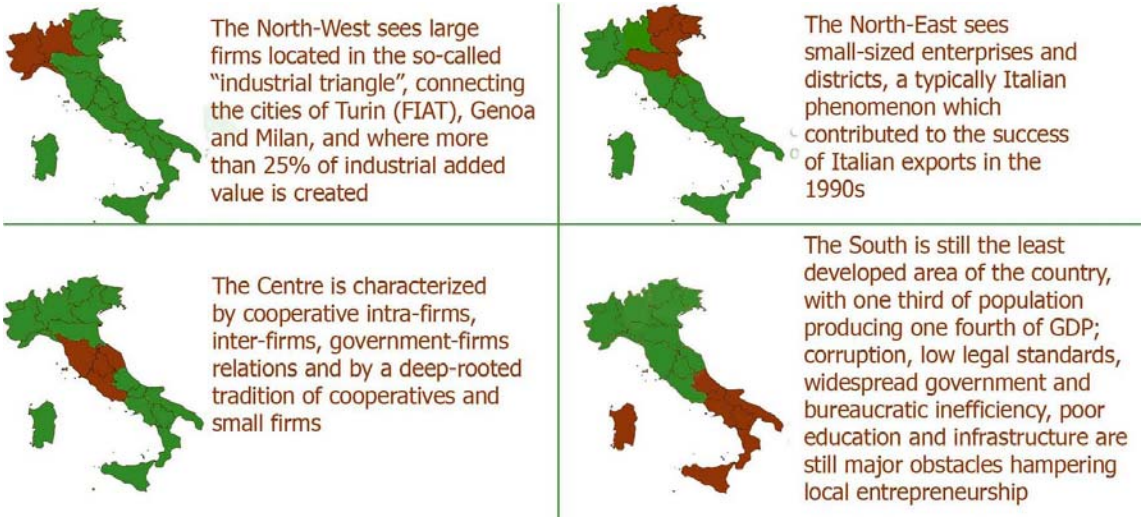
2.1. Current State: A Quantitative Assessment of the Productive System

With a GDP of €1,206 billion, in 2010 Italy was the third largest industrial economy in the Euro area after Germany (€2,167 bn) and France (€1,599 bn) but regionalism, which has characterised the Italian nation throughout its history, has meant that the industrial sector is geographically differentiated. Following a development process based on the Fordist model, the North-West became industrialised first; large-scale firms were built in the so-called 'industrial triangle' made up of Turin (where FIAT is located), Genoa and Milan. Even today more than one fourth of Italy's industrial added value is created in Lombardy alone.

The second most significant area is the North-East which is characterised by the presence of small-scale enterprises and several industrial districts. Districts are a typically Italian phenomenon, extensively studied in academic literature, stemming from the industrial restructuring process of the 1980s and which contributed to the success of Italian exports in the 1990s.

The third relevant area is Italy's Centre, which is characterised by strong co-operative relations between individuals, firms and institutions. Consequently, the area is awash not only with industrial districts but also with co-operatives, which are particularly successful in the regions of Emilia Romagna and Tuscany. Southern Italy, home to a third of the country's population, remains the least developed area, producing only one fourth of the nation's GDP.

The South is still plagued by high inefficiency, high levels of corruption within its local Governments and leading classes, inadequate legal standards and poor levels and quality of infrastructure.



Our elaboration on Istat data, 2011

As a result, there is a wide gap between the income levels and employment rates found in the South and those of other Italian regions.

As a whole, the main characteristics of the Italian entrepreneurial ecosystem are:

- small average dimension of productive units;
- significant presence of small-sized and medium-sized family-run businesses;
- export-led development;
- specialisation of the technology sector in low and medium content.

According to ISTAT's official data8, in 2007 there were almost 4.5 million firms listed in the manufacturing and services sectors employing some 17.5 million workers9.

Italian firms in manufacturing and services	**4,480,473**
total employees of italian firms	17,500,000
firms employing < 10 workers	4,256,449
workers employeed by firms < 10 workers	8,050,000

Istat, 2007

Although firms with larger numbers of work units are typical in the manufacturing sector (and in the trade and constructions sector), the number of firms in the Italian manufacturing sector with more than 250 employees is equal to 1,385. In the manufacturing sector, according to Eurostat's 2007 data[10], the average Italian firm has 8 employees, compared to Spain's 11, France's 14 and Germany's 35. Furthermore, firms with more than 10 workers hire on average 37 workers in Italy, 46 in Spain, 76 in France and 84 in Germany.

Looking at the shares of total added value, the sectors with the highest figures were the manufacturing sector (accounting for almost a third of total added value), the gross and retail trade sector, the real estate sector and the transport sector.

Small firms are widespread in Italy. 'Small' became the key to success when the Italian productive system had to face the saturation of standardised goods markets in the 1970s. The flexibility and agility enjoyed by small-sized enterprises induced many large firms to externalise the production of their intermediate goods, a move that spurred many new entrepreneurs to experiment with incremental innovations within their own firms. With the accelerating pace of globalisation, however, size became crucial in determining the success of firms, especially on international markets as incremental innovations cannot match the reach of research investment, which only large firms can afford. In addition, small firms struggle to meet the administrative, legal and financial costs of building international relations with gross-sellers and clients. Italian SMEs that have conquered the international markets are the exception rather than the rule.

[8] The Italian Institute of Statistics - See http://dati.istat.it/ 2007 are last available data. In a few months, ISTAT is going to start the new enterprises census.

[9] 62.5% (about 3 millions) of all firms are individual firms. These figures however, cannot be considered a good proxy for measuring entrepreneurship, as in Italy many people offering professional service (such as lawyers, accountants, or architects) are listed as self-employed consultants meaning that the real number of self-employed entrepreneurs is far lower.

[10] Eurostat data are reported in the latest Annual Report of the Italian Central Bank, 2010.

Although the globalisation process challenges the business models of Italian districts made up of small firms, it is important to highlight that recent data shows that the contraction of product due to the current crises is lower in the district areas than the in regional macro-areas[11]. This data can be interpreted as a sign that the co-operative relations and co-ordination mechanisms that prevail in districts are still key to business success and can partially counterbalance the negative effects of small dimension in the global market.

Despite a drop in the amount of international trade being carried out by Italy, exports of goods and services made up 19,2% to 23,8% of GDP between 2006 and 2010 (IMF data). When compared with the 7-8% of US exports to GDP ratio (the US define themselves as an open economy), it can be safely said that the Italian productive system largely relies on external demand, Germany's in particular as it is the largest foreign market for Italian goods. The importance of the export sector is the result of Italy's industrialisation process which was supported by the Marshall Plan during a time in which the dynamism of the internal market was on average slower (7% growth per year) than the growth rate of production (10%)[12].

The Italian productive system has been showing signs of distress in the recent decade, primarily due to three main external factors:

- Globalisation, which has exposed many industrial and service sectors to the pressure of international competition.
- European integration and Monetary Union, which reinforced the effects of globalisation.
- The revolution of information and communication technologies (ICT), which created a widening gap between entrepreneurial systems that were fast to embrace new technologies and those that were slower in doing so.

All these elements combined to produce cumulative effects on the Italian productive system which at that point was especially strong in traditional low-technology sectors. The consequence was a concentration of added value produced by a smaller number of firms, a sharpening of the crisis of traditional industrial sectors and the success of firms that were able to diversify their products and strategies and maintain their position in international markets.

2.2. Current State: A Quantitative Assessment of the Labour Market

In 2010, two years after the beginning of the global financial crisis, Italy's overall rate of unemployment was 8.3%, while that of young males (15-29 years old) peaked at 28.6%. These figures would be around 3% higher if those who lost their jobs and entered into the welfare system[13] and those who are not considered unemployed because they have never actively sought a job[14] were taken into account.

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[11] See the First Report of the Osservatorio sui Distretti Italiani, pp. 23-40 www.osservatoriodistretti.org/rapporto-osservatorio

[12] See Confindustria - Istituto Tagliacarne 2010, L'Evoluzione dell'Industria Italiana: Peculiarità Teritoriali, pp.12-13 www.tagliacarne.it/Dossier/download/IST_WEB_Confindustria_rev2.pdf

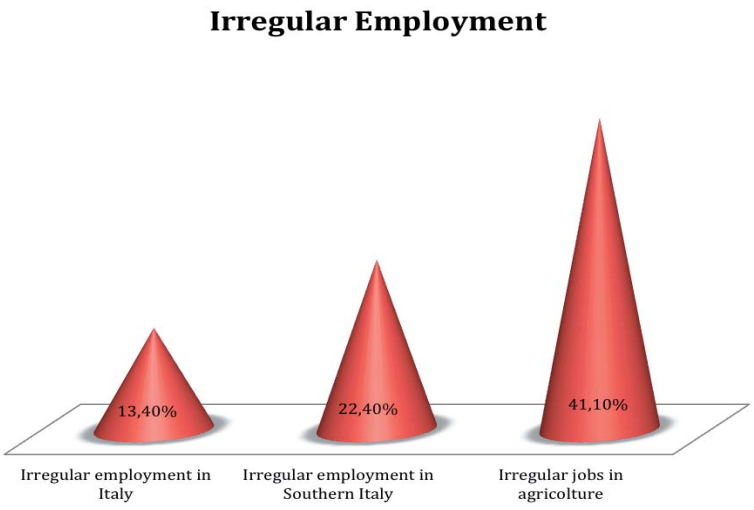
[13] In Italy the so-called Cassa Integrazione Guadagni is a law which allows firms hit by an external economic shock to temporarily face shortage of revenues. For a maximum of 52 weeks, temporarily dismissed workers receive about 80% of the wage from the Government; this intervention is financed by taxes ordinarily paid by firms and workers.

[14] See Banca d'Italia 2011, Relazione del Governatore sull'anno 2010, p. 94.

The rate of youth employment in 2010 was around 35% compared to 57% in Germany and about 50% in the EU. Although youth unemployment is a widespread problem throughout Europe, in Italy it is particularly serious not just because there is a greater number of young people who are unemployed (4% more than the average rate) but also because the percentage of young people who are outside the labour market and the educational system (NEETs) continues to be high. This indicates an ongoing deterioration of human capital and a progressive increase of youth discouragement with regards to their prospects of being employed[15]. In Southern Italy, the rate of female presence in the labour market is also very low and unsuccessful attempts to find a job generally lead to a definitive exit from the job market.

The crisis has also made it harder for young people with temporary jobs to secure permanent contracts, which in Italy allow workers a greater degree of social welfare protection. Indeed, 20% of young people who are employed have temporary contracts. This percentage, however, does not measure the full extent of the uncertainty that exists inside the labour market. In fact, the large number of self-employed workers hides workers whose duties are identical to permanent employees, although formally listed as self-employed. Employers sometimes ask their employees - if they want to continue to work for them - to resign and change the nature of the labour relation. Thus, the former employees continue to work as self-employed providers of specific services and share the risk of the firm, without taking part in any business decisions, and without being given access to welfare systems or measures in their favour in case of business bankrupcy. Although it is difficult to measure such a phenomenon, it appears to be very widespread.

Difficulties also arise when attempting to measure employment in the shadow economy. ISTAT estimates that in 2003 3,238,000 people were employed irregularly in Italy.



Istat data, 2003

[15] See Saccomanni F. (2011). La Generazione Esclusa: il Contributo dei Giovani alla Crescita Ecoonomica, intervento del Diretttore Generale della Banca d'Italia, XLI Convegno Confindustria – Giovani Imprenditori, www.bancaditalia.it/interventi/intaltri_mdir/Saccomanni_110611.pdf

2.3 Major Players and Fields of Activities

There are more trade unionists in Italy than in all the other EU countries, but as half are pensioners, union membership amongst employees is roughly 30%. There are three main unions – CGIL, CISL and UIL – which were initially split along political lines, although less so now. The Italian representation system for entrepreneurs, on the other hand, is either based on the main productive sectors (such as agriculture, craft, trade or industry), or on the size and ownership of firms. Confindustria is the main cross-representational association of entrepreneurs. A certain amount of corporatism was a traditional feature of Italian industrial relations whereby economic policy was negotiated between business, labour, and state interest groups[16]. Until 1991, the bargaining mechanism for the determination of wages was characterised by cost-of-living adjustment clauses (the so-called scala mobile), by nation-wide collective contract (set at the industry level, and re-discussed every three years) and by plant-level contracts (set at the firm level with a far more irregular renewal frequency, generally less than three years).

In order to create the macro-economic conditions necessary to sign the Maastrict Treaty, a tripartite income policy agreement was signed in July 1993. Today it still provides the institutional basis for wage formation in Italy, and, for the first time in the history of the Italian labour movement, it was accompanied by a binding referendum among workers. In fact, although a tentative agreement between Government, employers and union leaders was reached on 3 July 1993, the actual agreement was only signed on 23 July 1993. Like the 1995 (as well as 1997) pension reform pacts, it was preceded by thousands of workplace assemblies and binding referenda among workers, the majority of whom supported the policy changes[17].

The new bargaining system is centred around two contractual levels, one is national, the other plant-based. Since 1993, Confindustria has been increasingly pushing for negotiations to happen at the plant level, CISL and UIL have not been opposing this line while CGIL has. The argument is that wages are likely to increase more if they are strictly linked to productivity, and that Southern Italian firms could benefit in terms of competitive advantage from a reduction in local wages. CGIL's counter-argument is that a national contract must be in place to allow resource transfers from the strongest to the weakest economic sectors or regions. Many question this argument and are unsure whether Southern workers would really benefit from higher wages. Since shadow economic activities are such an extensive phenomenon in these regions, some claim that Southern workers would actually find it harder to find employment. The opposing positions taken by Italy's three main unions - joined with the growing de-localisation of firms and the effects of the economic crisis - has further weakened the bargaining power of workers.

[16] For an alternative standpoint on corporatism in Italy, see Baccaro L. (2002). The Construction of "Democratic" Corporatism in Italy, in Politics & Society, Vol. 30 No. 2, June 327-357

[17] The nation-wide industry contracts determine workers' wages every two-years, while fixing other aspects of the labour contract for four years, maintaining consistency with the rates of inflation set as targets by the Government every year. The inevitable discrepancy between actual and target rates of inflation is one of the elements discussed when nation-wide industry contracts are renegotiated every two years. This discrepancy must be assessed in light of overall (not only contractual) wage growth and of the evolution of the terms of trade. The second contractual layer relates to plant-level bargaining, and should emphasises the nexus between wages and firm productivity and profitability. Finally, an indexation scheme exists as a guarantee to workers if nationwide industry contracts are not renegotiated within the prescribed two years. See Destefanis S., Mastromatteo G., Verga G. (2005). Wages and monetary policy in Italy before and after the wage agreements, Rivista Internazionale di Scienze Sociali, 113, n. 2, 289-318, available at: www.vitaepensieronline.it/riviste/000518/2005/02 .

After the approval of the so-called Treu law on the flexibilization of the job market in 1997, the Italian labour market has been increasingly characterised by flexibility, with a further peak of temporary contracts after 2004. The employment rate has increased at the cost of job security. An overview of the different kinds of labour contracts is available on the on-line investment guide provided by the Ministry of Foreign Affairs[18]. The number of flexible contract workers has increased in recent years, especially amongst younger employees in spite of the fact that most of them are educated to graduate level. A dual picture has thus emerged in the job market, with long-term workers enjoying high standards of rights and security on the one hand and on the other flexible contract workers enjoying very few rights and absolutely no job security[19]. This is the situation that most young workers find themselves in and their likely hood of finding a permanent job has further diminished due to the economic crisis. The Bank of Italy estimates that a first-time job seeker has a 55% chance of only being offered a temporary contract.

2.4. Legal Framework

A strong state presence and the predominance of family control have traditionally been the defining features of Italian capitalism. A wide-reaching privatisation policy was implemented in the 1990s after Italy signed the Maastricht Treaty[20] and the state's shareholding in large companies is now lower than in the past but still significantly higher than in other countries. Having said this, a governance system characterized by property concentration is still fairly widespread. In 2007, Italian companies not quoted on the stock market had an average of 3 shareholders, the majority shareholder owning, on average, 67.7% of the company's shares. The state is still a significant shareholder in non-financial quoted companies although, unlike in previous decades, it is no longer the majority shareholder.

According to the Bank of Italy[21], the percentage of firms in the manufacturing sector whose property and management is completely controlled by families amounts to a remarkable 59%, whereas in France and Germany the figures are as low as 18% and 22% respectively. Academic literature[22] considers family involvement to be a key factor in explaining why Italian companies are cautious about taking risks, while their reluctance to recruit managers from outside the family, even when relatives are ill-equipped to run a company, is one reason why many Italian firms often under-perform.

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[18] www.esteri.it/MAE/IT/Ministero/Servizi/Imprese/DiplomaziaEconomica/Investing_in_Italy.htm

[19] See Saccomanni F. (2011). La Generazione Esclusa: il Contributo dei Giovani alla Crescita Ecoonomica, intervento del Diretttore Generale della Banca d'Italia, XLI Convegno Confindustria – Giovani Imprenditori,www.bancaditalia.it/interventi/intaltri_mdir/Saccomanni_110611.pdf ,p. 4.

[20] In order to reduce its public debt, Italy was asked to sell its shares in many of Italy's large firms. A clause was imposed by the then Finance Minister to use the money obtained from these sales only to extinguish Government debt.

[21] Banca d'Italia 2010, Relazione Annuale del Governatore, pp. 68-71.

[22] See Barba Navaretti G., R. Faini and A. Tucci (2008). Does Family Control Affect Trade Performance? Evidence for Italian Firms, CEP Discussion Paper, No 896, November. http://cep.lse.ac.uk/pubs/download/dp0896.pdf,
Michelacci C. & F. Schivardi (2011), Does Idiosyncratic Business Risk Matter for Growth?, Journal of the European Economic Association, June.
http://www.eief.it/files/2011/06/schivardi_michelacci_jeea_2011.pdf
Cucculelli M. (2009). Owner Identity and Firm Performance in European Companies. Implications for Competitiveness, MoFiR working paper, No 24, May.
http://www.mofir.univpm.it/files/working%20paper/Mofir_24.pdf

It is a well known fact that an efficient legal system (both in terms of regulation and enforcement) is essential to counter monopolistic positions, concentrations of market power and barriers to entry. The presence of any of these elements in an economy works against fair market competition. Competitiveness within Italian entrepreneurship is hampered by an overreaching and everchanging regulation system which makes objectives hard to meet, diminishes the ability to plan, increases costs through the need to fulfil regulatory requirements, and leads to an increase in court cases. In the 2008 World Bank Report[23], Italy came 65th out of 181 countries with regard to the quality and scope of its business regulations. Weaknesses in the legal system are also evident, especially in terms of enforcement: on average in Italy it takes 1,210 days to recover a debt, compared to an OECD average of 463 days. Inefficiencies in any legal system lead to a reduction in the number of new companies being created; those that are tend to be smaller and have a preference for bank rather than public debt. The frequent reforms of Italy's judicial system in recent years have not improved the situation.

A case in point is the lack of competitiveness of Italian businesses. According to OECD data, Italy's anti-trust legislation is among the most advanced in the world, comparable to the best practices in the US and Canada and the regulation index is three times greater in Italy than in either of these countries. However there continues to be low competitiveness among Italian firms perhaps because of the strong state presence in business, both in terms of companies that are under public control and of state control over prices. Despite the strict but poorly enforced regulations, entrepreneurs have not been discouraged from carrying out entrepreneurial activity although there is evidence to suggest an increased likelihood of adverse selection situations[24]. Furthermore, it has been proposed that a combination of over regulation and low enforcement may help explain why Italy shows such a high business-ownership rate in relation to its per capita GDP[25].

2.5. Taxation and Access to Finance

Italian companies pay about 40% tax on their profits[26]. They also pay social contributions to their employees. Due to differing fiscal policies (non-distorsive vs. non-neutral interventions), the tax burden on business was increased in the 1990s and reduced in the 2000s[27]. During this time, temporary and selective tax relief was also allowed to support aggregate demand but the level of investment that was finally decided was not modified by the fiscal measures.

In line with other industrialised countries, for the last ten years Italian companies have increased their bank debts and equity-financing decisions. This trend has been inverted by the current financial crisis and data shows that the ratio between debt and the capital owned

[23] World Bank (2008). Doing Business 2009, World Bank, Washington DC.
[24] Klapper L.F., L.A. Laeven e R.G. Rajan (2006), Entry Regulation as a Barrier to Entrepreneurship, Journal of Financial Economics, vol. 82, n. 3, pp. 591- 629.
[25] Carree, M., and A. Roy Thurik (2002). The Impact of Entrepreneurship on Economic Growth. In Zoltan Acs and David B. Audretsch (2003), International Handbook of Entrepreneurship Research, Boston/Dordrecht: Kluwer Academic Pub lishers
[26] Personal limited firms pay a tax on individual employees (IRPEF), whereas public companies pay a tax proportionate to their productivity (IRES), plus a tax that each partner pays on his/her quota of (distributed) profits (IRPEF).
[27] The sequence of tax reforms is reconstructed in Bank of Italy (2009). Rapporto sulle Tendenze Produttive del Sistema Produttivo Italiano, Questioni di Economia e Finanza, Occasional Papers, n.45, pp. 95-99.
http://www.bancaditalia.it/pubblicazioni/econo/quest_ecofin_2/qf_45

by firms is growing. The size of Italian companies correlates with the ratio between debt and capital – the smaller the size, the higher the ratio – confirming the difficulties faced by small and medium-sized companies in accessing credit. A 2004 study[28] confirmed that the probability of becoming an entrepreneur is higher in those Italian regions where the financial system is more developed. Since the degree of competition in those regions is also higher (i.e. existing firms have a low market share), the number of new companies increases and it is more likely that those firms are successful. Larger firms are, of course, less affected by local financial conditions as they can easily access national or international financial markets.

2.6. Research and Development activities

A major weakness of the Italian economy is its relative inability to generate technological knowledge, expressed in terms of research and development (R&D) expenditure and yearly registered patents. Standing at 1.14 in 2006[29], Italian R&D intensity (that is to say the R&D expenditure as a percentage of GDP) is lower than the average ratio in all major OECD countries, while patenting activity has been well below the country's economic weight in recent decades. In comparison, in 2007 R&D intensity within the EU-27 was on average 1.85%, with the highest ratio in Sweden (3.60) and the lowest in Cyprus (0.45). The combined amount of R&D expenditure for the 27 EU countries is 226 billion euros (compared to 269 billion in the United States and 118 billion in Japan[30]), whereas the EU earmarked 50,521 million between 2007 and 2013 for the Seventh Framework Program, the main source of R&D funding in Europe. A further 2,751 million was spent between 2007 and 2011 on nuclear research and training activities carried out under the EURATOM treaty. As increasingly-highlighted by economic literature, investments in R&D, innovation and education are key to triggering long-term economic growth, which is why increasing investment in knowledge and strengthening the innovation capacity of the Union are two of the policies which lie at the heart of the Lisbon Strategy.

Italy has an underdeveloped R&D sector when compared to its economic profile and the country's main limits to the implementation of Lisbon Strategy are its inability to increase public and private R&D expenditures, its lack of innovative R&D financial instruments, its lack of continuity in public investment from one year/Government to the next and its poor attractiveness for national and foreign researchers. This poor performance in the field of technological research can be partially explained by the fact that Italy's specialisation in production and technology has continued to be concentrated in industry, where innovation has more to do with engineering and design than with R&D. Given this scenario and the fact that a large number of SMEs lack the resources and capacity to innovate, in recent years a number of science parks, business incubators, private research institutes and public research organisations have been created. Some work together whereas others carry out independent functions.

After the founding of the first science and technology park in Trieste in 1982, Italy rolled out a programme in the 1990s to extend their creation across the nation. Technology parks bring together companies, venture capitalists, universities, laboratories and research centres, creating a fertile and collaborative working environment and offering a wide range of

[28] Guiso, L., P. Sapienza, L. Zingales (2004). The Role of Social Capital in Financial Development, in American Economic Review, 94, n. 3, pp. 526-56.
[29] http://cordis.europa.eu/erawatch/index.cfm?fuseaction=reports.home
[30] Data ERANET 2007, http://cordis.europa.eu/erawatch/index.cfm?fuseaction=eu.content&topicID=854&parentID=853&countryCode=EU

services. Their most important objective is technological and knowledge transfers from research institutions to enterprises (especially small ones). 31 out of 44 technology parks are now associated in the Italian Association of Technical Parks (APSTI), which aims to deepen the integration of these parks and in so doing to further innovation and support long-term economic development.

Box 1 - Research Institutes and Universities

In 2008, universities spent 31.6% of R&D national expenditure. The Ministry for Education, University and Research (MIUR) co-ordinates national and international scientific activities, allocates funding to universities and research centres, and establishes the guidelines for the allocation of funds for public and private technological R&D. Autonomy is always limited, because Universities are subject to legal regulations and depend on public funding thus enabling the state to limit their space for manoeuvre. In Italy Universities have partial autonomy to decide he structure and content of degree programmes, as well as the freedom to open or close entire study programmes. In both cases they have to comply with 'minimum requirements' or 'quality requirements' established by the MIUR (through the CNVSU, National Council for the Evaluation of the University System), which determines the amount of resources and study content that Universities need to guarantee. Universities also experience limitations in their power to recruit permanent academic staff and determine salaries. Moreover, the total cost of personnel cannot exceed 90% of the FFO (Ordinary Fund), the basic Government fund for Universities, and tuition fees cannot exceed 20% of the FFO. MIUR's recent law (1/2009) further restricted a few aspects of these rules such as limiting Universities to only filling half of the job vacancies created by retiring staff. As to the possibility to use the resources available from the turn over, it was limited up to the 50% of the resources. Universities that do not respect the yearly 90% threshold are not allowed to hire new permanent personnel the following year. Having said this, no specific limitations have been set up for research and Universities may autonomously design their research agenda. Excluding Universities, the largest public research institution in Italy is the Italian National Research Council (CNR). Its aims are: performing in-house research; promoting innovation, contributing to the competitiveness of industry and he internationalisation of national research and advising Government and other public bodies. The CNR is made up of 108 interdisciplinary Institutes that are located throughout Italy. They co-ordinate their activities through an interdisciplinary structure of 11 National Departments. The CNR employs more than 8,000 people, more than half of whom are researchers and technologists. The main source of funding for the CNR is the Government, 552 million in 2007 alone. The remaining funds, 309 million, are sourced from the market. According to the European Research Ranking the CNR is ranked sixth out of Europe's top 100 research institutions however there is no evidence to explain the effects of CNR's research activity on either conventional or green business. The second Italian institution which appears in the Ranking is the University of Bologna (45th) , followed by FIAT's Research Centre (53th). Other main research institutions are the National Institute for Nuclear Physics (INFN), which conducts theoretical and experimental research in the fields of sub-nuclear, nuclear, and astro-physics and the Italian Space Agency (ASI) which coordinates all national research activities and investment in the space sector.

2.7. Education, technological innovation and the choice of entrepreneurship

The Italian economy has a number of characteristics which have a bearing on entrepreneurial performance and the decision of whether or not to become an entrepreneur. These include: the quality of Italy's educational system; the country's rate of self-employment; the average size of Italian companies; the degree of the country's technological specialisation and its international performance. Italy spent 4.8% of its GDP on education in 2008, 1.3% less than the OECD average (6.1%) thus ranking 29th out of 34 OECD countries in 2008[31]. Still in 2008, only 8.6% of Italy's total expenditure for educational institutions came from private sources, well below the OECD average of 16.5%. Between 2000 to 2008, expenditure per student by part of educational institutions (university expenditure excluded) increased by 6%, however the OECD average increase for the same period was 34%. Return on educational expenditure is also poor in Italy. Italian students at 15 perform less well in reading, maths and sciences that their OECD counterparts. Furthermore, the situation appears to be getting worse despite the fact that Italian students receive more hours of maths and sciences classes than the OECD average (42% of total hours between 12 and 14 years against 39%).

It is worth considering the effrects the educational system has on entrepreneurship keeping in mind the scenario described above. Education and other forms of codified knowledge have an important influence on entrepreneurial skills[32]. Although work experience is as valuable as education when it comes to moulding entrepreneurial human capital and at the start-up stage of a business may even be more useful, after the initial phase education becomes paramount, especially when the core business activity is highly innovative, when the organisation is complex or when large financial investments and detailed business plans are required.

The extent to which education is necessary for successful entrepreneurship, however, is strongly affected by the technological characteristics of the economic environment. In Italy, highly technological sectors do not show a comparative advantage in terms of number of firms and added value produced. The data that follows may be useful to understanding why the productive environment does not have a high impact on technological innovation, which would require new entrepreneurs to have a high level of education. The most recent available ISTAT data on Italian R&D expenditure, which dates to 2008[33], might lead us to mistakenly conclude that Italy is one of those European countries that enjoys a relative balance between the public sector and industry, at first glance the figures show that public and private shares of R&D funding are 47.8% and 52.2% respectively. A closer look reveals that 13.8% of the amount spent by the private sector for in-house R&D in 2008 (19,304 million) was actually financed by the public sector[34]; indeed, Italy is one of the four OECD countries where private research receives financial backing from Government institutions[35]. Additional evidence suggesting that the public sector is far more relevant when it comes to R&D that would appear at first glance is provided by the fact that 72% of total private R&D expenditure is invested by a small number of large companies with more than 500 employees.

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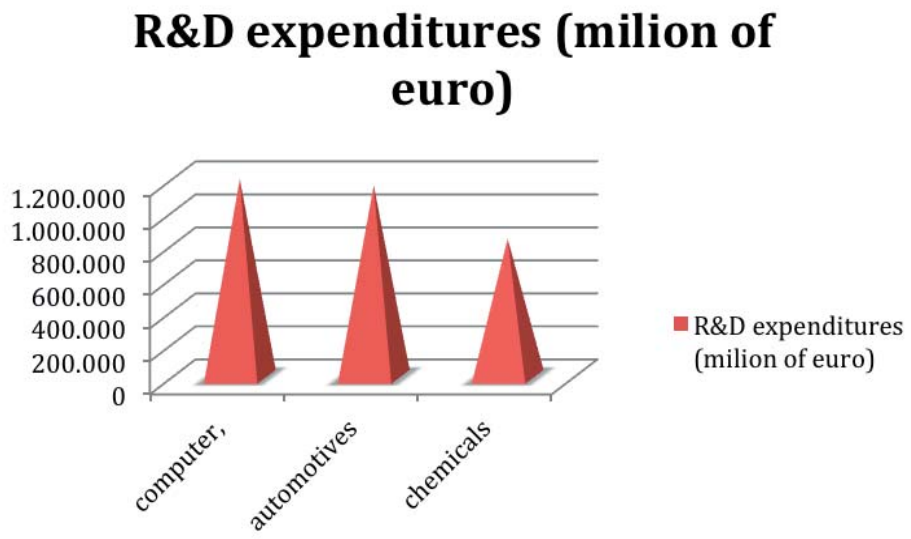
[31] OECD 2011, Education at a Glance, Country Note, http://dx.doi.org/10.1787/eag-2011-en

[32] Education and in general, codified knowledge, influences entrepreneurial skills. Its main contribution is to foster managerial ability (i.e. planning and co-ordination abilities), and in turn to reduce uncertainty surrounding a new business venture. Moreover, the enhancement of managerial ability helps reducing the uncertainty about one's entrepreneurial talent (Val Praag C.M. and Cramer J.S. (2001), The Roots of Entrepreneurial and Labour Demand: Individual Ability and Low Risk Aversion, Economica, February, 45-62).

[33] See www.istat.it/it/archivio/3890

[34] 7.7% is the average rate of financing of private sector research by public sector. See: www.fondazionemetes.it/ShowNews.aspx?NewsID=1499, p.35.

[35] Fondazione Metes, 2004



Istat, 2008

The reasons why Italy has a comparatively low private R&D expenditure and there appears to be no correlation between educational level and entrepreneurial drive become clearer if we consider the relatively small presence of high-tech firms and the small average size of firms. Economic literature explains that returns from education vary from country to country depending on how institutions relate to markets. Recent research demonstrates that in Italy individuals who choose to become entrepreneurs are, on average, less educated then their employees[36]. This is not consistent with what is observed in other advanced countries, especially the US. Italy's entrepreneurial models are heavily reliant on networking and social learning and the factor that appears to most influence entrepreneurial choice is the professional background of parents. People whose parents are, or have been, entrepreneurs are more likely to become entrepreneurs themselves. Another factor which may have a positive influence on choice is the ability to establish informal contacts with institutions, as these help to gain advantages and control over resources.

Elsewhere in the literature it is mentioned that there is a negative relationship between entrepreneurial choice and regional indicators of economic development. People living in richer regions are less likely to chose to become entrepreneurs and prefer to choose other less risky careers, such as becoming a lawyer, a tax consultant or a private doctor. In other words, the higher the level of regional wealth, the lower the stimulus to become an entrepreneur. A last point to be made is that there does not appear to be any correlation between the number of years spent in education and the likelihood of embarking in an entrepreneurial carrier.

Less specific research carried out by the Bank of Italy in 2006 confirms that[37] there is a territorial dimension to the choices made when leaving education: in Southern Italy University graduates are more likely to find employment than their Northern counterparts but on average they will earn the same amount as non University graduates working in Northern Italy.

[36] See Ferrante F. & F. Sabatini (2007). Education, social capital and entrepreneurial selection in Italy,in MPRA Paper 2451, University Library of Munich, Germany.
[37] Ciccone A., Cingano, F. e P. Cipollone (2006), "The Private and Social Return to Schooling in Italy", Temi di discussione, Banca d'Italia , n. 569.

3. GREEN ENTREPRENEURSHIP ECOSYSTEM IN ITALY

Italy's green entrepreneurship ecosystem is growing. Promising economic sectors are spearheading a conversion towards ultimately sustainable production and distribution practices and others are opening up entirely new areas in response to a growing need for green products and services. In some cases Italy stands out on the international scene as a leader, for example in the organic food production and export sector. In others it is displaying promising examples of market leadership and excellence such as in the manufacturing sector. This encouraging trend is supported by a strong bottom-up cultural shift akin to that emerging in several countries around the world which expresses itself in greener consumption patters by the market, and by a plethora of bottom-up behavioural changes aiming at embracing more sustainable living practices. The most notable of these initiatives is the emergence of GAS (Gruppi di Aquisto Solidale), or 'solidarity purchase groups', self-organised and localised initiatives of passionate individuals who join forces to purchase agricultural produce that is locally-sourced, organic and sustainable.

Overall, however, two further considerations taint this rosy picture. The first is the almost universal acknowledgment that this bottom-up development is rarely met by a strategic and visionary Governmental support framework. In this sense, the struggles and frustration of green entrepreneurs in Italy are the same as the struggles and frustrations of entrepreneurs tout-court. An incoherent and often contradictory legal framework, which stifles and distorts the development of the sector; a Kafkian bureaucracy that mainly affects SMEs which struggle to find resources to deal with its complexities; an outdated educational framework that leaves young people unprepared for the workplace; and a corrupt system of patronage that kills meritocracy and rewards entrepreneurs - for example in public procurement contracts - with the right connections and not the right products or services. These are just some of the often-cited challenges faced by the green entrepreneurship sector in Italy. The second consideration is the inevitable emergence, within this confused and unregulated context of opportunistic behaviour, of certain economic actors who are taking advantage of this green revolution through mere green-washing exercises. As Thomas Friedman said, so far most 'green actors' have not been spearheading a green revolution: they have, on the contrary, been taking part in a green party[38]. Addressing these two challenges seems particularly urgent during this moment in the development of the sector.

3.1. Assessing the Entrepreneurship Ecosystem in Italy in Terms of Its Green Prospects: Investments and Job Opportunities

Faced with a changing global market that is dominated by the rise of new industrialised economies capable of producing low-cost manufacturing exports that were once the backbone of Italy's economy, the Italian entrepreneurial system has recently suffered more than other European countries. A number of firms have been forced to close down in the face of growing international competition and increased internal legal and fiscal restrictions, however several Italian enterprises have recovered well by investing in products and services aligned to the changing priorities of the internal and international market. In particular, they

[38] http://www.greenblue.org/2011/10/breaking-up-the-green-party-for-a-revolution/

have started investing in sustainability as a competitive innovation strategy which looks to the future rather than as a painful adherence to regulatory standards imposed from above. As a result, green entrepreneurship has become the core vision of 30% of Italian firms affected by the economic downturn[39] and examples of Italian best practices abound from sectors as diverse as manufacturing, food and agriculture, renewable energies and constructions.

This attitude appears to be on the rise not just as a strategic response to economic woes, but also thanks to a renewed interest in environmental issues at the global and local level. Recent surveys suggest Italians are just as concerned as most Europeans with the consequences of climate change for our planet and our economies and a growing number of them (45%) wish economic development strategies were designed to ensure a sustainable future for the next generations[40]. Fighting climate change and promoting sustainable growth represent the second and third priority respectively for the average Italian[41], who is now increasingly concerned about where the products they buy and consume come from and how they were grown or manufactured. Several health scares have rocked the Italian media in recent years - from dioxin-contaminated buffalo mozzarella produced in the Neapolitan region[42] to children's toys containing dangerous chemicals imported from China. As a result, Italians have become increasingly wary and have started rewarding firms and initiatives that embrace sustainability at the core of their strategy, especially in the areas of food and agriculture.

Italy's green entrepreneurial system reflects a generalised turn to a set of sustainable values, but also the strategic vision of many entrepreneurs who want to increase Italy's economic competitiveness on the international stage and have understood that 'going green' by recycling waste in smart ways, reducing energy consumption and acting more sustainably is a wise business choice. This is not only the view of a number of SME-dominated manufacturing sectors - such as the textile, chemical, paper and tanning industries, some of which are retaining their international market lead thanks to products and technologies (see section 6.2.3) - but also the view of many large-scale industrial sectors, such as car manufacturing, for several decades a pillar of Italy's economy. FIAT has invested considerably in sustainability and since 2007 has been producing Europe's least carbon-emitting vehicle, and developing a growing number of hybrid models (fuel/LPG), that made up 13% of new registered vehicles in Italy in 2009.

Another very interesting sector that is developing strong green credentials is the construction sector, with its B2B ramifications into other industries such as wood/furniture production and household ceramics. In 2007 this sector benefited from a law (296/2006) which allowed taxpayers to detract 55% of the expenses accrued to reduce a building's energy consumption. About 33% of Italians took advantage of this fiscal incentive and as a result many enterprises in the construction sector have started targeting the growing market for green houses. Mapei, for example, which is a world leader in the production of adhesives and chemical products for buildings, kept its global leadership by launching innovative sustainable products, such as Mapetherm, an external thermal insulation composite. Habitech, a consortium of over 300 enterprise operating in the area of sustainable constructions in the northern region of Trentino Alto Adige, became a leader in the sector by being the first Italian company to offer integrated LEED certification services across the country.

[39] GreenItaly, Un'idea di futuro per affrontare la crisi - Unioncamere & Fondazione Symbola, Jul 2010
[40] Eurobarometer 72, National Report Italy - Autumn 2009.
[41] Eurobarometer 72, National Report Italy - Autumn 2009.
[42] http://it.wikipedia.org/wiki/Mozzarella_di_bufala_campana#Allarme_diossina_e_blocco_delle_importazioni

The increasing amount of investment in the green sector is good news for Italy. According to a recent Symbola Foundation report, in 2011, 68.5% of medium size firms (50-499 employees) chose to invest in technologies or products with a reduced environmental impact (in 2010 the figure was 37.3%). In addition to this, small firms increased their level of green investments from 29.1% in 2010 to 55.1% in 2011. The figures regarding green investments by the manufacturing sector are particularly worthy of note, 64.4% as are those for the Southern Italy, 64.5%.

According to Symbola Foundation, 220,000 job vacancies in 2011 were produced in the green sector, 97,000 of which in the renewable energy sector. The jobs in highest demand included agricultural and skilled workers as well as environmental lawyers and managers. With reference to the EU policy measure "20-20" described in par. 4.2.1.2, a study performed by Bocconi University estimates the job opportunities for the Italian economy deriving from the substitution of 17% within 2020 of the total energy consumed with energy produced by renewable sources and a reduction of 14% of greenhouse gas emissions. The required amount of investments would create a large number of jobs. The Bocconi University envisages three scenarios, according to the response of the national entrepreneurial system (implying different degrees of dependence on imported goods and services). The worst scenario is that in which Italy would continue to heavily rely on import of technologies and goods for renewable energies production; in this case to meet the required target of the "20-20" 100.000 new jobs would be created. In the best scenario, in which Italian companies and firms would start to produce intermediate goods, the creation of jobs would reach 175.000 in 2010.[43]

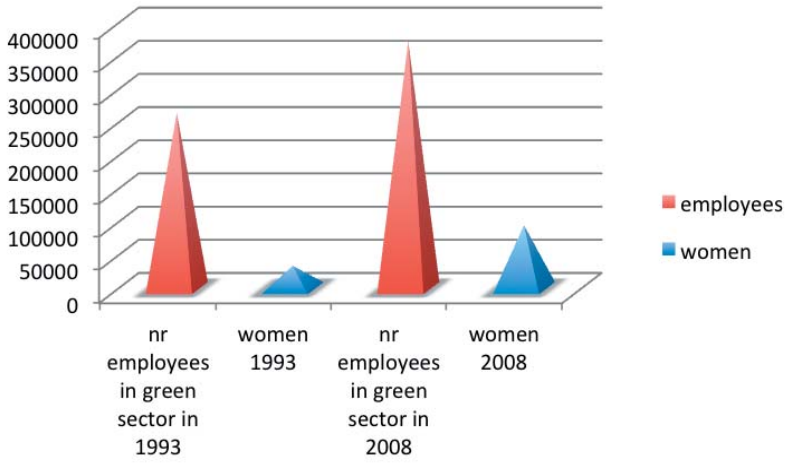
These figures are consistent with those provided by ISFOL, (Italian Institute for the Vocational Training of Workers) relative to the impact of the green sector on employment. Looking at labour market data for 1993 to 2008, ISFOL identified a growing trend in the environmental sector. During this period of time it experienced a 41% increase in number of employees: from 263,900 employees in 1993 to 372,100 in 2008. These figures are even more interesting when gender is considered: in 1993 only 12.7% of employees were women whereas in 2008 the number had doubled to 25.5%, only 25% of whom are more than 45 years old (compared to 49% of men). It could, therefore, be said that the green labour market discriminates women far less than the traditional labour market. A survey conducted with students who had followed an environmental Masters programme run by ISFOL concluded that 80.6% of respondents found employment within six months of completing the course.

Research conducted by ISFOL (the Institute for the Development of Worker's Training, an in-house company of the Italian Ministry of Labour) on the impact of environmental educational courses on employment stated that "the green economy will be the new frontier of economic growth in the twenty-first century. Italy will have to continue to work towards [...] the 2020 climate-energy package, the European strategy setting binding targets for reducing CO2 emissions through renewable energy and energy efficiency"[44]. Just a year after the conclusion of a master in environmental issues organised by the same ISFOL, 80.6% of respondents appears to have found a job. The figure becomes even more meaningful if we look at the details: 80% of those who found work did so a mere six months after the training's conclusion. ISFOL also analyzed the data on the labor market from 1993 to 2008, iden-

[43] SEE: Rapporto IEFE (Istituto di economia e politica dell'ambiente) BOCCONI (2009), PROSPETTIVE DI SVILUPPO DELLE TECNOLOGIE RINNOVABILI PER LA PRODUZIONE DI ENERGIA ELETTRICA Opportunità per il sistema industriale nazionale, Executive Summary, p.6 http://www.gse.it/media/ConvegniEventi/Presentazioni%20e%20Interventi/ProspettiveSvilupoTecnologieRinnovabiliEnergiaE.pdf

[44] Research on Green Jobs in Italy, 2010 Isfol, Ministery od Labor

tifying a growing trend for employees in the environmental sector. During the period, there was a 41% increase, bringing the number of employees from 263,900 in 1993 to 372,100 in 2008. This data is even more interesting when looked through a gender lense: the green labor market favors women.



Isfol, 2008

3.2. Specific Conditions Affecting Green Entrepreneurship

If in other European and non-European countries the public sector has often guided and accompanied the emergence of green entrepreneurship, in Italy most analysts believe this phenomenon has happened without - or at times despite - Government intervention[45]. Alongside the incentives of Law 296 in the construction sector, a notable exception is the energy sector, which has been the prime focus of Italy's push towards a more sustainable future. Thanks primarily to financial incentives promoted by the Government (the so-called Conto Energia, in response to Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity from renewable energy sources in the internal electricity market[46]), Italy saw its share of energy produced by renewable sources - including hydroelectric plants - go from 6.9% in 2000 to 22.2% in 2010, up 8.6% in 2009-10 alone[47]. The main beneficiary of Government support over the last 5 years has been the photovoltaic sector, with 4 ministerial decrees backing companies and individuals who decided to fit panels onto their properties. After a promising start, however, legislative and political uncertainties have prompted many Italian energy companies - including ENEL, which takes up 22% of the Italian renewable energy market - to divert their investments in renewables towards foreign markets. Nonetheless, the sector continues to expand in Italy, which in 2010 alone saw an 124% investment growth in clean energy, recording one of the highest increases among G-20 countries[48]. Italy is also third in the EU in terms of wind power

[45] Interviews with Eric Ezechieli (Director, The Natural Step Italy), Sissi Semprini (Founder, Greenbean), Enzo Argante (journalist, author, sustainability expert), Marcello Manca (vice-president and general manager, UL Environment), Emiliano Cecchini (founder, La Fabbrica del Sole).
[46] http://europa.eu/legislation_summaries/energy/renewable_energy/l27035_en.htm
[47] IREX, Italian Renewable Index data 01/09/2011 www.althesys.com/evidence.cfm?evento=81
[48] http://www.ilsole24ore.com/art/economia/2011-08-13/capitali-esteri-puntano-fotovoltaico-081557.shtml?uuid=AaZUVzvD&fromSearch http://www.ilsole24ore.com/art/economia/2011-08-13/capitali-esteri-puntano-fotovoltaico-081557.shtml?uuid=AaZUVzvD&from

installations, after Germany and Spain and ahead of France and the UK[49]. Confindustria believes the renewable sector will be responsible for creating 1.6m jobs and increasing Italy's GDP by 0.4% on an annual basis between 2011 and 2020[50].

Another notable exception to what appears to be a predominantly localised and bottom-up push towards a greener economy - often led by entrepreneurs collaborating in economic or industrial districts - is the role played by regional and local administrations, which in some cases have profoundly influenced the voluntary adoption of sustainability standards by enterprises. For example, the success of the Tuscan Regional Government's Fabrica Ethica CSR programme and the rapid and sustained uptake of the SA8000 standard by Tuscan enterprises can be largely attributed to the awareness-raising and information campaigns with Social Accountability launched by the International Tuscan Regional Office for Production Affairs[51]. Equally relevant is the drive towards more sustainable construction norms by hundreds of Italian Municipalities, 77% of which, for example, are imposing insulation standards on new constructions[52], a regulatory change that has certainly been a contributing factor in the rise of sustainability-focused construction companies.

Despite a late start and little strategic guidance from the Government, Italy as a whole is well prepared not just to meet the challenge of turning its economy into a green economy but also to become a world leader in many sustainable sectors. A rich tapestry of new green start-ups and old enterprises converting to sustainable practices are spearheading this transformation, in some cases opening up new paths thanks to ground-breaking innovations[53]. The rise in number in Italy of green enterprise incubators, of social innovation networks and of sustainability consultancy organisations - such The Hub (Milan, Rovereto, Rome, Bari, Sicily), InVerso (Rome), I-SIN (Naples), avanzi (Milan) or The Natural Step (Milan) - are a testament to the growth of the sector and to its need to provide ever-more sophisticated intermediary support structures. Moreover, the country's latitude and geographical composition offer abundant renewable energy sources (especially sun, water, wind and geothermal), while its culture appears primed to embrace more sustainable lifestyles that reward goods and services which consume less and are locally-sourced and a more holistic approach to economic development as a component of a long-term social and environmental vision. At present, Italy's ecological footprint is set at 5.0, against an average for high-income countries of 6.1, a figure comparable to France and the UK's footprint, lower than Sweden's (5.9) or Ireland's (6.3) and certainly than the US's staggering 8.0[54]Despite these promising factors, there is still a long way to go. Many Italian companies are very skilled and innovative, but still unable to access international markets because of their size and inability to communicate effectively in a foreign language. They are often unable to market their green products/services skillfully abroad, despite the fact that often their quality is superior to those of their competitors. Conversely, many Italian companies market themselves and their products as 'green' on the internal market despite the fact that many of them are actually practicing 'greenwashing' and have little certification to prove their credentials. For this reason a large number of Italian consumers are wary of green labels and don't necessarily believe what companies declare[55].

[49] Wind in Power, 2010 European Statistics - European Wind Energy Association (EWEA)
[50] http://archivio-radiocor.ilsole24ore.com/articolo-977943/notiziario-radiocor-energie-rinnovabili/
[51] ISEAL Alliance, Governmental Use of Voluntary Standards: Innovation in Sustainability Governance - Sept 2008
[52] GreenItaly, ibid.
[53] See section 6.2.3.
[54] Global Footprint Network, 2010 National Data Tables
[55] Ricerca Eurisko Assocomunicazione Upa Italiani Green - www.slideshare.net/guest456c3f/ricerca-eurisko-assocomunicazione-upa-italiani-green

There is a need for more independent supervision and certification of so-called green products and services in order to truly reward best practices and punish companies that are misleading consumers. However these certifications should not represent an untenable obstacle to SMEs that are trying to innovate. Certification alone is not enough: failed compliance needs monitoring and enforcement mechanisms as only this will truly deter wrong-doers. Italy continues to be a country that hampers both home-grown entrepreneurship and foreign investment because of a maze of Government-imposed legal and bureaucratic hurdles, which should be removed especially for entrepreneurs pursuing environmental goals. More support should be given to local initiatives and small entrepreneurs, strengthening on the one hand the capacity of existing professional bodies to connect and foster collaboration across the country and abroad, while on the other hand supporting networks and communities of practice that help local knowledge to emerge and innovations to flourish beyond their localities.

3.3. Environmental legislation in Italy, an overview

Environmental policy began 'officially' in Italy on 8 July 1986 with the law (349/1986) which established the Ministry of the Environment. However other Ministries with similar remits had been created prior to this time including the Ministry of Culture and Environment, established in 1975 and the Inter-ministerial Committee for the Environment (CIPA) in 1979. A early as the late 1960s the Italian Government had begun to respond tentatively to growing public concern over the environmental crisis that was becoming evident to many Italians. This led to a more coordinated effort by the public sector to protect the environment and to improve previous regulations and interventions that were partial and fragmented. Environmental legislation was created in the field of health and hygiene, soil preservation, landscape conservation and nature conservation (the first national parks were established)[56], all of which overlapped significantly with more traditional policy areas such as health, culture and agriculture.

During the 1970s, Italy, like many other European countries, rapidly approved national and regional programmes for environmental protection, creating autonomous administrative and technical support structures and passing environmental laws to reduce air and water pollution, to dispose waste and to preserve natural habitats. At the same time, Italian Regions played a significant ice-breaking role that helped pave the way for national policy reforms. Despite the intrinsic differences between the Regions of southern Italy caused by their legislative and administrative autonomy, Northern Italian Regions were responsible for establishing conservation policies that were far more advanced than national framework laws passed at a later date.

The Italian Constitution makes no references to environmental protection as during the post war years in which it was written (1947), protecting the environment was not considered to be of concern. The only Article in which Italy's duty to protect the landscape is mentioned, Article 9, does so in passing and although it is in theory a principle of great importance, in practice it has been interpreted only in terms of the preservation of the 'aesthetics' of the landscape rather than in terms of preserving the country's ecosystems. Article 117 of the Constitution, which defines the responsibilities of Italy's Regions makes no mention of the environment (only agriculture, forestry, urban planning, and health in general, but no environment). Only with the 1977 Presidential Law (616/1977), were Regions entitled to develop

[56] The institution of the first National Parks in Italy dates from 1991, with a framework regulation (Legge Quadro), and the first established park was the Parco Nazionale del Gran Paradiso (www.pngp.it/en)

environmental legislation, namely in the areas of environmental protection (Article 80), nature conservation (Article 83) and pollution reduction (Articles 101-105). The Italian Regions now began developing extensive environmental legislation, from the prevention of natural disasters and waste disposal to nature conservation and green volunteering. When, with the establishment of the Ministry of Environment in 1986, the State finally took the policy-making lead in environmental legislation, it had to avoid contradicting a plethora of regional norms which resulted in an even-more fragmented and complex legislative scenario.

European states have attempted to systematise their environmental legislation since the 1960s and 1970s by encoding processes and ensuring better co-ordination and simplification of objectives, principles, measures, tools, administrative processes and penalties. However, whereas countries such as France, Britain and Germany have made a concerted effort to remove elements of complexity, contradiction and disharmony within their environmental policy frameworks, Italy still has a long way to go. The percentage of Italy's surface area designated to conservation through national parks or reserves, for example, is now close to the 10% target set by the EU but it is still lower than Germany's 13.9% or Austria's 19%. This is partially explained by the fact that Italy only approved a comprehensive national conservation framework in 1991, whereas France, Britain and Germany did so in 1960, 1972 and 1976 respectively. The Italian scenario is not only hampered by tardy legislation but also by the dispersion of rules within the same policy areas. The need to reorganise the entire legislative code has become an urgent one and one that has already started to be addressed in the field of waste and water management.

Italian environmental policy has developed an important series of principles derived from EU Directives on environment, some of which are of great interest:

1. The principle of prevention, which aims to implement pre-emptive measures to avoid or minimise environmental damage caused by economic or social actors.
2. The principle of subsidiarity, which attempts to ensure that the aims and objectives of environmental policy are pursued at the appropriate territorial level and prioritises concrete decision-making processes that are as close to citizens as possible.
3. The principle of co-operation, which aims to foster the co-operation among institutions and between institutions and society, in order to ensure environmental protection and improve decisions and their degree of acceptance in a spirit of shared responsibility.

In recent years, cross-border co-operation programmes[57] aimed (see also APPENDIX 7 - Environment Related Legislation and Financial Incentives and Resources) at identifying common policy options and solutions between several countries have also developed in line with the growing awareness of a shared global crisis, thus generating a further principle:

1. The principle of international co-operation, which aims at building transnational responses to local problems which by their nature affect the entire planet.

An important factor that has influenced legislation both in Italy and elsewhere in Europe is the emergence of a disparate number of positions by several social and cultural actors on matters relating to the environment. In fact, alongside the official positions of the central and regional Governments, a number of powerful actors, including political parties, environmental groups and the increasingly-pervasive media, have embraced and disseminated environmental principles, sometimes drawn from philosophy and religion, which have contributed to the development of a widespread and diverse environmental culture[58].

[57] europa.eu/regional_policy/cooperation/transnational/index_en.htm

[58] Federazione dei Verdi (The Green Federation became a political party in 1985) but in 1968 with the Club di Roma the first environmental activism begins, followed later on by WWF Italia and Legambiente.

In summary, although there are some significant examples of success at the regional level the overall performance of Italy's environmental policy must be described as inadequate, especially when measured against the constant depletion of the nation's environmental resources and compared to the results achieved by other European States with similar income levels. Environmental policy needs stability and long-term strategic perspective even more than do other fields.

For details on Environmental Legislation see APPENDIX 6 - Environment Related Legislation and Financial Incentives and Resources.

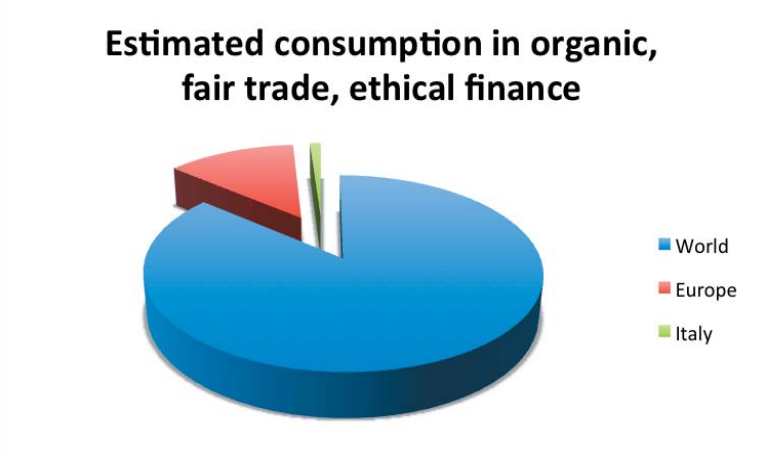
Box 2 - Financial Incentives		
Incentive Program	**Description**	**Web Site**
LIFE	Contribute to the implementation, updating and development of EU environmental policy and legislation by co-financing pilot or demonstration projects with European added value	http://ec.europa.eu/environment/life/
ETAP	Action Plan for Environmental Technologiesaims to catalyze environmentally friendly technologies in order to reduce pressures on natural resources	http://ec.europa.eu/environment/etap/
EIP	Entrepreneurship and Innovation Programme	http://ec.europa.eu/cip/eip/index_en.htm
ICT-PSP	Support programmes for policy information and communication technologies	http://ec.europa.eu/information_society/activities/ict_psp/index_en.htm
IEE	Intelligent Energy - Europe	http://ec.europa.eu/energy/intelligent/
POI Energia 2007-2013	Renewable Energy and Energy Saving Programme	http://www.poienergia.it/
Conto Energia	Loans for private PV installment	http://www.gse.it/attivita/ContoEnergiaF/Pagine/default.aspx
PO FESR 2007-2013	Regional Operatinoal Programmes co-financed by ERDF European Regional Development Fund 2007-2013	http://ec.europa.eu/regional_policy/archive/funds/feder/index_it.htm
RDP 2007-2013	Regional Rural Development Policy cofinanced by the European Agricolture Fund for Ruran Developmenet	http://ec.europa.eu/agriculture/rurdev/index_en.htm

CBC	Cross Border Cooperation programs, along internal EU borders and maritime borders within 150 NM	http://ec.europa.eu/regional_policy/cooperation/crossborder/index_en.htm
TCP	Transnational Cooperation Programs, covers mainly Baltic Sea, Alpine and Mediterranean regions	http://europa.eu/regional_policy/cooperation/transnational/index_en.htm
ICP	Interregional Cooperation Programs cover all 27 Member States of the EU. They provide a framework for exchanging experience between regional and local bodies in different countries	http://ec.europa.eu/regional_policy/cooperation/interregional/index_en.htm
ENPI	European Neighborhood Policy helping regions of both side of the Mediterranean area to share common challenges trough a wider partnership including, for the first time, non-Europeans partner	http://ec.europa.eu/europeaid/where/neighbourhood/overview/index_en.htm

4. GREEN ENTREPRENEURSHIP: A SECTORAL OUTLOOK

All research, statistics and sources used for the preparation of this report tend to describe the green economy as a huge opportunity to overcome Italy's current socio-economic stagnation, which is further aggravated by the heavy crisis shaking the global economies. Eurispes (one of Italy's most relevant research centres on socio-economics trends) in its Italy Report 2010 analyzes the positive trends of the green economy: "The sustainable, ethical, supportive and responsible economy has been transformed from a marginal and insignificant to an increasingly global phenomenon, which can contribute significantly to world economic development"[59].

To assign an economic value to this transformation, Eurispses checked all the changes recorded in recent years in the organic farming, fair trade, ethical finance and renewable energy sectors. Based on this analysis and with reference to the year 2007, Eurispes estimated that the market of renewable energies, organic products, fairly traded goods and ethical finance mechanisms were worth about 810 billion euros worldwide, 122 billion euros in Europe and 10 billion euros in Italy (with an impact on global consumption and Europe, respectively, of 1,2% and 8,2%).



Our elaboration on Eurispes data, 2010

In Italy the consumption of energy from renewable sources has risen from 6.9% in 2000 to 10.7% in 2009. Valle d'Aosta and Trentino Alto Adige regions produce electricity almost exclusively from renewable sources (93%). Waste management in Italy is highly variegated, with peaks of excellence, especially in the North, and infamous cases of mismanagement, especially in the South. On average, in Italy waste management is approximately three times lower than in the rest of Europe, although Italy is world leader in area of paper recycoing and reuse.

In agriculture, Italy can boast the first place in Europe for origin-controlled product certification (DOP and IGP), with 182 products certified, followed by France and Spain. It can

[59] Annex 6 - Italian Report 2010, Eurispes

also claim first place in the field of organic production and export, followed by France and Germany.

The building industry has been encouraged by a series of recent incentives towards upgrading the energy efficiency of buildings, which required a 50% reduction (compared to the limits of 2005) in consumption by 2010. More generally the whole housing and related materials cluster is developing interesting sustainable alternatives. The ceramics sector, amongst the hardest hit by the recession, was one of the first ones to pursue a 'green' diversion strategy. Tiles primarily made of recycled materials and solar tiles able to transform light into electrical energy represent two of the most creative examples that this cluster came up with to overcome the crisis.

Italy is the only country, along with Germany, to have developed technology for the production of unleaded taps and valves. In the wood-furniture sector, Italy's third largest sector in terms of number of companies, the environmental challenge is becoming an important factor for competitiveness, and is becoming an intangible added value for Italian products. Innovation in production processes and industrial raw materials, especially in construction and wood-origin certification, is constantly growing, despite the crisis.

Climate challenge is forcing some traditional 'Made in Italy' sectors to reposition themselves in the market through a focus on eco-friendliness:

- in mechanics, many small and medium-sized enterprises are moving towards the renewable energy sector - including in the fields of plant design and energy production;
- in the automotive sector, Italy, together with France, is European leader in the production of low carbon vehicles, thanks to innovative technologies that reduce cars' consumption, to the adoption of the 'Start & Stop' system and to the introduction of low viscosity oils;
- in the ship and naval sector, the development is focusing on improving existing know-how, developing in particular the characteristics of hulls, materials, engines and fuels used. The sector is working on a project aimed at recycling disused hulls;
- in the chemical sector, low-impact production has become an opportunity to revitalise the industry, and research is being done into new products that re-use agricultural waste, in synergy with the food industry.

The fashion, design and textile districts are developing a more responsible marketing policy, and investing in research of eco-materials and less polluting production systems. The tanning industry has banned chemicals and additives, and pushed for a return to natural leathers that rediscover ancient methods of tannery. Also the textile sector, one of Italy's most relevant in the past, has renewed its attention on natural fibres and is growing together with the market of organic tissues. Over 300 firms have started the process to become organically certified over the last two years[60].

In the last few years Italians have developed more sustainable habits, although many argue that the 'farmer's soul' of Italy, more than in other places on the Planet, has always driven Italians' behaviour, stimulating in particular savings and reduced-consumption. But over the last 10 years a growing attention towards critical consumption has grown, often thanks to widespread information campaigns directed against unethical big corporations or irresponsible large banks. Fa' la cosa giusta (Do the right thing), for instance, was born as a comprehensive guide to critical consumption in cities like Milan, Genoa or regions like Sicily, and as a comprehensive directory of ethical and sustainable firms. Growing ethical

[60] Icea (Italian Institute for Ethics and Environment certification), 2010.

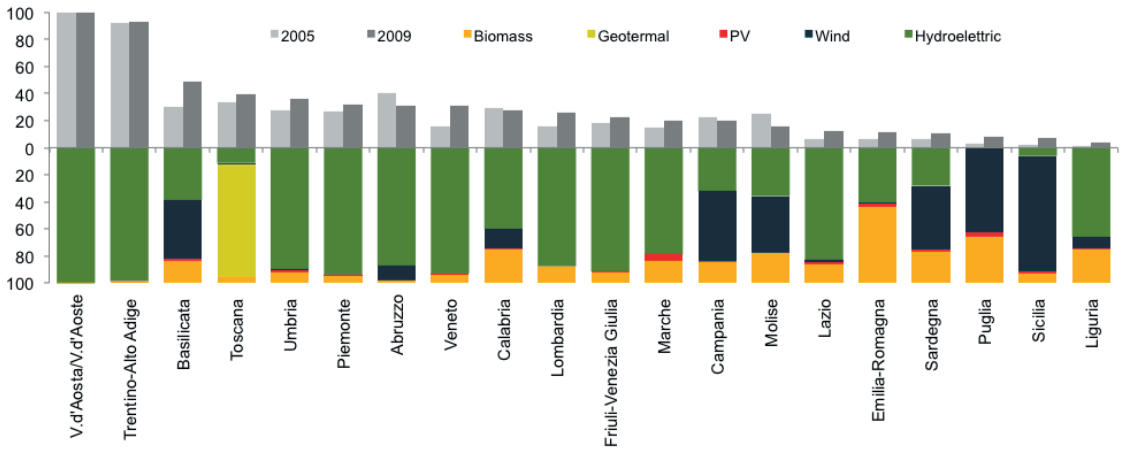
financial instruments and tour operators promoting responsible and sustainable tourism can be considered two further main indicators of this pervasive social change (see also chapter 4.7 Critical consumption and sustainable behaviour).

4.1 Renewable Energy

Gross energy consumption in the world has doubled from the 60's to date, although the consumption of energy produced from renewable sources has virtually remained constant over the same period (12.5% in 1973 to 12.7% in 2007). Italy is the fourth country in Europe in terms of gross energy consumption, with an incidence of 10.2% in 2007 (9.9% in 2001). In Italy in fact there has not been the same growth trend in energy consumption. It has remained stable in the last 30 years with the exception of an increase in 2001-2002[61].

In Europe the main source of supply of renewable energy is represented by biomass and waste (69.8% in 2007)[62] apart for hydroelectric power, while in Italy it is the geothermal the primary source of energy within the renewable industries (39.4%) followed by biomass, wind and solar. In fact, in the field of in geothermal energy, Italy can claim world leadership (with 31 geothermal power plants in Tuscany and a production of over 5 billion kWh per year), and it is exporting its know-how to the United States and Latin America.

Electric energy from renewable sources per Region (2005-2009)[63]



The main Italian law promoting the dissemination of renewable energy installations is Law no. 387 of 2003, which transposes Directive EC 2001/77. Thanks to "conto energia" (see par. 4.2.1 and 4.2.2) photovoltaic systems have been facing a strong increase in total power-efficient, amounting in 2008 to almost 9 times that of 2006, to June 2010 have exceeded 1,300 MW of installed capacity.

Between 1996 and 2008, biomass and waste also showed a strong acceleration of productivity increase, 50 times the gross efficient. In contrast, geothermal appeared static in relation to other alternative sources. In 2009 there was an absolute record in the wind turbines sector, both in terms of installed capacity, which reached 4850 MW, and energy produced,

[61] Eurispses report on Italy, 2010
[62] Market Observatory for Energy, European Commission, report 2009
[63] ISTAT elaboration on Terna data.

which exceeded 6.6 TWh. The Italian wind industry, while not producing turbines directly (most of those installed in the country are Danish or Spanish), is already very advanced, especially with regards to management processes, maintenance and wind farm development. In this context, we report the Sicilian Moncada Energy Group[64], which is building in Albania the largest wind farm in Europe and investing in research and production. Indeed, the market for solar energy industry is the most attractive investment over the past two years, 74% of the market is served by Italian companies for what concerns distribution and installation, but the number drops to 38% if we consider the production of technologies.

If the investment trend in the renewable energy sector remains constant, it is estimated that it could create more than 100.000 jobs by 2030, 82% more than the reference scenario. 73% of workers would be employed in the renewable sector, while 22% would be filling new jobs created through investments in energy efficiency[65]. Industries workers should be added to these numbers, evaluated in the same order of magnitude. Considering the EU's targets for the 2020 strategy[66], Italy could potentially create another 250,000 new jobs in renewable energy, of which only 66,000 in wind.

The general context in Italy seems in fact to be very mature to invest in energy innovation. Many Italian Universities are active in research related to renewable energy sources and their projects are often at the base of major international research cooperation and collaborations with private companies involved in industrial R&D. A rather interesting example in this sense is the one of the Energy Catalyzer (also called E-Cat) invented by Andrea Rossi in collaboration with the University of Bologna[67]. It is an alleged cold fusion or Low-Energy Nuclear Reaction (LENR) heat source, a "process and equipment to obtain exothermal reactions, in particular from nickel and hydrogen". The effective functioning of the device is still under observation and it is disputed among scientists because it challenges the generally accepted laws of physics and established theories. Still, it is an interesting example of the energy innovation drive that characterises a lot of Italian researchers and entrepreneurs.

Italy also has a significant number of good practices: they are almost 7.000 municipalities that have installed at least one farm for clean energy in their territory, more than 2.000 in just 1 year (2009). Above all, it is worth mentioning the case of La Fabbrica del Sole, an innovative enterprise based in Arezzo - Tuscany - which has developed groundbreaking projects in the hydrogen and off-grid fields (see Annex Casestudy).

4.2 Waste Management

According to data released by a 2010 ISTAT[68] report dedicated to the analysis of eco-compatibility of the Italian cities, waste sorting in Italy grew annually only 1,4% and reached 31.7% in 2010 against a target of 50% for all towns in the peninsula by the end of 2009. Despite being planned in 98% of Italian Municipalities, waste sorting is mainly established in the Northern regions, where it reaches the average rate of 40% (with peaks of 47.1% in the Northeast).

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[64] http://www.moncadaenergygroup.com/index.php

[65] Green Peace International, Working for the Climate, incuded in Green Italy in 2009, Symbola 2010

[66] In 2020 European Union is supposed to reach 20% of energy consumption from renewable energy and the target for Italy is 17%. To read about EU 2020 strategy for growth see http://ec.europa.eu/europe2020/index_it.htm

[67] http://www.wipo.int/patentscope/search/en/detail.jsf?docId=WO2009125444&recNum=1&docAn=IT2008000532&queryString=FP:(wo/2009125444)&maxRec=1

[68] 'Urban Environmental Indicators 2010', ISTAT - Italian Istitute of Statistics, 2010.

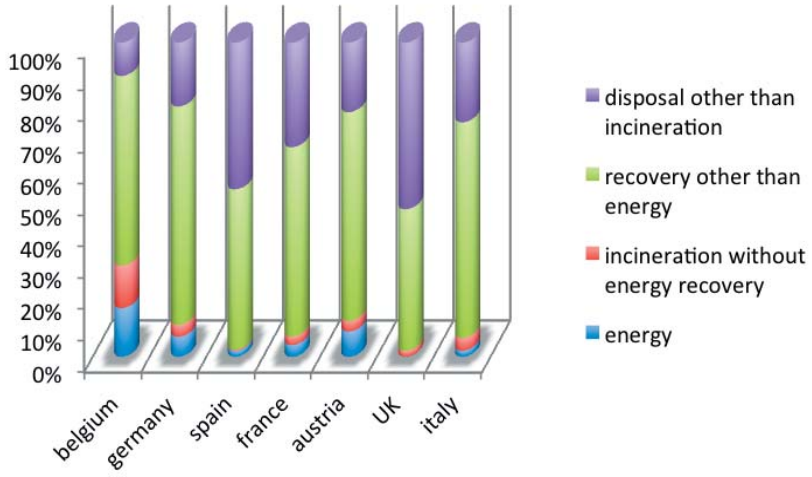
The Centre, South and the Islands lag behind with 28.1%, 21.3% and 15% respectively. Although some Centre-South municipalities (such as Ancona in the Marche Region, Carbonia and Nuoro in Sardinia, Teramo and Chieti in the Abruzzo Region, Benevento and Salerno in the Campania region) show that - thanks to increases of up to 30% - in matters of waste management a radical change is possible, in eleven cities of the South waste sorting is still below the threshold of 10%, with rates even lower than in 2009 in the provinces of Agrigento, Catanzaro, Isernia, Foggia, Siracusa and Palermo.

A more positive waste management picture is visible when one looks at data collected by ISTAT from 2000 onwards. Over the past ten years, there was a 50% collection increase throughout the country.

With 609.5 kgs per-capita in 2010 against 550kg in 2000, all indicators show not only that Italy needs to manage its waste sector more efficiently and soundly, but also that it needs to reduce as soon as possible its waste production[69].

The opportunities in Italy in this sector are considerable, including both advisory services for firms and public administration, and new start-up opportunities for waste collection, waste sorting and recycling.

Total waste treatment by EU country and operation in 2008[70]



ReMedia[71] is a leading Italian consortium that handles Waste Electrical and Electronic Equipment (WEEE) as well as end-of-life batteries and accumulators. the consortia represents over 1000 firms shouldering the legal duties relating to WEEE, firms that produce consumer electronic equipment, small and large electrical domestic appliances, computer and telecommunications equipment, air-conditioning apparatus, toys, medical and monitoring and control devices, musical instruments, batteries and accumulators. With over 45,000 tonnnes of WEEE handled in 2010 and one of the highest rates of return among collective

[69] Over the last 10 years from 2000- 2010 relative values of the total waste production in Italy ha increased of +0,9%.
[70] Eurostat 2008
[71] http://www.consorzioremedia.it/en/

compliance schemes (a 43% ratio between the weight of recycled WEEE and the weight of apparatus put on sale by its producers), ReMedia is prominent in the recycling of WEEE products and is a leader both on the basis of the high percentage of materials obtained from technological waste, which reached 90% in 2010, and for the level of service given to municipal authorities (98.5% in 2010).

Some best practices are available also in the south of Italy, Sicily for instance has in some small centres adopted traditional methods for waste sorting both of private and public initiatives. Caretta Carretta[72] for instance is an innovative way to collect waste in urban areas trough an unconventional method based both on the collection itself and on awareness campaigns directed at citizens. The project was welcomed by the International Solid Waste Association, based in Copenhagen, and presented for the first time in Hamburg, Germany. Castelbuono Municipality[73], on the other hand, is a very small town near Palermo (population: 9,300), characterized by streets too narrow to be accessed by vehicles, where from 2007 waste collection is implemented by donkeys. The collection is made by the animals and managed by a local co-operative of disadvantaged young people. The cost of maintaining a donkey is about 2,000 euro per year, less than half of what a normal vehicle would costs, and this is without taking into account savings in CO2 production. Donkeys, once at the heart of the agricultural sector in the South of Italy, having lost their position after the introduction of mechanised tools, seem now to have found a new role in the 'sustainable mobility' and waste management sector.

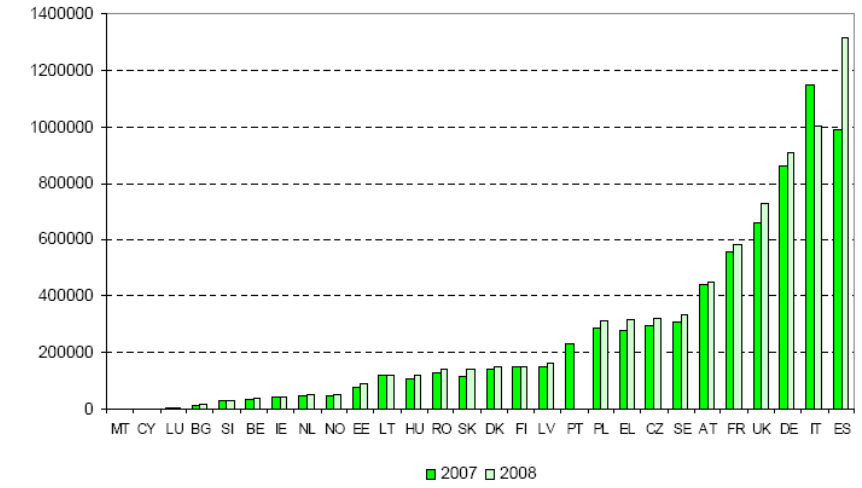
4.3 Sustainable Agriculture and Fair Trade Food

Europe's contribution to the global market of organic products is very significant: it is the second continent in terms of agricultural land devoted to organic production (7.6 million hectares) and the first one in terms of value of sales (18.3 billion euros). At the European level, Italy has been for many years the leader in terms of agricultural land devoted to organic production, the extent of which - after four consecutive years of decline (from 1.2 million hectares of 2001 to 954,000 hectares in 2004, -8.2% - returned to grow between 2005 and 2007, returning to over one million hectares.

Italy's contribution in Europe to the total of agricultural land devoted to organic production was 15,1% in 2007, compared to the 13% of Spain, the 11,3% of Germany and the 8,7% of Britain. The European market that buys most organic products is the German one (5.3 billion euros in 2007, 29% of the total), followed by the British one (2.5 billion euros, 14%) and the French one (1.9 billion euros, 10.4%). With its 1.87 billion euros of sales, Italy stands in fourth place (10.2% of sales in Europe, 5.5% of global sales). Italy, on the other hand, holds first place in terms of the number of workers employed in the organic production sector and is the first producer in the world of organic vegetables, olives, grapes, citrus and cereals. It is also the world's largest exporter of organic products, with an export market worth about 900 million Euro[74]

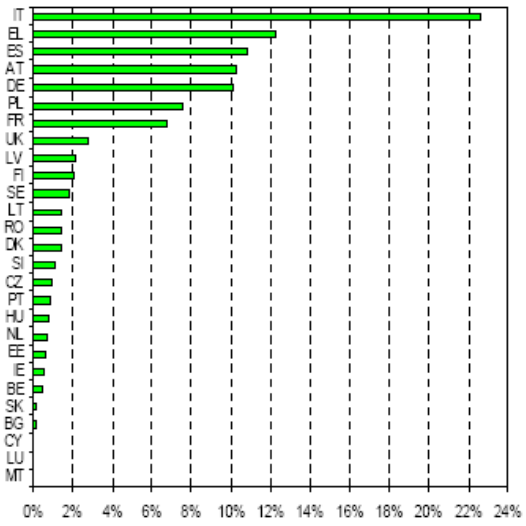
[72] www.carrettacaretta.com
[73] www.comune.castelbuono.pa.it
[74] Annex 6 - Italian Report 2010, Eurispes

Share of EU-27 total organic area (fully converted and under conversion), 2008 (%)[75]



(1) DK, MT, data 2006; (2) CY, MT, PT no data available

Share of organic producers by country in EU-27 total, 2008 (%)[76]



(2)CY data 2004, MT data 2006, PT data 2007

The main support and incentive tool for the agricultural sector in Italy is represented by the PSR - Piano di Sviluppo Regionale (the Rural Development Plan). The plan is co-financed by the European Commission's Common Agricultural Policy (CAP), by Italian State and by the Italian Regions. The 2007-2013 PSR contains an innovative strategy for rural development at regional level, especially when compared to the previous programming period (2000-2007). What emerges is a deeper attention towards improving the quality of products linked to specific areas or regions, alongside a push towards reducing pollutants, sourcing locally, diversifying production and integrating farmers' income with alternative livelihoods, such as renewable energy production and agro-tourism businesses.

[75] Eurostat 2008
[76] Eurostat 2008

On the one hand, the potential of the agricultural, forestry and food processing sectors to produce renewable energy stems mainly from its capacity to produce biomass. Agricultural enterprises are also increasingly able to meet their immediate energy needs through biogas production processes from their livestock. On the other hand, a 2008 survey identified over 18,480 farms in Italy that are offering rural tourism services, a number that is expected to continue growing in 2011, reaching 19,800, a 3% increase compared to 2009. The study points out that there are now 4 rural tourism sites for every 10.000 inhabitants, which occupy 5 for every 100 square km of agricultural land[77].

Alongside the development of renewable energy sources and rural tourism, the agricultural sector is characterised by the rise of new development and consumption patterns, such as those embraced by the GAS - Gruppi di Acquisto Solidale (Solidarity Purchase Groups)[78]. The GAS are a nation-wide phenomenon of consumers' groups - some comprising tens of people - that get together to purchase food and other products, basing the choice of farms from which they buy on their ethical standards, their environmental approach and their proximity. New GAS are constantly born, especially in the North. Today there are over 40 of these groups in Lombardy alone. A conservative estimate indicates approximately 150 GAS throughout Italy, with Piedmontese and Lombard Regions leading the list, involving some 5000 families. Their growth has been exponential: in the last two years the increase has reached 100%.

More generally, an 18% increase was registered in 2008 in terms of direct purchases from organic farms. According to Bio-Bank[79], there are now 1,645 farms, 208 farmers' markets, 1,114 stores and 110 specialised online sites in Italy that offer consumers organic products. These figures are even more interesting when one compares the price of organic products at their origin with the price of corresponding conventional products. According to Ismea[80], prices of organic products have grown compared to conventional products between May 2011 and May 2010. The products that drove this growth where lemons and oranges, which have benefited from growing demand in the Sicilian and Calabrian markets. The fact that consumptions have been growing and that prices have been increasing in a time of economic hardship is extremely telling of how much people are valuing this sector.

Also the share of organic products used by the catering industry is growing. In 2008 there was a 6% increase in the number of organic meals served by school cafeterias, reaching a number close to a million (983,243), according to Bio-Bank. Law n.488/1999, art.59 and other regional laws have led some regions - including Friuli-Venezia Giulia, Tuscany, Marche and Basilicata - to offer contributions to Local Councils that offer organic products in their schools. Moreover, the Emilia-Romagna Regional Law n.29/2002 imposes the exclusive use of organic products in nurseries, kindergartens and primary schools, while 35% of all ingredients used to produce all school lunches must be organically-certified.

AIAB[81] is the most important association of organic producers in Italy, born to sustain and train producers to reach better quality standards and to raise awareness about organic production and sustainable lifestyles. Since 2002, the Aiab association is separated from the Aiab certification institution and has over 15.000 members. AIAB certifies not only fruits and vegetables but also wine, textile, cosmetic products and detergents, bio-shops, meet and puoltry.One of the most important agricultural companies in the organic sector is Alce

[77] Top Rural Survey, 2010
[78] http://www.retegas.org/index.php?module=pagesetter&func=viewpub&tid=2&pid=10
[79] Italy's database monitoring organic market (http://www.biobank.it/en/indexBIO.asp).
[80] Ismea report on Italian agricolture, 2010.
[81] www.aiab.it

Nero[82], a group that includes over a 1000 partners - farmers, co-operatives, distributors and two financial partners. Alce Nero is market leader in the production of organic pasta, biscuits, honey, fruits, and many other food products. Alce Nero is also a partner of the UN's Global Compact, which aims at promoting corporate social responsibility and supports a wide network of certified organic and fair trade producers from all over the world.

One of Italy's most famous organisations that work to defend the rural cultural legacy and promote unique agricultural products is Slow Food. The association was founded more than twenty years ago to promote conviviality at the table and 'good food'. Born in Turin - a city that also organises every two years the famous 'Salone del Gusto' food fair - the organisation has rapidly grown into a movement that spans across the world. Slow Food has now 100,000 members in 150 countries, including 2,000 in France. The Terra Madre project was born in 2004 within the Slow Food movement, and consists of a forum whose objective is to build a knowledge network between producers, farmers, cooks and researchers at the global level. Slow Food also protects local cultures against the standardisation imposed by the mainstream commercial logic of production, distribution and economies of scale[83].

4.4 Housing and related materials

It is well known that the construction sector has a huge impact on the consumption of energy and environmental resources. According to data released by major research institutes, construction in Italy uses about 40% of national energy, 40% of natural resources (raw materials) and produces 25% of the waste, and this without considering the loss of heat in buildings caused by poor insulation. The European Union has set objectives designed to curb the problem of pollution and dramatically reduce power consumption. Compliance with the standards prescribed by this legislation requires a new way of thinking about architectural design and urbanization, and new models of organization and project management that are derived from thoughtful and sustainable practices[84].

In the United States, The Green Building Council, an organization that works to promote sustainability best practice in the building sector worked for years on developing a tool to measure the environmental impact of buildings. Finally, in 1999, it published the LEED® (Leadership in Energy and Environmental Design) Green Building Rating System™ for new constructions, an innovative tool enabling professionals and stakeholders to improve their understanding of the positive impact of sustainable constructions. The LEED certification system is spreading rapidly in Europe. In Italy it is promoted by Green Building Council Italia, a non-profit organization sponsored by the Distretto Tecnologico Trentino in the Trentino Alto Adige region[85]. The LEED System is a voluntary certification programme designed to enhance and promote high-performance for sustainable buildings. Through evaluating the building, the designer can find out the environmental impact of their design choices. The evaluation is divided into five categories that concern and affect human health and the environment:

1. site sustainability
2. water use efficiency
3. energy and atmosphere

[82] www.alcenero.it

[83] http://www.salonedelgusto.it/, http://www.slowfood.it/, http://www.terramadre.info/

[84] At a European Level in July 2010 new rules will enter into force with the directive 2010/31/CE on energy efficiency in buildings and on the 'near-zero energy buildings', which will replace from 1 February 2012, Directive 2002/91/EC

[85] See section 6.2.1. Industrial Symbiosis and casestudy.

4. materials and resources
5. indoor air quality

The environmental certification of buildings is becoming a key issue for the housing market. The law providing incentives towards upgrading the energy efficiency of buildings has made a significant contribution by requiring a 40% reduction in consumption in new homes by 2010[86]. Interesting data comes from the Report of the National Observatory for Building Rules, edited by Legambiente and Cresme Research Institute in 2010. According to their survey, based on a sample of 1000 municipalities, 188 of them revised their building regulations on the basis of a review of their environmental and energy certification standards. Moreover, the analysis shows that there are about 557 Italian municipalities in which innovations have been introduced relating to energy and sustainability in construction, including: thermal insulation technologies to improve the energy efficiency of facilities; the use of renewable energy, rainwater collection and water conservation techniques; and the use of recyclable building materials. Conversely, over the last 5 years 33% of Italian families have intervened to reduce the energy consumption of housing, 22% have replaced the fixtures and 4.6% have installed solar panels[87]. An interesting example is the Village of the Future outside Bergamo, in Lombardy. The buildings with the certificate CasaClima[88] Class A are built according to the most advanced green construction principles.

At the forefront of Italian companies in the construction sector is Permasteelisa[89], which, with a 30% share of the international market, is a leader in the production of facades and architectural coatings. The company has developed a technology of shells, which collect heat from the sun, exploit solar energy and incorporate photovoltaic cells that filter air pollution and noise. Another important example is the 100K house project, created by Studio Mario Cucinella architects together with La Fabbrica del Sole, which won the prestigious residential and sustainability awards at the Real Estate Exhibition in Cannes and was exposed at the Shanghai EXPO 2010. It comprises an 100 square meters house, which - thanks to integrated photovoltaic systems, to heat-harnessing surfaces in winter and to air cooling mechanisms in summer - is a sophisticated bio-climatic machine.

The wooden furniture sector, the second biggest in Italy in terms of number of companies and the third in terms of sales, is one in which the environmental challenge is gradually becoming the most relevant competitive factor, generating added value for Italian products, which allows major gains in international markets where awareness for sustainable goods is more widespread. Recently, the production of wood products is going through a period of rapid innovation in both manufacturing processes and as industrial raw material, especially in construction. In the latter there is a growing market for housing constructions made entirely out of wood, which saves 50 to 80% on heating costs. The Furniture District of Livenza (Distretto del Mobile di Livenza) is one of the most representative examples of Italy's sustainable industries. The Livenza District has obtained the Eco-Management and Audit Scheme (EMAS) certification, and is engaged in the creation of a virtuous cycle of environmental management in the region, in order to spread the culture of sustainable development between public and private organizations. The application of the EMAS Regula-

[86] D.lgs. 192/05 transposing 2002/91/CE", and more recently DPR 59/09. DM 26 June 2009 (National Guide Lines) - D.lgs. 3 march 2011, n.28 transposing Directive 2009/28/CE promoting renewable energies.
[87] Cresme survey 2010.
[88] ClimateHouse Agency of Bolzano is a public body leader in the energy and environmental certification of buildings, both for new constructions and for restored buildigns. It is also a training body for operators in the construction industry.
[89] www.permasteelisagroup.com

tion is very different to initiatives in the sector. It is the first time in Italy that the application for certification comes not from a single company but by a body representing both public entities (provinces, municipalities and the Chamber of Commerce) and private enterprises. This is a national pilot project that can be used in the future as a national example for other situations[90].

The ceramics sector, which was badly hit by the recession, was among the first ones to take the 'green way' to fight the crisis, while continuing to invest in innovation. 'Ceramics of Italy'[91] is the trademark for the Italian ceramic industry worldwide, including to date 45 firms. As the institutional image of the Italian ceramic industry, the label safeguards the reputation and promotes awareness of Confindustria Ceramica member companies and their products through a range of activities, including marketing and promotional shows and fairs but also investments in research and development for the sustainability. 'Ceramics of Italy' firms are today certified ISO 14001, EMAS, BAT and LEED, they publish a yearly report on the impact on the environment, and have signed a protocol to establish specific limits of emissions per firm.

'Ceramics of Italy' embodies the will of the Italian ceramic tile industry to promote the awareness and esteem of Italian ceramic tiles amongst international users, to elevate the status of these products from mere building materials to fully-fledged furnishing elements capable of enhancing the value of the projects in which they are used.

4.5 Textile and fashion

The textile industry produces both, natural fibers such as wool, silk, cotton, linen and artificial ones, like most common synthetic fibers - polyamide and acrylic - derived from petrochemical industry.

Most of the garments on the market contain polyester, spandex and lycra, materials with very low cost but highly polluting in production and very difficult to recycle. Nylon requires 30 to 40 years to decompose[92]. The textile and fashion industry involve very different processes for raw materials and technologies used. In particular, the processes of dyeing and printing can be highly polluting for water[93].

Pollution is not the only challenge affecting this sector worldwide: according to the International Labor Organization, in the world today there are about 246 million working children, aged between 5 and 14 years, in the field of textiles and the European Trade Union Federation of Textiles, Clothing and Leather have developed a specific code of conduct to deal with the problem[94].

In the last decade, some major brands in the textile and clothing have embraced sustainable development strategies. Some operators use cotton and hemp fibers from other manufacturing processes and treatment without the use of toxic substances or pollutants, others have developed new materials from algae, soy and bamboo. For clothing also recycled materials are more and more used.

[90] http://www.distrettodelmobilelivenza.it/politiche-integrate-distetto-mobile.php
[91] http://www.laceramicaitaliana.it
[92] www.organiccottondirectory.net, www.sustainablecotton.org, www.ec.europa.eu/environment/ecolabel
[93] www.helpdesk-reach.it, www.ec.europa.eu/environment/ecolabel
[94] www.ilo.org

The debate on the issue of sustainability is certainly not new in the fashion industry, although in recent years there has been a growth in the green market, however, has not yet been fully translated into a competitive advantage for SMEs and the crafts.

The most recent innovation is represented by organic tissue, a sector that involves more than 200 companies in the world and about 800 retailers. The renewed focus on natural fibers, confirmed by the decision of the UN Food and Agriculture Organization (FAO), to devote year 2009 to this type of fiber, is part of a process that began long ago. In particular, there is a growing movement to support the improvement of living conditions of millions of farmers producing natural fibers, creating the link between agriculture, textiles and territories.

In Italy organic textiles is still a niche market, but at the same time is possible to capture signals that indicate a potential for growth.

The brand Cardato Regenerated C02 Neutral[95] in the Prato district is born with the aim to cancel the print of the fabric production process of textile, certifying, at the same time, that product was made with regenerated material. To obtain this certification, the product must be made within the Prato district, made at least of 70% recycled material, while the producers must have accounted for emissions of C02 and purchased by the Chamber of Commerce emission credits corresponding to the production volume for which they intend to cancel the impact.

Stylists, designers and young entrepreneurs are launching successful products created with objects used at the end of their useful life. An example is Momaboma[96], a brand from Bologna area, since 2003 makes several products with a unique hand-crafted based on recycling. Newspapers, old magazines, vinyl, leather jackets and even worn tires of wheels, old bags of cement to be thrown away or abandoned by the Italian Postal bags, wallpaper, but also old military fabrics are used to create bags, trolleys, wallets and more.

Another case is Benatural[97]. The fabrics and materials used come from high fashion industry, it is therefore of the highest quality materials, which, however, included in the normal production cycle, would be destined for landfill or incinerator, thus contributing negatively to consumption and waste of non-renewable resources. The margins and scraps of cloth, waste production, inventories of major production companies are recovered, recycled and reassembled to create new clothes.

These are just some examples of small business but according to ICEA (Institute for Ethical and Environmental Certification), the new sustainable fashion, the so-called ethical fashion in Europe alone generates a turnover of 370 million euros (data 2009).

It is worth mention a project called Textiles & Sustainability[98]. Started by Ibimet - National Research Council and the Foundation for Climate and Sustainability (FCS), the project involves some manufacturers representing the various phases of a textile product craftsmanship: from the collection of raw material to packaging. Through sustainable production, care for the environment and protection of know-how, Textiles & Sustainability intends to promote a new product that guarantee of traceability of raw materials as the ways that led to its manufacture. Thus takes the micro chain starting from the agricultural sector, the traditional

[95] http://www.cardato.it/it/index.asp
[96] http://www.momaboma.it/
[97] http://www.be-natural.it/index.html
[98] http://www.tessilesostenibilita.it/

natural fiber of Tuscany, from wool, cotton, flax and hemp, passing through less conventional and still being tested, broom and nettle. Thus arrives at the mill, where it is transformed into yarn and then in the piece, through the use of the old frame. The pieces finally come to the tailor, where skilled craftsmen turn them into clothes. Agro-geological studies for the evaluation of soil and crops fibers and dyes, technical analysis of the perception on the skin tissue, measurement of thermal resistance and breathable fabrics, as well as ecological and organic tests, represents the scientific support of the project from his birth.

One significant stories come from Prato, despite the economic difficulties recorded in recent years, remains one of the districts most important sector in our country. Tecnotessile[99], a company working for the improvement of technological innovation and the competitiveness of firms: it is a research project to confer “smog-proof” properties to textile fabrics through the use of nanoparticles. The fabric is a “smog-proof” textile material (made of both artificial and natural material) which exploits the principle of photocatalysis through the use of titanium dioxide. Titanium dioxide has an antibacterial function: when the tissue comes into contact with the smog pollutants that are present in the air we breathe every day, it turns a photocatalytic reaction, which is able to destroy harmful substances such as, for example , benzene or volatile organic solvents. The opportunity to exploit anti-pollution materials are numerous in indoor environments that can be applied to improve air quality and make the interior more healthy (hospitals, schools, offices, private homes)

Cittadellarte Fashion - Ethical Sustainable Bio Trends (BEST) Pistoletto Foundation[100] is a platform dedicated to the operational development of a structured fashion industry based on the principles of sustainability, where the creative side interact with all stakeholders of the fashion world in more sustainable levels from design to production, from distribution to communication.

At the Fair “Do the Right Thing”, the first guide for green economy, edition of 2010 the fashion was the star protagonist with the Fashion Critical Special Section and a specific exhibition called Critical Fashion[101], dedicated to the green fashion where the value of beauty, creativity and stylistic innovation combines the environmental and social sustainability.

4.6 Mobility/ Automotive

The transport system is characterised in Italy by the primacy of road haulage with a traditional scarce attention to alternative systems such ad rails transport or sea shipping. This lack is particularly severe if considered the geographical peculiarity of the country that could have benefited from a more rational network and differentiated connections. The picture that emerges form the National Observatory on Sustainable Mobility in the top 50 Italian cities managed by Euromobility Italy is one of a nation in search of a sustainable mobility model[102]. The conditions of some Italian cities are increasingly compromised, starting with the high rate of motorisation - still the highest in Europe, with 62 vehicles per 100 inhabitants.

The infrastructure dedicated to cycling highlights the gap between north and south, mainly due to cultural and historical reasons: central and northern regions have always widely used bicycles for local transportation. Of the 50 cities monitored by the Observatory, nine in the

[99] http://tecnotessile.it
[100] http://www.cittadellarte.it/eventi.php?even=7
[101] http://www.criticalfashion.it/english
[102] Interview with Lorenzo Bertuccio Director Euromobility in Marco de Mitri Blog

South totally lack bike lanes or paths. But there are also notable examples of virtuous municipalities that have established a dedicated office, the Bicycle Office, and taken part in national initiatives for the promotion of slow mobility such as "Bicibus," an organisation that encourages groups of children to cycle to school under the supervision of adults.

In recent years there has been a great increase in the number of bike sharing facilities across Italy. The number of shared bicycles went up 68% between 2008 and 2009, while the number of users increased by a staggering 206.5%. Once again, the picture is of a two-tier country: a Centre-North that embraces innovation, and a South that - with rare exceptions - trudges behind. Bike-sharing seems to work better in those cities that have introduced it in a massive and decisive way, such as in Milan, which has provided 1.400 public bicycles and 100 stations located close to the city's main central spots.

According to a recent customer survey carried out by ICS - the national Car Sharing Initiative - to understand the reasoning of users and the nature of their interest in the service, car sharing adopters generally do so due to the difficulty of finding parking spots. This explains why so many people from large urban centres - where parking problems are greater - have given up their car and have chosen to share one with their fellow citizens.

Back in the automotive sector, the picture is quite encouraging. Italy, together with France, is European leader in the production of low carbon vehicles. In the field of sustainable mobility - alongside Fiat and Ferrari, which for years have been investing in sustainability-oriented R&D - there are other, perhaps less known, but equally important best practices. For example, Faam S.p.A.[103] in Monterubbiano (Marche Region) is leading firm in Europe in the production of energy-saving batteries, lithium technologies and electric vehicles, while Landi Renzo[104] in the Emilia-Romagna region is a world-leading company serving more than 30% of the market for LPG and CNG sustainable automotive fuel systems and components.

Twelve years after the introduction of the Mobility Manager in the national legislative framework (Ministerial Law for sustainable mobility in urban areas of 03/27/1998), there are 67 area offices and slightly more than 800 managers whose main responsibility is managing in an efficient and sustainable manner the mobility of medium and large firms and of public administrations. These figures can contribute enormously to thinking more strategically about the challenges of mobility. The Mobility Manager is a strong innovation for its interdisciplinary character that touches both the technical, logistical and infrastructural aspects of a company or administration, and has the power to influence the behaviour of thousands of individuals. In addition to innovative services already available - such car sharing and bike sharing - the Mobility Manager is able to provide a set of low cost and readily available alternatives to the use of cars. The sum of many small actions can really add up to important results. Yet, there are still many administrations and companies that - despite the risk of penalties imposed by the Ministry of Environment, have not yet identified the person responsible for the mobility of their employees.

4.7 Critical consumption and sustainable behaviour

In 2005 an interesting research published by IREF[105] (Institute for training and education research) titled "Choosing the good: a survey on responsible consumption" shows that 36%

[103] http://www.faam.com/
[104] www.landi.it
[105] http://www2.fabricaethica.it/documenti/352.Consumo_responsabile.pdf

of Italians have chosen the practice of responsible consumption. It is a significant percentage given the comparison with the 2002 survey, where the value was 28.5%. The data are not very up to date but if we consider all the statistics refered so far on this report, is likely to assume that the data is further increased.

Critical consumption in Italy is a gradual approach in the recent years towards a more aware consciousness of purchases -and more recently with the economic crisis- has seen a increasing number of people pay more attention to the purchases as well as to more sustainable behavior in general. Aware, responsible and critical can all be considered synonymous of this new approach to consumption. This because it is true that a driver of this attitude is certainly the price of a product, but is equally true “money saving” is balanced by the demand for transparency (organic products) by political choices (campaign to boycott products of multinational companies that exploit child labor in developing countries) by fears (boycott of the banks that finance arms manufacturers).

The sectoral outlook in this report has extensively highlighted Italians critical consumption habits, from the Solidarity Purchase Groups to environmental certification of buildings. Other sectors are that of sustainable tourism and ethical finance, but we can easily affirm that in both the real world (that of the local markets and farmer shops) and the virtual world (blogs and social networks that provide instructions on how to grow vegetables on a balcony or how to make the dish soap self made) Italians are becoming more careful consumers.

4.8 Eco Rural Tourism

Over the last few years, many tourists have increasingly sought comfort and relaxation in rural resorts. Rural tourism encompasses any touristic activity implemented in a rural area, which by its very nature stimulates sporting enterprises - such as trekking, cycling, riding - alongside hospitality in farmhouses or countryhouses that offer accommodation and traditional food. *Farmhouse holidays* (*agriturismi*) are a particular type of rural tourism, which offer specific types of activities linked to the fact that the resorts are connected to working farms. Most of the rural tourism offerings that have sprung up in Italy in reponse to this growing market demand have done so thanks to the support offered by national and EU programmes aimed at strengthening the rural sector.

According to Law N. 96 of February 2000, *farmhouse holidays* comprise those hospitality activities offered by rural entrepreneurs and directly linked to their agricultural enterprise - be it a crop farm, a woodland or a breeding farm. *Farmhouse holidays* can sell services in the following areas: hospitality; subsistence based on local produce; recreational, cultural or educational activities aimed at adding value to the local area and to the rural heritage. According to the EU, on the other hand, rural tourism has a broader definition, and encompasses any kind of touristic activity undertaken in a rural area, including *farmhouse holidays*. This distintion makes it hard to compare data between Italy and the rest of the EU. Usually, Italy draws a line at the regional level between rural tourism and *farmhouse holidays*, with the former subject to agricultural legislation and the latter to tourism legislation.

At the end of 2008, 22% of Italian *farmhouse holiday* enterprises were based in Tuscany, followed by Trentino Alto-Adige (17% of enterprises, mostly in the Bolzano area) and Veneto (6.6%). The largest enterprises (measured on the basis of their accommodation capacity), however, are based in Puglia and Sicily (with an average of 19 beds per enterprise). The samllest ones, on the other hand, are in the Province of Bolzano and in the Campania region (8 and 9 beds per enterprise, respectively). between 1998 and 2008, Italian *farmhouse holi-*

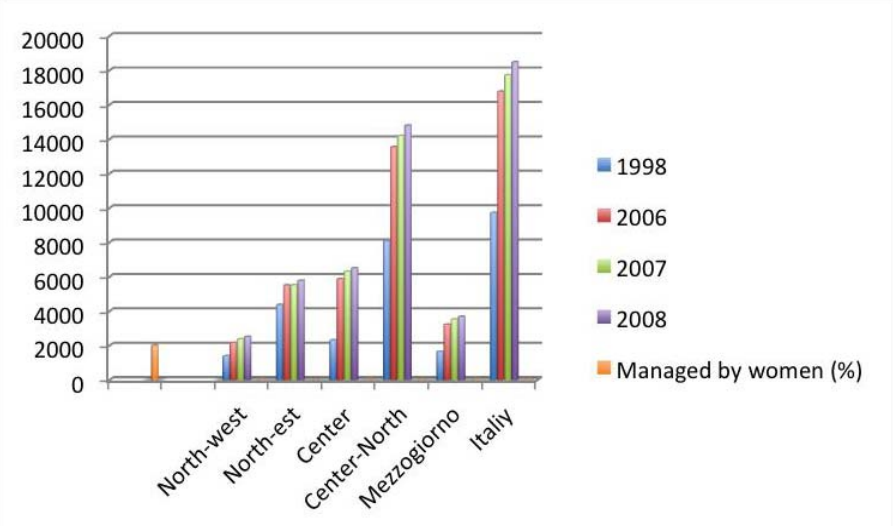
day enterprises grew at a ration of 90.2%, from a starting number of 9,718 to 18,480. The number of accommodations generated by this increase went from 93,824 to 189,013, a reflection of course of the demand alongside the supply rise. Always between 1998 and 2008 there was an 80.3% and 193.5% increase respectively in the number of rural enterprises offering cooked food and tastings on their premises. There was also a significant growth of all sports and outdoor activities offered, especially hiking and horse-riding.

One interesting aspect is the high number of women who run these rural enterprises: 35% across the country. In those regions where rural enterprises are a more recent establishment, women head up to 70% (Valle D'Aosta), 50% (Liguria) and 47% (Campania and Abruzzo) of the total number of enterprises.

The *farmhouse tourism* sector is constantly growing. According to Coldiretti, Italy's foremost farmers' organization, *farmhouse tourism* generated about 10 billion euros in 2011 alone, accounting for 12% of the total income generated by the tourist sector. While at first *farmhouse tourism* was mainly present in mountainous or hilly areas, it is now developing rapidly in the plain areas, complementing rural incomes and providing crucial resources to restore abandoned buildings, consolidate employment and open up new markets for local produce. *Farmhouse tourism* also stimulated the development of other rural tourism sub-sectors, such as rural B&Bs and self-catered country houses, which are not directly connected to agricultural activities, yet still contribute to bring visitors and resources to rural areas.

The demand side has developed and changed as well. At first, consumers came primarily from a small group of connoisseurs passionate about local traditions and high-quality food and wines. Today, consumers belong to a much wider circles of nature lovers, food lovers and people generally looking for peace and tranquillity in the countryside. Rural enterprises, which at first were mainly operating in the summer months, have now taken to running all year round, at least during weekends. Most consumers are Italian, although there is a noticeable growth of tourists from abroad, who make up today 27% of all rural tourists.

Agriturismi licence - Year 1998 e 2006-2008 *(Istat, 2009)*



BOX 3 - Responsible tourism

Since 1998, the year the Italian Association for Responsible Tourism (AITR) was founded, eco and responsible tourism has been growing significantly in Italy, both in terms of numbers and of quality of the offer. AITR members rose from the original 11 to over 50 today. All the non-profit associations that join AITR subscribe to the 'Chart for Sustainable Travel', which was written with the aim of promoting a model of tourism that was fair in terms of income distribution, that respected local communities and that had a low environmental impact. The chart applies to three points in time - the 'before', the 'during' and the 'after' - and examines all major aspects of a journey, giving both travellers and tour operators concrete indications to understand how to plan and implement a trip that is truly responsible from its onset.

WWF Italy launched a few years ago a useful web portal on green tourism in the country, which includes a wide and specialised range of sustainable locations to visit and activities to do. Compared to when the portal was launched, though, the eco and responsible tourism sector has gone through interesting changes, and is now characterised by the following important developments:

1. The growth of the 'DIY' responsible tourism sector, so called due to its self-organised approach by people who choose to spend a weekend discovering a historical centre or a remote area and choosing 'fair B&Bs' as their accommodation;
2. The rise of anti-Mafia tourism, which takes the form of accommodation in buildings or properties that were confiscated from the Mafia and reassigned to social enterprises or non-profit associations, or of visits to farms and companies that are fighting the Mafia and refuse to pay protection money;
3. The discovery by Italian travellers of international community-based tourism, organised and managed by indigenous communities especially in developing countries.

An interesting example of alternative and responsible touristic product in Italy is the so-called 'pesca turismo' (fishing tourism). Fishing tourism is a recreation activity that takes place on board traditional fishing boats and represents an opportunity to generate more income for fishermen, who are allowed to host passengers on their boats.

Libera Terra Mediterraneo is a new product of based on the experience of Libera Terra, major association in Italy managing land confiscated from the Mafia. This project was created in partnership with Signature Tours, an agency specializing in tourism and Slow Food association for the food and wine component. They organize trips in a new concept of sustainable tourism: the one based on fight against criminal organizations.

Comunità ospitali, is a territorial project literally meaning Community welcoming people" and is an initiative being developed within the Association of Villages of Authentic Italy. The Communities are welcoming people represents an innovative model of tourism, in which the village and its community are the destination and the main motivation of the holiday. They are places where citizens, tour operators and administrators share a single strategy of public accommodation, a shared vision able to ensure guests a memorable stay. The protagonists of this project are the small towns that, starting from the assets and resources present and available in the area, organize a system of modern hospitality, environmentally sustainable and careful not to transform the character of local identity.

BOX 4 - Ethical Finances

The asset value of ethical funds managed in Europe has more than tripled in seven years, this has also contributed to the Italian market for investment funds, although to a lesser extent than other European countries: in the European ranking for 2007, Italy was ranked seventh for the number of funds ethical managed (6.6% of European total) and sixth place for the same asset value (6.4% of European), having been passed since 2001, from Belgium, France and Switzerland.
Despite the global economic crisis, ethical funds have also experienced significant growth in 2008-2009 period.

- The number of funds managed in Europe rose to 27% compared to 2008
- The asset value of ethical funds increased 9.4% in 2009, exceeding the 53.2 billion euros.

The Italian experience of business ethics was born in the late seventies and early eighties, with the emergence of self-managed savings. They are the Mag (which stands for Mutual Self Management). Born in Verona in 1978, with the objectives to use the money better than a bank, steering it towards projects that are compatible with “high” he values. Today MAG in Italy are 5, collecting a total of about 9 million of savings in Turin, Verona, Milan,Reggio Emilia and Venice. In addition to Mag (indeed, on the initiative of some of them) in Padua in 1999, the first Ethical Bank, was created.
Banca Popolare Etica is a co-operative bank, created with the aim of providing an operational tool to business ethics, but also to be a bank for the “third sector”. Today, the Banca Etica has 17 branches all over Italy, over 40.000 customers (there were 16.000 at the end of 2002) and almost 40 million euro in capital (in June 2011). In 2003 bpe has collected 252 million euros in savings, and has granted more than 150 million in funding. BPE has set a “Ethics sgr” asset management company that allows investments in financial products with a high degree of transparency and social responsibility (certified by European Ethibel).
In Italy there are other realities of ethical finance: Milan is worth remembering MAG 2 through subscriptions offering the possibility of investing capital in projects of social.
Microfinanza SRL is an independent company specialised in providing worldwide microfinance consultancy services and technical support. In the last ten years Microfinanza has acquired an in-depth knowledge and developed a preforming working methodology in several kinds of assignments: advisory and consultancy services, implementation of microfinance projects and provision of training services. Microfinanza is investing in Italy, and more recently has developed in partnership with the Italian NGO Acra and the and CoopEcuador the project initiative “Ecuador – remittances for the development” aiming to contribute to the economic and social growth of the Ecuadorian population in order to promote co-development actions in Ecuador through the involvement of migrants living in Italy (initiative co-founded by Cariplo).

BOX 5 - Other funding sources for the green sector

Italy is not the easiest place where to start a green enterprise - or an enterprises for that matter. The domestic venture capital sector, although slowly emerging with such funds as Immogest Capital, is still embryonic. Most local funds are no larger than 25m, and only a few reach 80m. Conversely, the Italian market - ridden as it is with legal and bureaucratic hurdles - is too dangerous a place for foreign investors to step into. There are, on the other hand, a number of philanthropic foundations that have some of the world's largest endowments and have funded over the last 20 years a huge number of environmental projects. Amongst them, Fondazione Cariplo, which since its establishment in 1991 has funded about 20,000 projects of non-profit organisations, making grants in excess of of 1.2 billion, 2% of these in the environmental area. Like Cariplo, many foundations are making a significant contribution to the green sector in Italy, but not to the green entrepreneurship sector, as their statutes forbid them explicitly to fund profit-making ventures. As a result, all start-up green enterprises that have a for-profit legal structure are barred from applying to this sort of funding. There have been recent conversations inside several foundations about changing this policy and exploring the worlds of venture philanthropy and social venture capital, but it is still too early to see the impact of such conversations. Green enterprises that need credit will go, for the most part, to banks, as explained in the Ethical Finance sector, but Italian banks are notoriously risk-averse, and tend to finance only realities with proven collaterals. This means only proven ventures from established actors will receive credit, while true innovators from unusual backgrounds will struggle to survive. Finally, a number of venture capitalists and business angels have grouped into associations - such as Italian Business Angles Network Association (IBAN) and the Italian Association for Industrial Research (AIRI). These serve a scoping purpose, and more rarely a financing purpose. Given the vastness of Italy's environmental needs and the potential for green start-ups, this funding scenario is unsatisfactory and in need to reform, if it wants to keep pace with Italy's changing economic structures and encourage a new generation and green entrepreneurs to emerge.

5. NEW FRONTIERS, EMERGING SECTORS, CONCEPTS AND TECHNOLOGIES

Innovating for sustainability has recently become a mantra for many leading Italian companies, especially those focused on the export market. New green technologies, for example, stand as the greatest opportunity to boost commercial ties between Italy and China, according to Emma Marcegaglia, President of Italy's main industrial association Confindustria. "Italian firms are the forerunner in environmental protection and green economy", she stated grandly when interviewed by the Chinese press[106]. Indeed, new green technologies and products are born constantly in Italy, but the country has a mixed rating when it comes to promoting technological innovation, not just in the green sector. Based on both 'inputs' - Government policies supporting education, workforce quality, infrastructure, and trade - and 'performance' - R&D results, business performance, employment growth, and other impacts of innovation, Italy ranked 35th (out of 125) on INSEAD's Global Innovation Index[107] and 38th (out of 49) on the Boston Consulting Group's Global Innovation Index[108]. This is hardly the context out of which the world's leading green technologies will be born. The innovation reality is in fact very complex and fragmented, despite some great success stories, and the future of Italy's entrepreneurial sector is one and all with Italy's green sector. There will be no future for companies that do not embrace the innovation and sustainability challenge successfully[109].

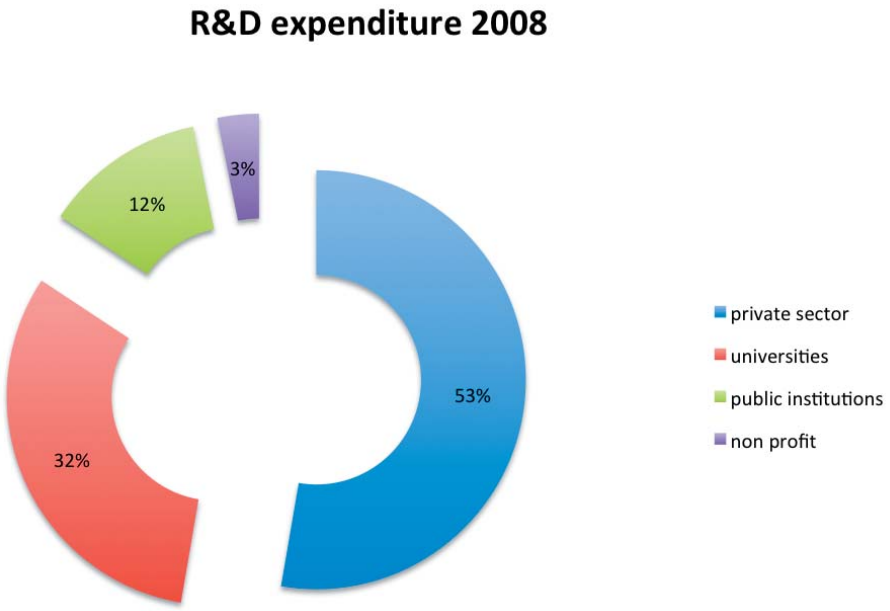
5.1 Industrial Symbiosis

Much has already been said about Italy's capability of creating industrial symbiosis through the emergence of 'distretti industriali' (industrial clusters) that see enterprises work collaboratively, pooling resources (especially for R&D), sharing knowledge and growing collectively as well as individually. This phenomenon is present across the country, but when assessed through a sustainability lens, and especially a green technology one, few clusters stand out as much as the Autonomous Province of Trento and its Distretto Tecnologico Trentino (DTTN[110]). For over twenty-five years this northern Italian province, located in the Alpine Trentino region, on the borders with Austria, has focused on promoting energy conservation and eco-friendly development. Today, through a series of public initiatives, capital investment, business incentives and legislation, the Autonomous Province of Trento has managed to become a green business and research hub and Italy's point of reference in the field of clean technology. With the creation of the Green Building Council Italia and the establishment of Habitech, an environmental technologies and renewable energies consortium (the first of its kind in Italy, see case-study), Trentino has become the new frontier in sustainability and is on the way to becoming one of Europe's centres of excellence in green building, renewable energy and environmental technologies. Its ambition is to create a full-blown industrial cluster on the site of the former tobacco manufacturing factory of Rovereto, on

[106] http://news.xinhuanet.com/english2010/indepth/2010-07/19/c_13405103.htm
[107] http://www.globalinnovationindex.org/
[108] http://www.globalinnovationindex.org/
[109] As expressed by Giovanni Petrini, former Director of Italy's main fair for the social and sustainable economy, Fa' la Cosa Giusta, and echoed by other participants at the Green Focus Group, Milan.
[110] http://www.dttn.it/

which Progetto Manifattura intends to create the largest clean-tech and sustainable energy industrial park in Italy[111].

This clusterisation of the productive industrial sector is important when one looks at R&D capabilities across Italy[112].



Land of Hidden Gems, Italian Trade Commission, New York 2011

Research is conducted through a network of science/technology parks, business incubators, several private research institutes and public research organizations. Technology parks are most interesting with regards to industrial symbiosis, because they bring together companies, venture capitalists, universities, laboratories and research centers, pooling knowledge and resources to increase output. The first Italian science park was set up in Trieste in 1982; in the 1990s a national programme extended the creation of technology parks to the whole nation, favoring the less developed areas. According to the Italian Network for Innovation and Technology Transfer to SMEs[113], 44 Science and Technology Parks now operate in Italy. Since, like in the case of industrial clusters, the emergence of new green technologies and specialisations will be enhanced by the presence of technology parks, it is good to see them increasingly turn their attention towards the themes of sustainability and green innovation. Interestingly, among the 806 spin-offs recorded as operating in Italy, more than 90% were born in the last 8 years and over 80% were located in the northern-central Italian regions, next to where the most active Italian universities are. Even more interestingly, 'Energy and Environment', with 16.4%, was the second most represented spin-off sector after the ICT sector.

[111] http://manifattura.wordpress.com/il-progetto/
[112] Research in Italy, Land of Hidden Gems, Italian Trade Commission, pages 6 - New York 2011
[113] http://www.riditt.it/

A good example of industrial symbiosis for sustainability is the Sustainable Chemistry Innovation Pole situated in Novara[114] (Piedmont), which was founded in April 2009 and consists of about 20 partners belonging to the private sector (start-ups, small, medium and large companies) and the public sector (Universities, one local authority). The innovation pole offers the opportunity to gain access to high-level infrastructures and services, as well as to public funds for research activities aimed at the promotion of a more sustainable chemistry. The managing authority of the Sustainable Chemistry Innovation Pole is a consortium named 'Innovative bio-based and Sustainable products and processes – IBIS'. It has a double vocation: on one hand, it aims to develop biobased products (and to disseminated a sort of 'bio-based philosophy'), on the other hand it focuses on the ideas of sustainability and environmental impact reduction. Another good example is that of the ceramic cluster of Modena and Reggio Emilia, in the Emilia Romagna Region of Northern Italy, which was one of the first to develop strong environmental awareness and to seek to combine environmental protection, health and safety with sustained market competitiveness. The cluster developed a system of authorized 'quotas' to progressively reduce the ceramic industries' emissions into the atmosphere and created 'S_TILES', a web-based initiative to conduct an effective environmental and social communication strategy between cluster members that went beyond a purely technical or promotional project.

5.2 New Technologies and Products

The companies that perform well in terms of new green products and technologies are those characterised by strong individual leadership that set them on course to become a beacon of sustainability and innovation. Such is the case of two leading manufacturing companies in Northern Italy - Valcucine, producer of luxury ecological kitchens (see case-study) and PALM, producer of ecological pallets - both of which are run by two individuals (Gabriele Centazzo and Primo Barzoni respectively) who are extremely passionate and vocal about environmental principles. Other companies thrive and innovate for sustainability within localised industrial clusters (such as Habitech in the Distretto Industriale Trentino, see above and case-study). Finally, there are some that are wealthy enough - either because of their size and volume of trade, or because they are part of multinational structures - to invest considerably in R&D and come up with market-leading green technologies and products. Such is the case of FIAT's research into spark ignition engine technologies and low emission hybrid technologies[115], which has led it to become a forerunner on the international stage in green mobility innovations.

Capturing the vast underworld of new technologies emerging from the Italian green entrepreneurship sector, however, is very hard. Some are very localised, yet are having a tremendous impact on their environment. Such is the case for example of the already-cited La Fabbrica del Sole, a co-operative based in Arezzo, Tuscany, which on 30 April 2008 inaugurated the world's first hydrogen grid delivering energy to an urban centre. In 2010, it registered the Off-Grid patent to construct structures that are not connected to the main energy, water and sanitation grids. The buildings are fitted with an integrated renewable system that meets all its energy needs, both electric and thermal, and has a closed water cycle, that uses *in loco* purification to treat black-water. In 2010 Off-Grid was selected for the 'Better City, Better Life Expo 2010', and for the Italian Pavilion ('AILATI: Riflessi dal futuro') at the 12th International Architecture Exhibition in Venice. The example of La Fabbrica del Sole (see case-study) is one amongst hundreds, all of which could easily deserve a chapter in this study.

[114] http://www.ecrn.net/eventsandactivities/ibisnovara.php
[115] http://www.lct-italyusa.com/en/data/RINOLFI.pdf

A good way to get a bird's eye view of new green technologies and products emerging from Italy is to access the list of winners of Legambiente's annual 'Premio all'innovazione amica dell'ambiente'[116]. For over 10 years, a composite jury of environmental campaigners, technology experts and entrepreneurs, brought together by one of Italy's leading environmental NGOs, have rewarded and given visibility to Italy's entrepreneurial best practices in terms of innovation and sustainability. In all these years, the winners have been several, including:

- Novamont, a chemical giant, which in 2010 developed Mater-Bi, an innovative family of bioplastics that uses substances obtained from plants, such as corn starch, and biodegradable polymers to create products with similar or even better characteristics than those of traditional plastics, but which are perfectly biodegradable and compostable.
- Refin, a ceramic tiles manufacturer that in 2009 created a tile collection made - for the first time in the ceramic industry - using post-consumer recycled content: a high-quality paste containing 20% of post-consumer recycled glass from the recovery of the cathode ray tubes of obsolete TV sets and PC monitors.
- ILVA, a natural wood varnish company, which in 2007 developed Ozocare, an innovative type of varnish based on natural solvents that emits 100 times less ozone than a traditional varnish and 10 times less than a water-based varnish.

Another interesting indicator of the growing presence of innovative green technologies and products in Italy is the list of Italian Start-up Of the Year Finalists in 2009 and 2010. Most of them are in the ICT sector, but a growing number are in the clean-tech and environmental sector. Amongst them:

- Electro Power Systems, a clean-tech start-up engaged in cell fuel systems through the development and commercialisation of the first hydrogenpowered system for business continuity with multiple output voltages.
- Eolpower, an academic clean-tech spin off that develops, produces and promotes innovative small size wind turbines and offers services in the field of renewable energies (wind and hydro generators).
- P.A.N., a start-up active in the field of natural water purification systems (constructed wetlands), which also designs and manufactures renaturalization, nature trails and educational initiatives to support environmental monitoring activities.
- ESAE, a start-up that uses bio-fertilization and irrigation systems able to reduce the amount of chemically active components, in order to obtain from the fields a depuratory rather than a polluting action.

A final reflection should be made on Italy's effort to meet its commitments towards the Europe 2020 goals and towards the International Convention on Climate Change, and in particular its effort to develop climate adaptation technologies. Altogether, as pointed out in the previous paragraphs, the overall strategic guidance by the State is poor or absent, and the inventiveness and determination of individual realities truly astounding.

Most R&D in this sector is led by large private corporations, such as ENI, which is working on advanced projects to meet carbon-reduction targets, especially in the area of carbon capturing and storing technologies (CCS). Another large corporation that is doing a lot of work in the sustainable R&D sector is ENEL, to the point that on 5 May 2008 it signed a Memorandum of Understanding on clean coal technologies including CCS and ultra super critical coal fired power plants technologies with the Ministry of Science and Technology of the People's Republic of China (MOST) and the Italian Ministry for the Environment, Land

[116] http://www.premioinnovazione.legambiente.org/section.php?p=edizioni

and Sea (IMELS). ENEL has also opened the Fusina hydrogen power station, the first commercial-scale plant in the world that is fuelled with pure hydrogen[117].

Some university consortia, in collaboration with innovative green enterprises, are also working towards developing technologies for carbon-emissions reduction. One of the most notable is the University of Turin, which is working with Gruppo Mossi Ghisolfi to produce ethanol from ligneocellulosic biomass. Its main advantages are the abundance of this particular type of biomass , which originates from trees and agricultural waste; its low cost; its yields, 4 times higher than 1st generation sources; and the fact that it does not compete with food production sources. The company has recently created a subsidiary - Beta Renewables - to market this innovation globally, investing 250m euros to build a 40ktpa industrial scale cellulosic ethanol plant in Crescentino, which is scheduled for start-up at the end of 2012 and will be the first industrial facility in the world producing second generation bio-ethanol.

[117] http://www.enel.com/en-GB/media/news/fusina_rossi/index.aspx

6. PERCEPTION OF GREEN ENTREPRENEURSHIP BY ITALIAN STAKEHOLDERS

The findings of this chapter come from focus group discussions held in Rovereto, Milan, Rome and Catania, and interviews with a range of stakeholders including green entrepreneurs, managers from the financial and public sectors, consultants, activists and social and green sustainability practitioners. (see Appendix-2 for full report)

6.1 Green Entrepreneurship as a concept

All the respondents felt comfortable with a wide-ranging 'ethical-eco-bio-sustainable' model of green, in which the concept is not simply confined to the environmental sector but also includes emerging social needs and ethical values[118]. In this model, everything is environment - not just nature. Society and the way it functions, including consumption, lifestyle and economic production should all be considered as part of the environment[119]. Rather than being a separate component of a system, the environment is therefore the frame in which every other component performs.

Some concern was expressed by focus group participants about the concept of the green economy and on the economy itself as a driving force. They asked why the economy should drive the process toward new green paradigms, arguing that an economy-centric approach can cause problems, and that therefore, while innovation (as part of the concept of entrepreneurship) should be kept as a useful conceptual tool, it is very important that the concept of economy is scaled down and considered as part of a holistic approach that includes all facets of human well-being[120].

Sustainability was seen to be - at least in theory - appealing, new, simple, convenient and with a multiplying effect, because it clearly works better, and because it has evident, practical and immediate advantages[121]. The green perspective was also perceived as a perfect mechanism: a vital, regenerating cycle able to convincingly replace the traditional and non-sustainable linear production chain (extraction of natural resources and raw materials > manufacturing > distribution > consumption > disposal). The green model also focuses on a concept of shared value that surpasses the concept of Corporate Social Responsibility (CSR). The 'green' label has been strongly linked to sustainability and the 'sustainability' label to moving towards a new lifestyle that shows how the existing consumerist model is unnecessary and ultimately distracts people from pursuing happiness and well-being[122].

Unfortunately – apart from experts and practitioners - a clear understanding of what constitutes a green enterprise seems generally lacking. According to those interviewed, the common perception of green entrepreneurship generally considers a business or chain of production green if it is conscious of (and pays attention to) its impact on the environment.

[118] Alessandro Nasini, Focus Group Discussion (FGD), Rome.
[119] Vincenzo Scuto, FGD, Catania.
[120] Alfonzo Molina and Giorgio Antonazzo, FCD Rome.
[121] Emma Schembari and Alessandro Zappulla, FDC Catania.
[122] Sebastiano Spina, FGD Catania.

However, for the average small or medium enterprise (which make up the majority of businesses in Italy), 'green' is synonymous with legal constraints, obligations and procedural requirements. It can be seen also, conversely, as an opportunity for an injection of public funds into the business, thanks to various public incentives provided by the law[123].

Although experts and practitioners recognise that sustainability is attainable and potentially beneficial to all, ordinary people and decision-makers do not always acknowledge this. There is a serious gap between the levels of awareness and understanding among professionals and the behaviour of ordinary people[124]. Although eco-friendly solutions are now accepted by the scientific community, people are generally not ready to accept the new mindset and behaviours required by this new model. People are resistant to change, policies are not applied, new industrial processes are avoided, and patterns of consumption patterns do not evolve. There is a general cultural resistance, strongly reinforced by solid economic and political interests, which are intricately interconnected with the old model.

6.2 Green Entrepreneurship as a model

Participants saw green entrepreneurship as a combination of the use of innovation for targeting emerging market opportunities and the adoption of a totally new long-term perspective[125]. Overall, however, they thought it was still early to speak of a clear-cut green entrepreneurship sector, and that too many people were jumping onto the bandwagon without clear credentials or certification. This confuses consumers and makes them feel like many products and services that are described as green are rarely so[126]. A set of common characterising features, however, generally emerged from the discussions. In order to be green an enterprise has to be: a) eco-friendly, b) locally-based and locally-driven, c) ethical and oriented toward social reciprocity[127].

A distinction between 'green attitude' and 'green fashion' was made by participants, suggesting that, according to the above-mentioned characteristics, some enterprises from the green sector are not actually green, while others, despite their core business belonging to traditional sectors, perform in a green way. In other terms, a green enterprise can be recognised by the relationships it establishes with the environment, its surroundings and human beings. If we accept this model, we have to admit that the perfect green enterprise does not exist in the real world. The pure eco-friendly, locally-driven and ethical enterprise is rather a model and a benchmark to be applied to so-called green enterprises as well as to any other kind of enterprise[128].

More than a simple opportunity, the green model was also seen by several participants as an unavoidable survival technique: switching to green (seen as sustainable and renewable approach to the production chain) is not a simple option but a necessity in the current market turmoil[129]. Becoming green is a necessity both for the single firm that wants to find its way into emerging markets, but also for local communities, as well as for countries and for the planet as a whole. The future according to this perspective is not only unavoidable (there are no alternatives and we are all obliged to become greener to survive) but also provides a wide range of opportunities. Beyond green marketing, there is a need for substantial change and this is becoming more and more evident for all.

[123] Fabiana Musicco FGD, Rome and several respondents in Rovereto.
[124] Mario Trincali and Vincenzo Scuto, FCD, Catania.
[125] Caterina Banella, FGD, Rome.
[126] Respondents in FGD Milan and Rovereto.
[127] Paolo Guarnaccia, FGD Catania.
[128] Emma Schembari, FGD Catania and respondents in Rovereto.
[129] Veronica Caciagli, Simona Limentani FGD Rome.

For many respondents, solving the challenges of Italy's enterprise sector and building a stronger future for the country's economy is in itself a way to strengthen the green enterprise sector, because only those enterprises that fully embrace the sustainability challenge will survive in the future. The situation is such that they cannot afford not to become more green. This is not just a fad or a marketing ploy: the future of the planet is at stake.

6.3. Green Entrepreneurship as a phenomenon

Participants and respondents felt that 'green entrepreneurship' is both a convenient label and a reflection of a cultural shift[130]. There is a clear perception in some economic sectors that something is emerging that can be labeled as 'green entrepreneurship'. It should be noted that there is a difference between those economic actors who are providing green services to the public (for example in the areas of natural resource management, waste management, pollution control, climate change adaptation technologies, etc.), and those who are carving out a green space for themselves, as opposed to economic actors who are engaging with the market with products that are greener than their counterparts. It remains to be decided whether the latter - which includes firms who are greening their actions by reducing waste, cutting down on emissions, using less energy, etc. – should be considered green enterprises or not[131].

The general perception is that the bulk of the green sector is still weak and inconsistent. There seem to be two levels within the green sector with few pioneers of excellence who brilliantly show the way forward, and, right behind them, actors who follow the lead if only to meet a growing market demand, but without necessarily being green entrepreneurs through and through. This can especially be seen in the popularisation of the 'organic' label and in the general disinformation of the vast number of potential consumers. While the demand for 'green' products and services reflects a certain initial interest and curiosity, legal frameworks and general business culture remain generally unsatisfactory[132]. As a result the critical mass for a real switch to 'green' is far from being achieved.

Meanwhile, respondents felt it is true that public opinion and consequently political discourse have adopted some green nuances, but the question remains whether it was superficial and cosmetic (green-washing), or a substantial effort toward more sustainable business and market models. In any case, the public and official versions of the green perspective should be much more optimistic and promising. This, they felt, is especially important in Italy because there is a lack of trust that needs to be addressed and solved[133]. The certification process of organic production, for example, is not considered reliable and the general trust of Italian customers regarding green traceability is quite low. While the switch of Italians from general consumption to green consumption depends on trust established between different stakeholders, the traditional Italian attitude is characterised by individualism, suspicion and distrust towards the public system.

In addition, the main driver for the rise in demand of green goods was considered by them to be still characterised by fear rather than positive values[134]. People fear pollution, poisoned food, the irreversible degradation of the habitat and therefore increase their green consumption. This sense of fear is exploited, marketed and managed. The gap between perceived

[130] Respondents in FGD Milan
[131] Most participants in Milan and Catania were favourable.
[132] Giorgio Antonazzo and Caterina Banella, FGD Rome and respondents in Rovereto.
[133] Andrea Pugliese and Simona Limentani, FGD, Rome.
[134] Alfonzo Molina, FGD Rome.

and real performance of various green sectors was also considered. It is usually said that in general the organic agriculture and renewable energy sectors work well, but respondents felt that in reality the renewable energy sector has been a heavy and non-sustainable cost to the Italian system, while the organic production sector is an inflated market, created neither by informed and critical demand nor by a fair, practicable and transparent set of rules[135].

6.4. Bottlenecks and constraints

Respondents observed that the gap between where we are at - in terms of greening our economy - and where we need to get to is so wide, it sometimes feels impossible to fill. The taking off of the green sector is hampered by fragmentation and by the lack of favourable legal and political settings. The market itself appears to be weak, lacking - especially in the Centre-South - a resolute demand for green products by the general public. Poor strategic guidance makes it difficult to change deep-rooted bad practices (for example along production and distribution lines), especially when there is little support from the State.

This lack of support by the public system - including, especially in the South, the lack of implementation of Green Public Procurement legislation, whereby 40% of public expenditures should be green - was felt by participants are particularly negative. Most agreed that law enforcement failure is one of the major bottlenecks for the sector[136]. All respondents agreed that deep political change is necessary for a top-down approach to be possible, for at the moment the public sector is unwilling and unable to pursue long-term visions. If change did happen, all sorts of public-sector led interventions could have a huge impact on the way the sector develops. One group felt that a new legal status for green (social) enterprises would help in the transition towards a greener future, as it would offer a stronger backing and support (e.g. through new financing mechanisms) for those who are operating in a greener way.

Apart from external constraints, opinions vary on the actual sustainability of the 'green model'. Respondents were split between those who believe that sustainability is financially sustainable and those who believe it is not. For the former, the connection between small-scale change within individual consumption patterns and more complex industrial production processes mean that sustainability can be not only socially and environmentally beneficial, but also financially convenient. Even the decontamination of polluted areas, normally seen as a complex, costly and intractable problem, can be seen as a potential provider of jobs, investments and local economic development[137]. On the contrary, the latter group of respondents believed that for the majority of Italian enterprises - which for the most part are micro and small - sustainability is not financially rewarding, therefore sustainable. Without incentives and support, their conversion to green practices is not profitable and cost-effective, especially from a short-term perspective, the only perspective nowadays possible for most SMEs[138]. One mitigating factor, however, was seen to be the fact that many Italian firms are still owned by single families, and in this sense there is a sense that these families will care about the future more than a faceless stock market[139].

[135] Alessandro Nasini, FGD Rome.
[136] Generally, from participants of the FGD Catania and Rovereto.
[137] Fernanda Pellegrino and Emma Schembari, FGD Catania.
[138] Beatrice Marisei, Giorgio Antonazzo, Alessandro Nasini FGD Rome.
[139] Especially in the FGD in Milan.

6.5. A Bottom up process

Some respondents observed that most enterprises embracing green values are responding to a bottom-up cultural change that is putting sustainable behaviours at the core of every-day actions. They do this by offering greener products and services to the public, and in so doing they open up the market further and create a virtuous circle between cultural change and economic pathways. This cultural shift in terms of growing sensitivity towards green behaviours is undeniable and is triggering a plethora of bottom-up initiatives (one above all: GAS, solidarity purchase groups) that are reshaping the economic landscape, despite their fragmentation and lack of co-ordination[140]. In general, these good practices tend to be scattered (especially in the South) across several domains and sectors, and still incapable of producing a significant structural change. In any case, beyond the legal, macro economic and structural constraints, most analysts remarked on the positive value of such micro-developments.

Thousands of ordinary individuals are indeed building a more sustainable Italy, a push that was described as coming from the country's 'backyards' and stemming from a shared sense of responsibility. Thousands of individuals are composting their own waste, building solar panels, insulating their home. They are an army of DIY green entrepreneurs. Harnessing this small but growing community is a possible solution and a way through. A new green culture is progressively emerging from the bottom, despite the lack of law enforcement, the mis-management of public funds and the persistence of speculative attitudes by many financial actors. Respondents observed that, realistically, the switch to a true green economy is not going to be led by politics or by the financial system. The switch will happen when those ordinary people who act differently will become a critical mass and trigger a momentous cultural shift in the way we produce, consume, move and dispose of our garbage. The motto "leave to your children a better world than the one you received from your parents" encapsulates the vision of a new generation of entrepreneurs and ordinary people who have a deep sense of responsibility towards the planet and their fellow human beings.

Respondents stressed that a deeper connection between the market and civil society is the only way for a new form of human-centred economy to emerge, one which looks at the environment not as a mere source (of energy, food, minerals, etc.), but as the ecosystem in which we live and on which we depend to survive[141]. Several participants agreed, however, that once this bottom-up approach gathers true momentum it needs to be flanked by a top-down strategy that creates the right conditions for change to happen better and faster. Top-down guidance means, for example: more investment into green R&D, greater financial rewards for green excellence, more structured punishments (e.g. through taxation) for bad practices, and a prioritisation of the environment in all public sector interventions and strategies.

6.6. Green perspectives

Generally, the global economic crisis was seen by respondents as a unique, if painful, opportunity to change the way the economy works[142]. People are now forced to question the usefulness of a model that has let them down so badly, and to do some hard thinking around the relationship between our current lifestyle and the long-term prospects of personal fulfil-

[140] Generally among participants of the FGD in Milan, Rovereto and Catania.
[141] FGD in Milan.
[142] Fernanda Pellegrino, FGD Catania.

ment and sustainability. This soul-searching in times of crisis means people are more willing to question things and are more open to the idea of experimenting with new paradigms.

When respondents were asked to try to imagine the future[143], they foresaw systemic collapse (or at least a series of disruptive changes, from both an economic and environmental perspective) that would make a 'business as usual' approach untenable. All groups expressed the belief that only those firms that put sustainability at the heart of their strategy will survive. The others will be forced out of the market. But given the lack of strategic guidance, the bureaucratic weight and the relative backwardness of most economic actors (despite several examples of best practices), few respondents predicted a leading role for Italy on tomorrow's international scene. Participants felt that urgent improvement was needed in the way information was gathered and disseminated, especially given the media and information technology's capacity to alter cultural norms and create virtuous (alongside vicious) behavioural circles[144]. A strong need emerged to connect more effectively the thousands of initiatives that are happening on the ground. Also, respondents felt that better education at all levels - in schools, in firms, in society at large - was key to achieving more sustainable practices and to supporting the development of sounder economic policies.

In this sense, one respondent observed that the future of green entrepreneurship in Italy is the future of Italy tout-court[145]. The scenario at the moment looks bleak. It's characterised by poor guidance and vision by the State; by omni-present bureaucracy and legal uncertainties, which hit in particular SMEs; and by excessive taxation and inadequate support services. Faced with these challenges, many entrepreneurs which could fight the crisis by innovating and embracing sustainability chose instead to move their production to cheaper parts of the world. This is a defeat not just for Italy's economy (with increased job losses, urban degeneration and the growing de-linking of the economy and society), but also for the environment (since lower sustainability standards in many new industrialised countries and less legal control often result in lower environmental standards, more carbon emissions, etc.).

The enhancement of a green culture should not be seen as something complex or artificial, on the contrary, it should be felt as something simple, natural and attainable. It should be removed from the realm of abstraction and translated in everyday actions[146]. From the pioneering northern regions like Trentino, through the celebrated medieval central regions like Tuscany, to the still struggling but promising southern regions like Sicily, Italy is still closely connected to its rural and localised past. In a rapidly globalising world, respondents felt that an important answer to the challenge of sustainability could be found in the memory of the past, which offers simple and attainable models easier to relate to for many Italians than a distant and uncertain future.

[143] Especially in Milan, during a World Cafè session that followed the FGD.
[144] Alessandro Zappulla, FGD Catania and generally form the FGD in Milan.
[145] Giovanni Petrini, FGD Milan.
[146] Paolo Guarnaccia and Sandro Polci FGD Catania and Rome.

CONCLUSIONS

These conclusions are split into 2 sections. In the first one we present, on the basis of a SWOT analysis, the polarised synthesis of the most relevant findings of the study. In the second one we put forth some recommendations and developments that we hope will happen in the future.

SWOT Analysis

All the information collected in this study can be presented in the form of a SWOT analysis, which helps us understand the strengths, weaknesses, opportunities and threats of the green entrepreneurship (GE) sector in Italy. The most crucial points are included in the table below:

Strengths	Weaknesses
6. Italy's ecological footprint consumption is set at 5.0, against an average for high-income countries of 6.1 7. Italians stakeholders generally share a holistic approach to GE, encompassing environment, shared value and social innovation 8. The GE sector is one of the few positive trend in Italy in terms of investments, market, employment, profit and induced economy. 9. Italy is one of the main producers and global leaders in some GE sectors (i.e organic food, energy) 10. Italy performs picks of innovation in specific GE sectors (i.e. textile, ceramic)	1. The Italian environmental policy lacks of soundness and vision 2. The regulatory system is scarcely harmonised 3. There is a weak enforcement of the environmental laws and investment on R&D 4. The GE is particularly fragmented and it is not able to converge into and ultimately build an integrated system 5. The green sectors that particularly require governance capacities and synergies between private, public and local communities prove to be particularly weak (i.e. waste management, transport and mobility)

Opportunities	Threats
1. The global and national crisis could spin off and accelerate the move toward the green revolution 2. Italy displays several potentials for the development of GE (latitude and geographical composition, abundant renewable energy sources, culture and lifestyles…) 3. Italian companies and SMEs generally show good resilience and high adaptation capacities 4. Italy is populated by a crowd of "small green heroes", people which are at the same time green consumers and micro-entrepreneurs	1. The non harmonisation and weak endorsement of the legal system together with the heavy bureaucracy risk to seriously affect the growth of the GE 2. The fragmentation and not connection of initiatives and micro-sectors risk to miss the creation of a critical mass of producers and customers able to switch into green the entire Italian system 3. The bulk of the Italians still remains captivated by non-green habits, especially in certain domains (i.e. mobility, respect for the nature, sense of civil responsibility)

Conclusive Remarks

As we draw the conclusions of this report, we feel a need for a fresh start. Everything starts within the environment and everything - sooner or later - returns to the environment. This report has adopted a position based on the opinions expressed by those Italian entrepreneurs, policy-makers, experts and professionals who were interviewed, and who were read and heard within the context of this research. This position stresses the fact that green entrepreneurship is not a compartmentalised economic sector, but rather a cross-sectoral way of doing business that reaches all environments, from the most natural ones to those most affected by human agency.

For this reason, the boundaries of green entrepreneurship blur into the sustainability field, in all its economic, environmental and social facets. For many practitioners and analysts, giving the right value to these dimensions is the best way to define and understand the concept of green entrepreneurship.

This translates first and foremost into a deep respect for the natural environment. Secondly, it translates into a preference for that proximity, those resources, that knowledge and those opportunities that each Italian region and territory are able to express. Thirdly, it translates into a kind of production - both of goods and services - that embraces reciprocity, creates shared value and strives for a positive impact on people, beginning with the most vulnerable. 'Environmental', 'social' and 'innovative' are the three key appositions of the green enterprise ecosystem.

But it would be inappropriate to suggest here that such a holistic approach to the field of green entrepreneurship is what characterises the majority of Italian consumers, entrepreneurs, policy-makers and the media. On the contrary, there is still quite a gap between the most elaborate and forward-thinking notions of 'green' and the day-to-day practice that emerges from the available data and statistics. 'Green' reflects therefore all sorts of fragmented realities: legal constraints, financial opportunities, sudden fads, demand fluctuations, marketing strategies. The picture grows fuzzier, raising the stakes of a game that Italy has just started playing.

For many, the crisis we are living is an opportunity. The shifting conditions of the global economy demand radical change. Over and over, during the course of the research, people stressed the fact that joining the green movement was no longer an option, but an absolute necessity. It is a necessity for those individuals who want to remain alive, healthy and active, for those enterprises that want to remain onto the market and for those governments that are supposed to be caring for the Planet they have been entrusted with. In this sense, the crisis makes this systemic shift less onerous for us all. As the recently-published UNEP report "Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication" points out at the global scale, investing in the green economy represents a viable and sustainable strategy towards addressing the challenges that Italy faces today[147].

To date, however, Italy's economic engine is not green. Not yet, at least. What the country is lacking at the moment is a long term political perspective that shows the way to its citizens. It also lacks policies that turn trends into processes. The legal framework is too fragmented, contradictory and redundant, bureaucracy is too discouraging and fiscal pressure too onerous to reward best practices and punish bad ones.

Meanwhile, what is new, sustainable and 'green' germinates and grows in every corner of the country. In some cases it does so outstandingly, like in the case of organic agriculture or renewable energies, two sectors that have seen a blossoming of enterprises in recent years, giving work and attracting investments at the national and international level. These green enterprises appear to live healthier, more productive lives than their traditional counterparts, discovering new markets and carving out new niches. They do fail, however, to harmonise their actions and they exist despite the system in which they are immersed.

The entire green sector appears, in fact, extremely fragmented in Italy, including its laws, compartments, firms, solidarity purchase groups, certification systems and distribution channels. While this report has aimed at offering a comprehensive overview of the sector, in truth it is impossible to paint a truly coherent picture. This is - most probably - because the story of Italy's green entrepreneurship sector is a polyphonic story, made up of realities that are for the most part small and hard to position. Even the most conventional analytical frameworks, based on geographical fault-lines that have characterised the country for decades, show their limitations as the South - usually the most backward economic region - suddenly emerges as a leader in organic agriculture and renewable energy production. In fact, an analysis of the green entrepreneurship sector does split the country into three categories, but not the usual geographical ones that are de rigeur in most economic studies of Italy:

- **The Trail-blazers**, a category composed of firms capable of conquering international markets, with high levels of research, development and innovation, and capable of bearing the Made in Italy banner towards new green frontiers;
- **The Followers**, a category that includes a great number of enterprises that are showing resilience by embracing a 'green' approach in response to a radically transformed scenario, and to a lesser extent firms that take this 'green' turn for slightly more opportunistic reasons, or simply because they are very sensitive to how the market behaves;
- **The DIY Pioneers,** a final category of Do-It-Yourself people that comprises those heroic micro-entrepreneurs who are self-taught, visionary and extremely passionate, who fight day after day against a system that does not support them and who live, breathe and think sustainability, at times building their visionart green micro-enterprises literally in their backyards.

[147] http://www.unep.org/greeneconomy/GreenEconomyReport/tabid/29846/Default.aspx

Although these three categories never really overlap, they do offer a narrative framework to understand the development of green entrepreneurship in Italy. This triptych is framed by the notion that Italy remains, even after several decades of industrialisation and economic development, a country that is still deeply anchored to its local identities and knowledge. From Trentino Alto Adige, the Alpine region at the forefront of European environmental protection, to Sicily, the Mediterranean island-region torn between its natural beauty and its social backwardness, via Tuscany, the Central region that is striking a balance between its Medieval legacy and its visionary environmental conservation policy, green entrepreneurship trickles, takes root and blossoms in all these areas, transforming them as it is transformed by them. Innovation and tradition live side by side, offering a glance of a future in which Italy will be greener than it is today.

It is hard to predict when the green entrepreneurship revolution in Italy will reach its critical mass, and when the great majority of consumers will expect better quality and lower social and environmental impact. It is equally hard to predict when those firms that are pursuing truly green objectives and are converting to sustainable production and distribution practices will prevail on all the rest. Although this report hints at such developments in the future, reliable forecasts are impossible to make until the political and legislative framework will truly be able and willing to support green entrepreneurship in Italy.

Recommendations

A series of recommendations raise from the main conclusions of this report. They are broad orientations, to be followed by several categories of stakeholders, following their interests and capacities. From the ordinary people and the private citizen, consumer and voter, to the entrepreneur, to the policy manager, each one is called to take part to this vast and crucial political process.

1. In Italy is essential to invest on a diffuse Education program able to produce awareness on the holistic approach of the environmental and social sustainability; especially in the South, Italians are still not sufficiently sensitised on crucial and complex issues such as waste management or transport and mobility.
2. Systems able to facilitate horizontal exchanges among practitioners on green good practices operating into the different territories have to be established.
3. It is also necessary to promote a positive information system able to valorise the virtuous realities operating into the different Italian regions.
4. A special effort has to be dedicate to the environmental law enforcement and to the practical applicability and translation into practice of norms and regulations.
5. Incentives for good behaviours performed by consumers, producers or intermediaries have to be intensified, together with measures discouraging not sustainable habits.
6. Special measures have to be promoted with the aim of strengthening the linkages between tradition and innovation, in order to use consolidated experiences for facing the emerging social and environmental challenges.
7. The bottom up process of Green Entrepreneurship have to be specifically sustained by dedicated measures, in order to identify business models and progressively build a new practice oriented entrepreneurial system.
8. The Italian tradition and approach of the productive integrated local districts have to be recuperated and mainstreamed into the emerging green perspective, in order to recuperate a consolidated experience able to integrate resources from the public and private sector together with the needs and potential expressed by the local communities.

About the Authors

This study has been carried out by a team of consultants active members of The HUB Sicilia in collaboration with HUB Milan, Rovereto and Rome. Key persons of the team are **Alberto Masetti Zannini**, social entrepreneur, network developer, **Maria Olivella Rizza** PhD, Lecturer and Researcher on Economics at the Faculty of Political Sciences of the University of Catania, **Stena Paternò del Toscano**, experienced consultant on social innovation policies and business and **Rosario Sapienza**, a socio-anthropologist with extensive experience on social research.

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Appendix 1

CASE STUDIES

Name:	**1. Habitech**
City, country:	Rovereto, Italy
Name of entrepreneur / founder:	Habitech is a consortium of 171 partners representing over 300 enterprises in the region (8.000 employees, 1bn turnover), alongside 15 research organisations and public sector bodies. The consortium was an idea of Gianluca Salvatori, who in 2006 was the regional Minister of research and innovation. Sergio Bortolotti is President, Gianni Lazzari is CEO, Thomas Miorin is Managing Director.
Description:	Habitech is: a network of 300 companies focusing on exploiting sustainability to develop business, opportunities and community improvements; a national excellence hub for green building, energy and sustainable mobility; the technological District for energy and environment recognized by the Italian Ministry for University and Research; and a catalyst for green-business development. Habitech promoted the creation and incubated the Green Building Council Italy, a national association of leaders in sustainable building.
Investment:	In spite of the role of public sector in triggering Habitech creation, Habitech was created as a private consortium. During the first 5 years, the public sector funded the consortium with 360 k /year for its role in providing governance and market infrastructure to regional companies in the cleantech sector. Today the consortium is self-funded through services provided to the market with an annual turnover of 1.5 million euro and is still working as a regional point of reference.
Stakeholders: (main players involved)	The network is comprised of 300 enterprises working in sustainable construction, mobility, and energy, with clients in Italy, Europe, North Africa and the Middle East. Another major stakeholder is the national association GBC Italia, with almost 600 members.
Employment generation:	Habitech has 25 employees. The cluster generated employment in GBC Italia, with 15 employees and Manifattura Domani, with 5 employees. It is difficult to estimate overall job generation because Habitech intervenes on market infrastructure. They estimated 300 new and “replacement” jobs in the Autonomous Province of Trento alone. Across Italy around 150 professionals are accredited to work on LEED®, the rating system for sustainable building promoted by Habitech. In 2011, the estimated market value of the buildings under LEED® Certification in Italy was about 2 billion euros with un-estimated job impact.

Timeline: (brief history)	Habitech was born in 2006 in Trentino, the Alpine region renowned for its attention towards sustainable development. It was created as an Energy and Environment Cluster by a consortium of 170 entrepreneurs representing 300 enterprises that wanted to pool together resources and capabilities. Soon enough, Habitech was developing projects, offering services for innovation, technical and commercial support for its enterprises and institutions, as well as for a broader network of clients. Habitech immediately developed the expertise and experience to organize and work within enterprise networks, stimulating cooperation among different businesses and the development of innovative projects. The first benchmark for Habitech in the field of sustainable construction was promoting the birth of the Green Building Council Italy. The GBC Italy, born in early 2008 in Trentino, is the association that, like the USGBC, is transforming the building market at a national level through the introduction of the LEED® standard. More than 550 companies, government agencies, research centers and businesses throughout Italy joined the non-profit association, based on voluntary participation of members. To date, more than 70 LEED® projects have been registered for certification from Italy and Habitech has already started offering designers and companies with new services to support LEED® certification, maintaining 50% of this market.
Feasibility study:	A feasibility study commissioned by the Autonomous Province of Trento, was performed in 2005.
Key features:	Sustainable construction; sustainable mobility; renewable energy; R&D; industrial district; sustainable innovation; market transformation.
Overall rationale and motivation:	Habitech is one of those very Italian industrial districts that have become famous worldwide for their capacity to transcend the capitalist logic of competition and turn the market logic on its head. It is not only the point of reference for all its members when it comes to R&D, innovation and sustainable practices, but it has also become a beacon for many other industries in Italy and abroad. Cooperation, research, sustainability and innovation lie at the core of Habitech's value system, one which has proven to be able to generate resources and growth for its members and for the regional economy as a whole.
Strengths:	Habitech's strengths are: not-for-profit organization providing services oriented to changing the market; systemic approach; young and motivated staff; leadership acknowledged for being the first mover in green building in Italy. Local environment - one of the greenest in Italy - is used as an innovation lab.
Challenges and constraints:	Organisation self-sustained by the innovative services provided to the market. Services always have to be renewed and the identity of first mover is always under check.

Direct activities and impacts:	Essentially, Habitech operates in 3 areas: Green Building, Energy and Sustainable Mobility. Within these areas, it runs projects, offers services and supports innovation and technological development its firms and for outside clients. The Green building sector was Habitech's first target market. Through the creation of the Green Building Council Habitech supported LEED® in becoming a rating system that helps Italian companies to compete in a global context and have consolidated a system of expertise that enables them to offer global support services. Nowadays Habitech is providing services to the 50% of the Italian LEED® market. Moreover Habitech launched ARCA, a new standard of quality for wood houses in order to support the local timber cluster: it is a certification scheme for architecture, comfort and environment designed to demonstrate the quality of wood buildings. In the Energy field, Habitech divides its focus between energy efficiency and renewable sources. In the former, it is working to develop ESCos (Energy Service Companies), which provide a wide range of energy solutions that include design and implementation of energy savings projects, energy conservation, energy infrastructure, power generation and also energy supply. They work with ESCos supporting them in performing analysis of properties, designing energy efficient solutions, installing required elements, and maintaining the final system to ensure energy savings during the payback period. In the renewable sources sector, Habitech tried to reduce the dependency of society on fossil fuels, transforming the small Trentino region into a competitive position, leveraging new and innovative approaches to energy production and distribution. As a network, Habitech is involved within the energy market in a variety of sectors: photovoltaic, hydroelectric, biomass, hydrogen and DHC (district heating and cooling). Finally, in the Mobility sector, Habitech uses first class technology and worldwide best practices to approach the sustainable mobility issue in order to achieve system interventions to increase economic, social and environmental sustainability. Its main projects are: 1. The Green Valley project, which operates to transform Primiero valley in the Dolomites into an Oil Free Zone where mobility will also be based on renewable energy sources produced locally: bio-methane, hydrogen and hydroelectric. 2. MOTUS (Mobility and Tourism in Urban Scenarios) is an "Industria 2015" project that aims to build a platform of info-mobility services supporting sustainable and ecomobility. Info-mobility delivers an innovative and alternative system of transportation, able to offer an integrated service for both tourists and citizens.
Use of innovative technologies:	Not technology but methodologies: • Local development approach • Market transformation approach through standard and systemic actions • The Natural Step framework • Defining sustainability in operational and measurable terms

Evidence of a holistic approach/ world view:	Even if in the external communication Habitech is speaking of green and sustainability, internally the organization is working on the perspective to create the first European network of regenerative companies, able not only to sustain and maintain the status quo but also to improve it.
Scale of benefits:	Personal, enterprise, local, regional and national.
Policies, incentives and regulations needed:	From a national perspective Habitech is working on market transformation towards a sustainability model that is economically convenient, sustainable for the market itself and a guide for innovation and that therefore has no need of policies, incentives or regulations. In order to accelerate transformation at the regional level, the Autonomous Province of Trento supported the green sector in the following ways: • green public procurement: all the new building of the Province will be LEED® certified (more than 300 million euro) • funds for research and innovation in green tech: about 50 million euros (25m followed directly by Habitech) In 2009 to support the aims of Habitech the autonomous Province of Trento created Progetto Manifattura: a hub for clean technology created in a historic factory closed in 2008. The project has several objectives: a. Stimulate growth by providing infrastructure and services to startups and existing SMEs in green building and clean technologies. b. Create a stimulating working environment where small companies and professionals find partners and clients and work together to develop new products and services The project will provide over 40,000 square meters of office space and light production modules. 3,000 square meters are available now and 2,000 more will be available in 2012.
Lessons and recommendations:	• Avoid the “opportunistic pact” that transform consortiums and aggregations of enterprises in coalitions sharing out possibilities to companies. • Take the challenge to start a constituting process aimed to create a new productive territory. • Use a framework to define sustainability at a strategic level and at the operational level.
References:	www.habitech.it

Name:	**2. La Fabbrica del Sole** (FDS)
City, country:	Arezzo, Italy
Name of entrepreneur / founder:	FDS is a cooperative that was founded in 1999 by 10 members. CEO is Paolo Fulini. It created two further for-profit spin offs - Exergy and La FDS Srl - and has a participation in the Ransolar, an innovative renewable energy company operating internationally, especially in Egypt.
Description:	FDS's operates in the field of renewable energies and environmental preservation, and particularly in the production of photovoltaic panels and of hydrogen-generating and processing facilities. It has a strong R&D department (Hydrolab), which works closely with a scientific committee made up of experts and researchers from the Universities of Siena and Florence. It is famous worldwide for having created the first hydrogen-pipeline in an urban centre and for having started the process of registering in 2010 the Off-Grid patent, with the development of a comprehensive system to disconnect houses from the main grids and provide them with an affordable tool to meet their energy, water and sanitation needs in loco.
Investment:	Information not available.
Stakeholders: (main players involved)	The Municipality of Arezzo; the Tuscan Regional Administration; the University of Florence; the University of Siena; other renewable energy companies in Italy and abroad; the citizens of Arezzo; the citizens of Tuscany; customers in Italy and abroad; the research community interested in experimental implementation of hydrogen systems; the environment.
Employment generation:	5 cooperative members, with a further 15 employees in the cooperative and other companies part of the FDS network (Exergy and La FDS Srl)

Timeline: (brief history)	FDS was founded as a cooperative in 1999 by an interdisciplinary group of young researchers brought together by the Municipality of Arezzo to create the first natural composting bio-chamber (biocella) in Italy, capable of turning organic waste into natural compost. After successfully completing this first project, the FDS team turned its attention to the energy sector, entering the photovoltaic market in 2006 and installing as of today 2.5 MW worth of panels. Alongside this focus, it started conducting research into energy self-sufficiency and in particular into hydrogen sources, creating Hydrolab always in 2006. Thanks to this focus, on 30 April 2008 FDS inaugurated the world's first hydrogen-powered pipeline delivering energy to an urban centre. Working with a traditional industrial cluster in Arezzo - the goldsmith sector - FDS developed an innovative system called Solar-cooling, based on a process that produces cold air (air conditioning) from a warm renewable source (thermal solar energy). Its panels were used in the construction of the largest solar-cooling system in Europe: the City Hall and Library of Como, in Lombardy. Its energy self-sufficiency research paid off in 2010 with the initiation of the registration of the Off-Grid patent, to construct structures that are not connected to the main energy, water and sanitation grids. The buildings are fitted with an integrated renewable system that meets all its energy needs, both electric and thermal, and has a closed water cycle, that uses in loco purification to treat black-water. Off-Grid was selected for the 'Better City, Better Life Expo 2010', and for the Italian Pavilion ('AILATI: Riflessi dal futuro') at the 12th International Architecture Exhibition in Venice. In 2011, the Off-Grid system became the Off-Grid Box and FDS was one of the projects exposed at Exhibition *Stazione Futuro* within the Officine Grandi Riparazioni in Turin.
Feasibility study:	The Off-Grid theme is the central one that FDS is developing, due to the scarcity of resources and the environmental challenge that surrounds. The cooperative has been approached by a number of large multinational companies interested on this theme. Part of the reason is the inability of the national grid to adapt to a diffused energy-generation model. Another part of the reason is the increased desire by people to become independent from the energy markets. FDS is interested not just in energy production and consumption, but also (and with the Off-Grid Box increasingly) in energy storage.
Key features:	Renewable energy production, storage and consumption; photovoltaic panels' production; hydrogen systems' research and production; Off-Grid systems' research and production; solar-cooling systems' production.

Overall rationale and motivation:	FDS is one of those quintessentially-Italian small and medium green enterprises that, rooted in a very localised value system, continue to flourish nationally and internationally thanks to a genuine passion for what they do, to a strong sense of ethical commitment and to a deeply innovative and creative approach to entrepreneurship. FDS is not just a successful green enterprise: it represents the best that Italy has to offer in terms of entrepreneurship. It is methodologically research-based, working closely with university experts and researchers, yet it is visionary and adventurous in its innovation strategies. It works closely with government structures in a combined effort to provide value and opportunities first of all to local needs and communities (like in the case of the goldsmiths of Arezzo serviced now by a hydrogen pipeline), yet it is far from parochial and is already looking at how to carve out a greater role for its products on the global markets. In essence: it is one of those virtuous examples of (green) entrepreneurship on which Italy should bet if it wants to respond to the challenges it faces today.
Strengths:	As stated above: a strong link with the local context; a research-based approach that doesn't remain too theoretical, but gets turned into market-oriented activities; a young team, willing to take risks and able to react creatively and promptly to outside opportunities; a networked-approach close to the 2.0 generation; an integrated planning strategy, where solutions are identified creating cross-sectoral synergies; a supportive public policy that encouraged the renewable energy sector, particularly the photovoltaic sector.
Challenges and constraints:	The main challenge is finding new solutions that are sustainable - i.e. no longer based on public support, but exclusively on market dynamics, especially in the renewable energy sector.
Direct activities and impacts:	The main focus of activities is planning, installing and constructing systems to produce and store renewable energies. The main impact of their work is the development of partnerships across sectors, including with large companies that are looking to join forces with FDS to innovate and differentiate their works. The Off-Grid Box has a particular impact on the 'narrative' of partners and on the way they understand their role in re-shaping the response to the energy challenges that surround us.
Use of innovative technologies:	Research and innovation are at the heart of FDS. Without them, the cooperative would probably not exist. In just over 10 years of activity, in can pride itself - despite its small size - with developing the following innovative technologies: 1. The first natural composting bio-chamber (biocella) in Italy; 2. The first landscape-integrated photovoltaic park; 3. The largest solar-cooling system in Europe; 4. The first hydrogen-powered urban energy pipeline in the world; 5. The Off-Grid patent. All these achievements were obtained by working closely top researchers and scientists in the energy field, which make up the scientific committee of FDS.

Evidence of a holistic approach/ world view:	FDS is working in integrated fields that have to do with their core-business (energy), ranging from mobility to food to waste management. The organisation is very flat and collaborative, based on knowledge sharing and technical expertise. It recognises that there are a lot of good ideas around, but at the end of the day these ideas have to be bought by people (and the market) to be sustainable. Public sector incentives can offer a real support to new ventures, but they are not always enough. What is needed is greater public awareness of the challenges we face as a planet and as an economic system. The vision of FDS is one in which all people have a deep understanding of how their economic choices are linked to environmental impacts, and how certain companies should be rewarded not because they are better at marketing themselves, but because they are virtuous in their actions and offerings.
Scale of benefits:	Information not available.
Policies, incentives and regulations needed:	Information not available.
Lessons and recommendations:	FDS' approach is "If not now, when?". This is the main lesson they like to teach to their partners and customers.
References:	http://www.lafabbricadelsole.it/home.html http://www.offgridbox.it/ITA/HOME.html

Name:	**3. Valcucine**
City, country:	Pordenone, Italy
Name of entrepreneur / founder:	Giovanni Dino Cappellotto, Gabriele Centazzo (CEO), Franco Corbetta, Silvio Verardo
Description:	Valcucine was founded in 1980 to produce high-end sustainable kitchens, and from the 1990s becomes world leader in this sector, with increased annual sales and growing recognition by a number of international organisations. At the heart of its approach is a constant research to innovate towards sustainability - for example by constantly reducing the amount of materials to use in its kitchens - and a detailed attention to the aesthetics of 'engineered design'. Alongside its market leadership, Valcucine deserves to be mentioned here for its engagement towards environmental causes, including its support towards public campaigns aimed at educating people towards more sustainable behaviours.
Investment:	No information provided.
Stakeholders: (main players involved)	All the actors involved in the manufacturing process supply chain, from woodland management and conservation actors to third party suppliers of specific components; end users of Valcucine kitchens; the manufacturing sector as a whole, as it becomes exposed and influenced by Valcucine's leadership role and its sustainability approach.
Employment generation:	175 employees as of October 2011

Timeline: (brief history)	1980 / birth 1981 / GHIANDA: creation of the first kitchen set with 'soft line' kitchen cupboard doors 1983 / 5STAGIONI: creation of the first 'just in time' kitchen cupboard door 1984 / QUADRIFOGLIO 1988 / ARTEMATICA: creation of the first kitchen cupboard door with invisible aluminium core 1991 / SEMANTICA: new kitchen assembly line 1993 / FABULA: creation of the first kitchen with painted wood and carved cupboard doors 1996 / RICICLA: creation of the first 2mm thick cupboard door 1996 / selection ADI index 1996 / LOGICA SYSTEM: revolution in the ergonomy of the kitchen 1997 / creates the MAZZOTTI prize in support of environmental culture 1998 / creates BIOFOREST, the first environmental association for entrepreneurs 2001 / first Italian kitchen manufacturing company to get ISO 14001 certification 2002 / AERIUS, creation of the first cabinet in glass and aluminium 2006 / LACUCINAALESSI: Valcucine and Alessi, two top Italian design brands, join forces 2006 / CONFINDUSTRIA award for excellence 2007 / RICICLANTICA: creation of the first cupboard door 100% made of alluminium 2007 / selection ADI index 2008 / the ARTEMATICA VITRUM kitchen shown at the MOMA in NY 2009 / INVITRUM: first 100% recyclable and reusable kitchen base system 2010 / VALCUCINE LIVING, everything changes
Feasibility study:	No information provided.
Key features:	Sustainable manufacturing; sustainable design; recycling and reuse; CO2 emissions abatement; cultural sustainability.

Overall rationale and motivation:	The company embarked on a green entrepreneurship route thanks to the vision and passion of one of its founders, Gabriele Centazzo, who is a chemist by training and brings a strict scientific approach to the way the company approaches its environmental mission. The way the company expresses it environmental credentials is by investing a lot of resources into researching and developing 1) ways to reduce material requirements for the kitchens they produce; 2) ways to ensure as much as possible of their kitchens are recyclable and reusable; 3) ways to reduce CO2 emissions and other toxic emissions and 4) ways to ensure the longest duration possible for its products. In today's consumerist society, one of the main problems that manufactures have is their inability to last a long time, partially because manufacturers have an interest in ensuring their products get bought over and over (for example in the ICT industry) or because their design and aesthetics go out of fashion. Valcucine is investing a lot of time and energy into trying to decipher the underlying principle of long-term design from an aesthetic perspective. If consumers buy something that is considered beautiful over time, this in itself has a positive environmental impact. This is an area in which Valcucine is spearheading a number of Italian design companies, trying to find a way to see this aesthetic feature recognised in international sustainability certifications.
Strengths:	Valcucine's strength lies in its pioneering vision and in the firm's deep-rooted culture. The 4 drivers of its sustainability approach ('de-materialisation'; recycling/reuse; lowering CO2 emissions and aesthetic durability) pushes the company to innovate continuously and creatively. Thus, Valcucine is perceived by all stake-holders as a leader in the sector.
Challenges and constraints:	The company's identified challenge is living up to its reputation and self-imposed 4 drivers (see above), especially the one of turning into a no-impact firm, in which every item produced is recycled and reused. Gabriele Centazzo's idea is of a 'tree-firm': a firm that - like a tree - only uses renewable resources (like the sun) and only produces waste which is beneficial to its own future and to that of the planet (like oxygen and humus).

Direct activities and impacts:	Social and environmental: Alongside its environmental policy, Valcucine founded in 1998 Bioforest (www.bioforest.it), a non-profit association created with other socially and environmentally responsible businesses to promote a new way of doing business, rooted in a new-found balance between industry and the environment. The main objectives of the association are to help its members find new ways to reduce energy consumption, eliminate toxic elements from the production process and promote environmentally-conscious R&D paths. The organisation aims to do this in particularly with an eye towards the natural resources of emerging economies, financing projects like the re-forestation and biodiversity conservation initiative "Operation Otonga" in the Amazon Forest of Ecuador. Alongside international bio-conservation and research initiatives, Bioforest works on a reforestation project in Cordenons, in the north-eastern province of Pordenone, where a particularly important plant biotype has been singled-out. Finally, from a purely social perspective, Valcucine supports the "Occhione" environmental education project in several secondary schools, always in the Province of Pordenone.
Use of innovative technologies:	In terms of specific innovations developed by Valcucine to reduce their environmental impact and footprint, one of the main ones is their 'just in time' kitchen cupboard door system, made in aluminium with a flat panel just 2mm or 5mm thick. This means an 86% reduction in the amount of material used to build a traditional kitchen cupboard. Also, several kitchen components in glass and aluminium developed by Valcucine are 100% recyclable and reusable, a system which was introduced within the company's broader interest in designing 100% recyclable, reusable and de-constructible kitchens (see www.recyclablekitchen.com).
Evidence of a holistic approach/ world view:	Valcucine's holistic approach can be easily seen in both its environmental policy and in its leadership role within the Italian manufacturing sector in trying to promote a more sustainable approach to industrial production and consumption. Its 4 axes of environmental policy sum up its holistic approach, and its work through the Bioforest association give a glimpse into its world view, especially with regards to maintaining a balanced relationship with countries where a lot of natural resources come from. When it comes to its role in promoting a more sustainable production and consumption culture, its focus is mainly on the Italian market, but it also reaches wider audiences, having international representations in 47 countries across the world, including the US and Russia.
Scale of benefits:	As stated, there are numerous beneficiaries to Valcucine's approach: first of all the environmental elements that link up to their production chain, which benefit from a sustainable approach - for example - to resource management; secondly, other industry firms that benefit from being exposed to Valcucine's successful approach and message; thirdly, consumers worldwide who, by buying into their successful design and message become themselves promoters of a more sustainable lifestyle; and finally the beneficiaries of Valcucine's work through the Bioforest Association, both locally and globally.

Policies, incentives and regulations needed:	No information provided.
Lessons and recommendations:	Valcucine's main lesson is that being sustainable means trying to improve a company's actions day after day, looking at how to reduce impact, at both organisational and personal level. For Valcucine, every day brings a lesson in self-improvement, a lesson that is shared as widely as possible amongst all its stakehoders. And the main lesson/ recommendation: perseverance pays off in the end!
References:	http://valcucine.com/en/ twitter.com/valcucine www.flickr.com/people/valcucine/

Name:	**4. Aquafil Spa**
City, country:	Arco, (TN), Italy
Name of entrepreneur / founder:	Giulio Bonazzi, President and CEO
Description:	The Aquafil Group operates in the chemical-textile sector, producing Polyamide 6 polymers used to produce yarn for carpet flooring (BCF), yarn for the textile sector (NTF) and engineering plastics (EP). The Group has always pursued a strong sustainable path and in 2007 it started implemeting a strategy to reduce its environmental impact. In 2008 a fourth Business Unit, named Energy & Recycling, was set up. Its mission is: 3. To develop recycled products; 4. To promote the diffusion of renewable or low-impact energy; 5. To promote a culture of sustainability inside and outside the Group. Thanks to a very deep assessment phase, the Group identified some useful process innovations in some areas, such as water, air emissions, waste and recycling, energy and fuel consumption. On these issues, the action of Aquafil was very effective leading to a remarkable impact reduction. Fully in line to its mission, the Econyl Recycling System was implemented: a recycled raw material coming from industrial and consumer waste. To produce it, Aquafil made an important investment in Ljubljana, boosting its R&D activities, building a completely-dedicated plant and defining a worldwide supply chain, named Econyl Reclaiming Program. The ERP allows to collect and recover Polyamide 6 waste - such as fishing nets, parts of carpets, textiles and other types of industrial waste. These materials are then stored in a warehouse near Ljubljana, where they are handled and prepared for recycling. Regarding cultural aspects, the Group has been publishing every year since 2007 a sustainability report describing the most relevant news, innovations and results regarding the Group's sustainability worldwide.
Investment:	From 2007 till 2010, the expenditure and the investment for the process innovation amounted about to 13,8 Mio. At the same time, the construction of the Econyl Recycling System cost up today 17 Mio Euro.
Stakeholders: (main players involved)	customers, suppliers, employees, local communities. Aquafil also cooperates with various universities both in Italy and abroad.

Employment generation:	the integrated innovation process generates different skill-intensive jobs: • About ten people are employed for the analysis and the elaboration of the data on the sustainable development. Further, there are several specialized employees that are working in each productive site to implement the concrete process innovation, focusing their attention on the reduction of their environmental footprint (energy saving, reduction of the water consumption and raising the amount of recycled waste). • Ten employees are working in the R&D department, particularly to test the operations and the results of a pilot plant improving recycling mechanisms. • More than forty employees are working in the different phases of the Econyl Recycling System: collection, transportation, pre-handling and preparation of polyamide 6 waste, as well as the management of the chemical-mechanical process that transform them in new raw material.
Timeline: (brief history)	N/A
Feasibility study:	the Aquafil Group identifies some areas where it would be possible to further reduce its environmental footprint and improve the Econyl Recycling System. As matter of fact, Aquafil is considering to double the size of the Econyl plant in Ljubljana, which will allow it to increase its capability to handle Polyamide 6 waste, and to raise the quantities of Econyl produced. In addition, the research team is working on a pilot plant that could allow important improvements in the productive process. Aside from the above-mentioned process improvements, Aquafil is planning the construction of solar and geo-thermal powered plants, which would increase the firm's ratio of energy coming from renewable sources.
Key features:	
Geo-social-economic setting:	the borders of Aquafil's action follow the geographical localization of its production plants, which are located in three continents - Europe, Asia and North America - and in seven countries – Italy, Germany, Slovenia, Croatia, the US, China and Thailand. These countries are characterized by different socio-economic conditions, as well as different labour and health legislation. The Aquafil Group is paying a lot of attention towards harmonising life conditions in the different communities in which it operates, guaranteeing everywhere the same juridical, working and health protections. To reach this important result, the Aquafil Group identified in every plant the most important actions to implement, in order to reduce both the environmental and the socio-economic problems that could rise in the local communities.

Overall rationale and motivation:	the borders of Aquafil's action follow the geographical localization of its production plants, which are located in three continents - Europe, Asia and North America - and in seven countries – Italy, Germany, Slovenia, Croatia, the US, China and Thailand. These countries are characterized by different socio-economic conditions, as well as different labour and health legislation. The Aquafil Group is paying a lot of attention towards harmonising life conditions in the different communities in which it operates, guaranteeing everywhere the same juridical, working and health protections. To reach this important result, the Aquafil Group identified in every plant the most important actions to implement, in order to reduce both the environmental and the socio-economic problems that could rise in the local communities.
Strengths:	the growing innovation capability is an important characteristic for a firm that operates everyday on the international markets. It opens incredible opportunities for future transformations, preparing the firm, the employees and all stakeholders to the next challenges that will emerge in the economic world. This innovation drive is one of the most important characteristics of the Aquafil Group, a real and concrete cornerstone that characterizes the past, the present and the future of the firm.
Challenges and constraints:	the Aquafil Group will have to cope in the near future with some stimulating challenges, particularly related to concrete improvements of the Econyl Recycling System process, to the rationalization of its waste supply chain and to the diffusion, inside and outside the firm, of a deeper cultural awareness of what it is trying to achieve. These three subjects are strongly linked to each other, because they create the best environment in which to promote innovation processes and to transform activities.
Direct activities and impacts:	the Aquafil Group has developed some specific policies and activities that help it achieve its sustainability targets. With regards to the economic argument, the Aquafil Group is conscious that sustainability for a firm is not a cost, but a way to reduce costs. With this in mind, the Aquafil Group is implementing several project: it is introducing renewable energy in all its Italian plants, it is installing solar panels in Italy and geo-thermal plants in the US, and it is improving its waste-management, packaging and water-consumption. From a social point of view the Aquafil Group is working carefully to guarantee the same rights, health & safety environment in all of its plants worldwide. At the same time, it is working to promote the reduction of injuries, accidents and sickness, but also to boost internal knowledge and respect for the cultures where its plants are located.
Use of innovative technologies:	the Aquafil Group created a new technology to recycle and to up-cycle Polyamide 6 polymers derived from various types of waste. After some years of research and experimental tests, Aquafil's technicians, together with scientists from around the world, were able to build a new plant in Ljubljana, allowing Aquafil to achieve the incredible results described so far.

Evidence of a holistic approach/ world view:	The Aquafil Group strongly believes in the opportunity offered by the development of new business models that increase the well-being of firms and all stakeholders. Aquafil acts to maximize the firm's financial, social and environmental returns. Financial success is no longer the only measurement of the firm's performance, as it is now on a par with social and environmental impact: it is a guiding principle of Aquafil that a good firm will demonstrate strong performance in all three of these fields. This conceptual theory stems from the conviction that there are strong links and connections between a firm's action and the well-being of the citizens, local communities and environment where it is based. Every industrial activity is based in a defined socio-geographical space, and has to learn how to live in positive harmony with it.
Scale of benefits:	From 2007 to 2010, the Aquafil Group collected a lot of data about its environmental footprint. Between these years, externally-purchased energy decreased by 3,7% and natural gas by 10,5%, while CO2 emissions were cut by 31,2%. The same positive trend was showed by a reduction in water consumption and in the share of non-recycled waste, both of which dropped considerably in these four years. At the same time, waste recovery through the Econyl Reclaiming Program meant that tons of Polyamide 6 materials did not end up in landfills, in the environment or in the incinerators. In addition, the use of recycled raw materials, instead of virgin one, also allowed to save 7 barrels of oil for each ton of polymers produced.
Policies, incentives and regulations needed:	the Aquafil Group, in order to support its sustainability drive, could benefit from incentives directed towards its R&D activity, towards the use of low-impacting or renewable energy, and towards developing energy-saving technologies.
Lessons and recommendations:	to promote real and concrete change in today's business models, based on technological innovation and sustainability principles, it is necessary that all elements of a firm be convinced about this transformation. From the head - the corporate management that defines the overall strategy - to the arms - the factory workers - everyone has to be committed to the objective of increasing the sustainability of the firm. It is fundamental in order to achieve these results to promote cultural change amongst all workers and employees, so as to make it easier to implement the necessary change in all production processes and behaviors.
References:	http://www.aquafil.com/

Name:	**5. Vigilius Mountain Resort**
City, country:	Lana/Alto Adige
Name of entrepreneur / founder:	Ulrich Ladurner
Description:	The Vigilius Mountain Resort is a wooden hotel that reflects from its very beginning a strong ecological spirit. It is felt in every part, from the respect for the environment and nature in which the resort is inserted, to the type of building, as close to nature as possible, making the best use of resources present in the area.
Investment:	N/A
Stakeholders: (main players involved)	Entrepreneur Ulrich Ladurner, Architect Matteo Thun, Surveyor Peter Nösslinger
Employment generation:	The company currently has 50 employees
Timeline: (brief history)	“Eco” and not “ego”: this is the philosophy that inspired the architect Matteo Thun. The special, unique place in which the Vigilius Mountain Resort was inserted could not be in any way damaged by an architecture disrespectful to the surrounding environment. At the Vigilius Mountain Resort the boundary between nature and architecture is barely perceptible. The landscape is the true starting point, it does not act as a mere background or frame. The building made of wood and glass looks like a tree trunk lying on the back of the mountain. The choice of materials from renewable sources reflects the Resort’s philosophy and ethics.
Feasibility study:	The optimization and control of combustion, combined with the filtration of exhaust gases, allow to minimise the production of harmful emissions. Between 1,200 and 1,400 cubic meters of wood chips are burned annually, which amount, depending on the quality of the chips, to a quantity of fuel equal to 120,000 / 140,000 litres: translated into currency, this means saving around 65,000 euros every year.
Key features:	One thing was made clear from the outset: the Resort would not use fuels such as oil or gas to produce heat, but biomass. Wood chips are supplied directly from farmers who, while gaining access to a further source of income, also take care of the forest.
Overall rationale and motivation:	N/A

Strengths:	To create a greater sense of well being inside the building, radiant heating technology was chosen. With this type of system the heat is spread in the rooms through the walls, while in the bathrooms the heat radiates from the floor. A controlled ventilation system in all spaces ensures excellent air quality. The building's central system lets you adjust and control all functions through a BUS cable system. In this way alarms, faults or incorrect values can be detected and corrected at any time through a graphical system managed by a central computer. A project aiming at low energy consumption, characterized by its location, construction and materials, should be widely adopted in the field of hotel and housing construction. It should also be considered a prime example of twenty-first century avant-garde architecture, where the energy demand and consumption aspects of a building during the planning and design stages are not improvised, but rather taken very seriously.
Challenges and constraints:	There are no roads that can reach the hotel, thus no noise or exhaust gas: the guest is met by the embrace of silence and nature.
Direct activities and impacts:	From the cable car, it is difficult to tell the building apart from the nature that surrounds it. The wood and glass facade of the hotel blends harmoniously into the landscape made up of woods, mountains and small valleys. The visible part of Vigilius is in larch wood. The clay plaster, which was adopted for indoor and outdoor use, as well as the unfinished clay walls, give the building a very personal artistic aspect and create a unique atmosphere in which natural elements come to the fore.
Use of innovative technologies:	Due to the high thermal quality, both within and outside the building, heat-loss is very low and heat demand is highly reduced, despite the fact that the hotel is in an exposed area, with large windows and needing higher temperatures in the pool and spa areas. In summer there is no risk of overheating because the building was designed to ensure adequate sun protection, thanks to its wooden strips frame and to various heat storage and ventilation units. The completely airtight construction prevents the formation of any drafts.
Evidence of a holistic approach/ world view:	N/A
Scale of benefits:	N/A
Policies, incentives and regulations needed:	N/A

Lessons and recommendations:	The Vigilius Mountain Resort has received several awards as a prime example of sustainable tourism particularly sensitive to environmental issues. In 2005 the jury of the WWF Italy "Golden Panda" prize gave the Vigilius Mountain Resort, a 5-stars design hotel, the special recognition "Friend of the climate". In the same year, the hotel was granted the first - and so far the only - "Class A - House climate" certification, due to its high energy standards that allow consumption of less than 30 kWh (kilowatt-hours) per square meter per year and to the adoption of highly innovative technological systems. In 2006 Vigilius received from the main Italian environmental association "Legambiente" the prestigious "Award for environmentally-friendly innovation" . In 2009, "Eco Hotels of the World" awarded Vigilius the maximum score: 5 green stars. In the summer of 2010 The Vigilius Mountain Resort obtained the environmental certification ISO 14001. The certificate attests that the resort embraces the highest standards in terms of environmental protection and has played a pioneering role in the hospitality industry. Always in 2010, the Vigilius Mountain Resort received the certificate "KlimaHotel", a brand born in 2009 and developing precise quality criteria in terms not only of mere energy consumption, but of every aspect of the hotel's business. This is a guarantee of the hotel's determination in becoming a beacon in terms of environmental management. Since its opening, the Vigilius Mountain Resort has considered this not just a simple promise, but a real commitment.
References:	Cristina Boggio - Marketing Director http://www.vigilius.it/

Name:	**6. Moncada Energy GROUP S.R.L.**
City, country:	Agrigento, Italy
Name of entrepreneur / founder:	Salvatore Moncada. Amministratore Delegato
Description:	Moncada Energy Group is one of the main private Italian producers of renewable energy. The Group, while specialising primarily in wind energy, is also moving towards solar, biomass and merchant transmission lines, with a portfolio of projects worth 340 MW. Moncada Energy Groups has developed sufficient internal knowledge to become a leader in the Italian renewable market. Years of research and development into wind-turbine technology enabled the company to develop the prototype for an aerogenerator (WPR 850/58), based on an innovative 'direct drive' technology. In the solar energy field, the company launched the first factory in Italy producing thin film solar cells using amorphous silicon. It has a presence in Italy and abroad, with over 320 employees, and plans to grow and become one of the key players of the renewable energy sector on the international stage.
Investment:	N/A
Stakeholders: (main players involved)	N/A
Employment generation:	320 employee

Timeline: (brief history)	Significant stages: **1991** The Group is born in Agrigento thanks to the dedication and willpower of the Moncada brothers. The Group's core business is in the construction sector. **1991/2000** The company's activities in the construction sector go from housing to industrial estates, from hydraulic systems to urban illumination and public road works. All completed work was done in accordance with the standards set by the management quality control system (the latest being UNI ENI SO9001). **2001** Following the liberalisation of the Italian Electricity Market (Bersani decree), the company enters the renewable energy market, and starts building its first wind farm. **2005** The first Moncada-built wind farm is inaugurated on Monte Mele near Agrigento. It has an installed energy power of 9,25 MW, and features a 750 Kw wind turbine generator prototype, which was manufactured and planned by the Sistemi Elettronici company within Group. **2007** Four more wind farms, situated in Agrigento, Monte Malvizzo, Monte Durrà, Monte Narbone and Altopiano Petrasi come into production with combioned energy power of 96,05 MW. **2008** The Holding Moncada Energy Group is created. The Moncada group purchases a production line of solar panels in thin film and starts work on a production site. The Swiss Atel purchases 30% of all Italian projects managed by M&A Rinnovabili. **2009** The first Sunfab in Italy is opened. Work begins on the building of 2 more wind farms in Sicily. One in Cattolica with a power equal to 40 MW and another one called Aerorossa with a power of 84 MW. **2010** The solar plant called Serre Narbone enters into production with a power equal to 7 MW. An integrated solar plant in Campofranco enters into production with a power equal to 1 MW. An integrated solar plant on a factory in Porto Empedocle enters into production with a power equal to 730 Kw. An integrated solar plant on the Sport centre of Porto Empedocle enters into production with a power equal to 200 Kw. **2011** Moncada purchases in Dresden (Germany) the Signet Solar equipment. The total output production is over 100 MW. The wind farm in Cammarata (AG), Castronovo di Sicilia (PA), Vallelunga Pratameo (CL) come into production with an installed energy power of 84 MW. The wind farm in Cattolica comes into production with an installed energy power of 40 MW.
Feasibility study:	N/A
Key features:	Taking an active interest in renewable energy means being environmentally friendly. Energy allows economical and social progress.
Overall rationale and motivation:	N/A
Strengths:	N/A

Challenges and constraints:	N/A
Direct activities and impacts:	N/A
Use of innovative technologies:	With regards to **solar energy**, Moncada is currently working on a prototype which will: 6. Pre-assemble the conversion module to be installed at the target site; 7. Lower production costs, thus lowering cost per kWh; 8. Reduce CO2 emissions. In 2009, the Group completed the procurement phase to enter into **wind turbines'** production. Moncada develops small and large wind systems from 200kW to 2 MW. Some of the components (motors, washers, bearings, etc.) were acquired from other manufacturers who designed the parts according to Moncada specifications, and others, (main frames, rotors, extenders, etc.) were personally designed by Moncada and produced by other manufacturers. The most important changes were made to the structure of the stator, since some difficulties were encountered during the processing of chip removal. A collaboration with Mita Teknik, during the commissioning phase of WPR750, led to some improvements to the control system that was subsequently incorporated into the PLC WPR850. Since 2009, Moncada Energy has begun research and development in **biomass** aimed at designing an algae cultivation system to produce electricity. These organisms, cultivated in the laboratories of Moncada, are marine microalgae - single-celled plants or organisms that grow in sea water with just the addition of dissolved nutrients, sunlight and CO2. This type of cultivation happens in coastal areas that are not usually suitable for agriculture: thus the algae aren't in competition with the crops for soil and water resources destined to food production.
Evidence of a holistic approach/ world view:	N/A
Scale of benefits:	N/A
Policies, incentives and regulations needed:	N/A
Lessons and recommendations:	N/A
References:	Dott.ssa MONTANA info@moncadaenergy.com | Tel. +39 0922 441952/53 | Fax +39 0922 441946

Name:	**7. Libera Terra Mediterraneo**
City, country:	Palermo, Italy
Name of entrepreneur / founder:	Giovanni Luca Faraone – CEO
Description:	The consortium Libera Terra Mediterraneo is a business entity that guides and coordinates the activities of various Libera Terra cooperatives and of other stakeholders. It was established between companies that gravitate around the Libera Terra project with the idea of contributing towards its development and growth. It builds in particular on the joint production activities of the cooperatives 'Placido Rizzotto', 'Pio La Torre', 'Terre di Puglia', 'Lavoro e non solo', 'Joe Montana', 'Le Terre di Don Peppe Diana' and 'Liberamente', which are part of 'Libera Associazioni Nomi e Numeri contro le mafie'. Several partners are part of the consortium, including Egocentro, a leading tour operator in the responsible tourism sector, which is well-known for its professionalism. The consortium's contribution is decisive because of its technical and organizational competence, and because of its key role in logistics support. Among its main activities: the marketing of products branded 'Libera Terra', 'Centopassi' and 'Libera Terra Puglia', the communication activities of cooperatives, the organisation of sightseeing tours to the cultural sites that surround the cooperatives. The consortium's aim is to give support to those cooperatives that work on lands and properties confiscated from the mafia and to become a benchmark and driving force for the diffusion of a new model of transparent and fair economy.
Investment:	'Libera il g(i)usto di viaggiare' is the new responsible tourism activity launched by Libera. It is a branch of the Libera Terra Mediterraneo Consortium. It stems from a desire to promote the Libera Terra project and the lands where it is based, giving visibility to structures, locations and realities connected to the world of the cooperatives. It aims to uncover a new profile for many territories, usually only known for being the setting of criminal activities, opening up new channels for responsible and sustainable tourism and for socio-economic activities.
Stakeholders: (main players involved)	The main stakeholders of this project are the Libera Terra Mediterraneo consortium and Egocentro srl. Alongside them are 'Libera Associazioni Nomi e Numeri contro le mafie', other associazioni and cooperatives that operate in the region and various suppliers.
Employment generation:	The responsible tourism activities of the consortium Libera Terra occupy a few people responsible for overall administration and coordination of activities with the receiving cooperatives.

Timeline: (brief history)	A few first example of responsbile tourism were developed by the cooperative 'Placido Rizzotto' from 2002 onwards. These were the first steps of an activity that grew overtime. It all started form simple welcoming of people who came to visit the cooperatives in Sicily to learn about their work and daily struggle against the mafia, but it soon turned into something more organised, which now comprises professional catering for daily tours, planning and supervision of regular volunteer camps, and general tour organisation, from the start to the end of a trip. 'Libera il g(i)usto di viaggiare' was eventually born in November 2009 to develop this on-the-ground network of cooperatives that were engaged in responsible tourism and were promoting their local areas through tourism channels.
Feasibility study:	The growing number of requests from people willing to visit properties and cooperatives which had been confiscated from the mafia promted the creation of this new branch of economic activities.
Key features:	'Libera il g(i)usto di viaggiare' aims to accommodate students, young professionals, friends of all ages and give them the opportunity to take centre stage in their trip. It gives people the possibility to have an amazing experience, thanks to the value of the places they visit, the services they receive, the people they meet, the activities they embark on and topics they deal with. The aim of 'Libera il g(i)usto di viaggiare' is to satisfy and enrich customers, selecting routes and services and customizing the proposals on the basis of individual needs, always with a constant attention towards the quality, reliability and professionalism of the structures involved.
Overall rationale and motivation:	N/A
Strengths:	'Libera il g(i)usto di viaggiare' offers a kind of tourism based on the principles of social and economic justice, that fully respects environment and cultures, and that contributes to the development of different realities within the various Italian regions. And for best results, it selects partners and service providers that operate under the principles of justice, respecting both labor and the environment. The offering is aimed at curious travelers, knowledge lovers and all those who want to turn their trip into an unforgettable experience, a real opportunity for experimentation, discussion, reflection and - of course - relaxation.

Challenges and constraints:	CONSTRAINS - Due to the highly-social objective of the project, prices tend to be higher than the market's counterparts - Seasonal limitations - Difficulty in identifying suppliers that fully reflect the principles of the project (ethical standards, legality, high quality of service, economic competence). CHALLENGES - Improve value-for-money of the project - Improve the quality of the offering - Expand the reference market - Create better tools to select and monitor suppliers
Direct activities and impacts:	The project is contributing to increase awareness of the issue of the mafia and its impact on everyday social and economic activities, especially with the younger generations. in Sicily there are now 2 main rural agriculture structures responsible for welcoming tourists and travellers. Libera is working with them to include their local networks in the areas where they are operating
Use of innovative technologies:	N/A
Evidence of a holistic approach/ world view:	N/A
Scale of benefits:	N/A
Policies, incentives and regulations needed:	'Libera il g(i)usto di viaggiare' was bron thanks to Law 109/1996 on the social use of goods confiscated from the mafia. It was born with the aim of promoting the Libera Terra project and the work of the cooperatives that are part of it, using tourism as an innovative way to reach new markets and incrase social impact.
Lessons and recommendations:	N/A
References:	Enza Sorci Libera il g(i)usto di viaggiare Telefono 0918577655 Fax 0918579541 info@ilgiustodiviaggiare.it

Name:	**8. Borghi Autentici Tour SRL (BAI TOUR SRL)**
City, country:	Salsomaggiore Terme (PR) - Italy
Name of entrepreneur / founder:	Associazione Borghi Autentici d'Italia
Description:	Borghi Autentici provides support services to the organization, management and marketing of local tourism systems operating in small authentic villages that have tourism products to offer. BAI TOUR is an operator specialized and dedicated to authentic villages and its approach meets the standards of the project and of the slogan "Hosting Community". This translates to a type of tourism that puts the local Community at the centre of the hospitality practice, in line with its pace of life, its cultural heritage, its identity and its system of available material and immaterial resources.
Investment:	Since 2007 EUR 160.000 were invested for the creation of the web-portal www.borghiautenticiditalia.it and for the creation of other marketing materials..
Stakeholders: (main players involved)	Hospitality practitioners, local service providers, local administrations and firms producing local produce/products.
Employment generation:	
Timeline: (brief history)	2004 - Creation of the Company 2004-2006 Start-up phase 2007-2008 Creation and launch of the web platform (currently attracting 30,000 visitors monthly) 2009-present Management and developent of 15 Authentic Villages
Feasibility study:	A feasibility study was conducted between December 2003 and March 2004
Key features:	• Development of technical assistance services to help develop an integrated offering for authentic villages; • Web-based marketing support; • Coordinating promotional activities and web-based marketing campaigns; • Taking part in specialised fairs and commercial events; • Creation of a web e-commerce portal to create an outlet for traditional products/produce of over 170 Authentic Villages (in progress);
Overall rationale and motivation:	N/A

Strengths:	1. Highly-specialised offering 2. Networked management system 3. Diversified destinations 4. Great value-for-money 5. Highly flexible hospitality mechanisms
Challenges and constraints:	• Hard to translate the complexity and motivation of the offer at the local level; • In some cases, poor efficiency of local Administrations; • Reluctance by local private operators to invest even small amounts of money into network-strengthening activities;
Direct activities and impacts:	Involving an entire community in sustainable tourism activities means having an impact on the historical memory of a place, thus on its very core identity. This translates into new patterns of economic redistribution, new ways of conserving memories and traditions, new ways of caring for the environment.
Use of innovative technologies:	The website www.borghiautenticiditalia.it represents the heart of the system of value-creation and generation of the project, and pushes local operators to introduce themselves more pervasive communication technologies.
Evidence of a holistic approach/ world view:	The concept of 'community' is the heart of the offering. The hospitality mechanism is based on the principles of responsibility and sustainability. Whoever is hosted has to want to have a different holiday, based on the rediscovery of traditions and long-lost details, while the host takes on a welcoming role, on that considers every visitor a 'temporary citizen'.
Scale of benefits:	
Policies, incentives and regulations needed:	• Small incentives to hospitality micro-enterprises that offer services to the Authentic Villages, especially when it comes to improving the quality of the offering; • More training and capacity development; • Support towards "community marketing".
Lessons and recommendations:	• There is a strong need to promote public policies that support the creation of territorial networks that are developing integrated offerings in the sustainable tourism field. • The "Made in Italy" brand has to start including the cultural legacy of small communities and authentic villages into its strategic vision and consequent communication; • There has to be more support towards initiatives that are promoting sustainable and responsible tourism offerings
References:	Dott. Maurizio Capelli - Director Tel. 348.2513976 capelli@borghiautenticiditalia.it

Name:	**9. Cangiari**
City, country:	Via Lazio, 42 - 89042 Gioiosa Jonica (RC) (CALABRIA) ITALY
Name of entrepreneur / founder:	GOEL is a consortium of social cooperatives, one of which - Made in GOEL – manages the CANGIARI brand. The president of both GOEL and Made in GOEL is Vincenzo Linarello.
Description:	CANGIARI is a brand belonging to the GOEL Consortium of social cooperatives. A few cooperatives operating within the consortium in the textile sector joined forces to create the CANGIARI brand, which later allowed other partners that embraced its ethical standards to join in. At the heart of the brand is the concept of social inclusion, which is crucial for the cooperatives involved in GOEL. This is because Made in GOEL is itself a B-type cooperative, a social enterprise legally obliged to have 30% of its workforce listed as coming from 'disadvantaged groups', usually people with disabilities. Made in GOEL is involved in two main activities under the tutoring of Santo Versace, brother of the deceased stylist. The first one is the ancient art of weaving, which the women who work for ARACNE – the cooperative that runs this strand of work – have learned from practiced older women; the second one is the design and production of high-end fashion clothes by Made in GOEL itself. 'Cangiari' means 'to change' in the dialects of Calabria and Sicily, and the meaning implies changing both the world – and particularly the fashion world – and oneself. The CANGIARI logo resembles the mathematical symbol representing diversity: it embodies in this context the project's desire to be different from all other fashion brands. Each CANGIARI item of clothing carries a message to its buyer that speaks of human rights, equality, participation, common goods, ecology and peace. Its strapline - 'Beauty is different' – wants to stimulate a reflection on the beauty (and not just the equity) of a brand that is based on respect for human beings and for nature. This is the reason why CANGIARI textiles are for the most part organically-certified: for the cooperative, social values have to walk hand-in-hand with environmental respect.
Investment:	*Start up capital:* 300.000 Euros from Vodafone Foundation, 20.000 Euros from Banca di Credito Coopetarivo (BCC) of Alzate Brianza, 5000 Euros from BCC of Sesto San Giovanni and 10.000 Euros from BCC Federazione Calabrese. *Rate of return on investment*: n. a. *Sources of funding:* Fondazione Vodafone granted a 300,000 Euros grant through a public call, while the rest of the funding came from a number of cooperative banks affiliated to the BCC consortium. The brand received considerable non-financial help from a number of firms, including free legal advice on brand registration, free interior design for its showroom and free communication support. Accenture alone – the renowned multinational – offered 70,000 Euros worth of consultancies in business and financial planning.

Stakeholders: (main players involved)	• Disabled individuals; • The inhabitants of the Southern region of Calabria which suffer from high unemployment rates and have been badly hit by the outsourcing of production activities abroad; • Women weavers and other workers; • Those who benefit from the communication campaign of CANGIARI aiming at regenerating the area both economically and socially; • Those wealthier individuals who live in Calabria and who can – through the simple act of purchasing an item of clothing – express their concern for the local situation and their desire to support a process of change.
Employment generation:	Number of direct employees: 18. Number of regularly-employed external collaborators: 10

Timeline: (brief history)	The social consortium GOEL was born in 2003, after a 10-year long process of territorial advocacy and awareness raising led by Bishop Monsignor Giancarlo Maria Bregantini, who – born in the Trentino region where the social cooperative movement is very strong – believed this to be an important tool to fight against social exclusion and unemployment. These first 10 years were crucial in creating the setting for the consortium to be born, and especially in persuading a number of people that social change was indeed possible. Only a few small cooperatives were created at first, mainly working with former inmates and the sons of 'Ndrangheta bosses who were trying to break free of their mafia-dominated upbringing. Their limited size did not prevent them from having a strong impact in Calabria. A few years later, Bishop Bregantini created the free info-point CREA LAVORO, which supported the start-up and creation of social enterprises and social cooperatives. Finally, in 2003 the GOEL consortium was set up, in order to provide follow-up support to those social enterprises and cooperatives that were born thanks to the info-point. The name GOEL comes from the Bible and means 'Redeemer', thus symbolizing the role that the consortium would like to play in the region as 'enabler' and redeeming actor, especially in support of those individuals who are less autonomous and able to defend themselves. The consortium is primarily made up of 'A-type' and 'B-type' cooperatives located in the Locride areas and in the Gioia Tauro plains. The former deliver services that are specifically aimed at vulnerable groups, while the latter are normal enterprises, with the only difference that a percentage of its workforce is made up of individuals that suffer from some form of disability or social problem. The consortium recently joined forces under the common umbrella body of the GOEL Cooperative Group with two other social cooperatives, GOELBIO and Made in GOEL, both born to manage specific economic strands. Made in GOEL is the cooperative that manages the CANGIARI brand. It brings together those cooperatives responsible for the production and marketing of CANGIARI products. Born in 2009 in Milan under the auspices of the Italian National Fashion Chamber (which organizes amongst other things Milan Fashion Week), CANGIARI secured through a public procurement process a location for its first store in Milan: a flat once belonging to a Mafia boss, and later confiscated by the State when the boss was arrested. The flat became not only CANGIARI's show-room, but also a cultural space that aims to raise awareness in Milan and beyond on issues such as social justice and environmental sustainability. Twice a year, CANGIARI takes part in Milan's Fashion Week. In May 2010 it was one of only two enterprises – amongst 60 participants - awarded a special recognition at Paris' Sustainable Luxury Fair. The prize was awarded on the basis of its social and environmental responsibility, as well as of the value and refined quality of its products. On 17 July 2010 CANGIARI was awarded the 'Fashion and Society" prize at the International Fashion Fair 'Catania, Talenti & Dintorni'.
Feasibility study:	The feasibility plan, encompassing both Italy and abroad, was drafted by Accenture. The industrial plan is in progress.

Key features:	• *Strong environmental concern and sustainability drive in all production processes.* • *Use of traditional weaving machines and of techniques that were progressively being lost in the area, but which have now been passed on to younger generations.* • *Strong ethical commitment towards fighting the Mafia and towards encouraging political participation*
Overall rationale and motivation:	
Strengths:	• Very high craftsmanship; • Use of organic materials in all production; • ICEA Global Textile Standard: adoption of an international certification standard – ICEA (Certificazione Etica e Ambientale) – based on the Global Organic Textile Standard (GOTS), which ensures very high standards in terms of employee protection and security, energy conservation, waste management, etc.; • The entire production chain is made up of social cooperatives as defined above; • Strong communication ethics.
Challenges and constraints:	The main challenge is to be able to compete in the high-end fashion market with traditional profit-making bodies that do not have the kind of background, social objectives and financial constraints that CANGIARI has. While other luxury fashion brands can spend a lot of money on marketing and advertisement, CANGIARI has none of their liquidity. In addition, the region where the production is based is in itself a challenge, because of its physical remoteness, its ruggedness and its poor infrastructure, which are mainly overcome today by the sheer ingenuity, passion and commitment of all those involved in the project.
Direct activities and impacts:	• *Social:* social regeneration of a region and its people; • *Environmental:* commitment towards choices that minimize environmental impact; use of renewable energies whenever possible; • *Economic*: job creation and preservation of ancient weaving techniques.
Use of innovative technologies:	Most innovation has happened in the area of weaving tools techniques, some of which have been copied from ancient tradition – especially in the case of linen items – while others have instead been adapted to modern standards and needs. Vital in this sense was the pro-bono support offered to CANGIARI by Riccardo Bruni from LYRIA, a textile company specialized in the production of textiles for the high end fashion market.

Evidence of a holistic approach/ world view:	CANGIARI sees its environmental commitment as fully integrated to its social aim. The one could not exist without the other one. An ethical approach sees man as part of nature, but also as part of complex social, political and economic webs that need to be made visible and opposed when they belong to criminal organisations like the Mafia. CANGIARI sees its role not just as locally-rooted Southern Italian enterprise, but also as campaigner in Northern Italy and abroad about the deep linkages between economic systems, politics and criminality worldwide.
Scale of benefits:	The economic and environmental benefits are mainly perceived locally. The growing hope for change is mainly felt locally. The growing awareness about this land and the causes of its economic woes are felt locally and nationally. GOEL's analysis stems from the realization that there is a tight linkage between economic woes and criminality in this area of Italy (but not only). Elements that elsewhere would be considered rights (the right to access healthcare, the right to employment, the right to a transparent public administration), here are considered privileges, which are granted to people in need in exchange for votes. These individual loose their freedom and live in a state of eternal dependency. Votes are packaged and sold separately to political parties. The money raised by these transaction does not stay locally – this would enable the local economy to develop – but is sent to the North of the country, where it pollutes the markets and the local economy. This picture is confirmed by years of investigation by the Italian juridical system, yet it hardly ever trickles down to the public conscience. Raising awareness of these economic dynamics and of the role that a project like CANGIARI can play in opposing them remains one of the objectives of the GOEL consortium.
Policies, incentives and regulations needed:	In consideration of the complexity of the themes that GOEL deals with – social inequality, social injustice, linkages between criminal organizations, politics, economic sectors and social problems – it would be impossible to answer this question concisely. There are many policies tha need to be amended in order to enable social change and sustainability to flourish in a region like Calabria and a country like Italy.
Lessons and recommendations:	The first lesson is that social entrepreneurship – even at times of economic hardship like the ones we live in – can pay. CANGIARI's turnover has consistently grown over the last few years. A project like CANGIARI is very important for a region like Calabria in Southern Italy, where a local economic development model is locally-rooted and ensures results and benefits are shared and spread in terms of social inclusion and economic growth.
References:	*Manuela Sfondrini* *Direzione Area Produttiva* *Gruppo Cooperativo GOEL* *+ 39 340 0920982*

Name:	**10. WORM snc and Carretta Caretta innovative plan**
City, country:	Augusta, Italy
Name of entrepreneur / founder:	Paolo Garelli e Roberto Pirani
Description:	Since 2008 WORM works in the environmental sector, specially in the field of urban waste collection. The key asset is to re-think the collection of waste in an unconventional perspective, increasing the perception of the garbage as resource. Another key asset is to enhance the connection of the waste collection behaviour with social, economic and cultural patterns that are well accepted within the local context. WORM snc takes move and develops from the initiative "Carretta Caretta", a small truck traditionally used for the transport of goods and in this case re-equipped for serving into the waste collection especially in historical towns with narrowed streets. The small truck stops in prescheduled spots of the town and invite citizens to dispose their pre-sorted waste.
Investment:	Start up capital: 5.000 Euro Rate of return on investment: almost 200% Sources of funding: Personal
Stakeholders: (main players involved)	Public-shared companies, citizens, town councils: Comune di Lipari (Stromboli), Comune di Atina (Frosinone), Comune Santa Marina Salina, Comune di Roma, Comune di Procida, Comune di Spadafora (ME), Comune di Mantova, Comunità montana dei monti Lepini (Frosinone), Comune di Terracina (Latina), Comune di Ventotene.
Employment generation:	WORM counts only two members and full time employees, an environmental engineer and a project designer. Once that the Carretta Caretta program is defined and implemented, a variety of functions are generated. Generally speaking, the program produce a clear re-qualification of human resources and skills, with a consequential cost-effectiveness and added value for the municipalities involved into the scheme.
Timeline: (brief history)	WORM was born in 2008 with the aim of spreading the Carretta caretta patent, mainly in villages and small towns, and of working to reduce, reuse, recycle and organize waste collection.
Feasibility study:	The feasibility study was carried out in 2008 and a short description is available here: http://www.carrettacaretta.com/?p=6
Key features:	The Carretta caretta patent is a system that improves waste collection in historical city centres, where big waste collection trucks find it difficult to enter. Together with a small truck, the staff is totally re-organised and performs several functions during the waste collection, together with the promotion of a proactive attitude among citizens and users.

Overall rationale and motivation:	Several statistics point out that in Italy the waste sorting works only up to 20% without a door to door collection. Caretta aims to combine the education of the population with an easy collection, accessible to everybody
Strengths:	- Increases economic savings, - Improves citizen environmental awareness and relationships, - Increase recycle - Empower the status of dustmen and street sweepers - Reduces traffic - An holistic approach to consumption and waste behaviour See video http://www.youtube.com/watch?v=f3vg90aGf-c
Challenges and constraints:	The progressive reduction of incomes for municipalities is increasing the need of a better management with lower costs for key services like waste collection. Carretta caretta offers a solution that is at the same time easy and inexpensive. Therefore, the initiative is recently encountering a series of new opportunities, also thanks to the raising awareness on environmental related issues. However, the following constraints remains to be underlined: - the waste management is in Italy solidly in the hand of lobbies that are connected with strong economic interests which are difficult to be replaced - the licence and copyright on Caretta caretta is difficult to be protected and WORN already experienced several counterfeits and illegal duplications (a legal trail is currently in progress with the Rome Municipality) - while the initiative should be implemented in its integrity with the full reorganisation of the waste collection system, there is the risk that municipalities just use the small truck without following the full reorganisation and upgrading of the staff not always municipalities proved to seek for cost-effectiveness and often they prefer more costly and politically driven solutions (for instance connected with landfills)
Direct activities and impacts:	• Social: more confidence, trust and reciprocity between citizens • Environmental: decrease of waste and use of energy • Economic: less cost and more benefit
Use of innovative technologies:	While the truck is upgraded with several technologies recently applied to the waste collection (balances, semi-automatic arms, displayers) the innovation is more focused into the human and organisational aspects
Evidence of a holistic approach/ world view:	Carretta caretta is a very visible small scale example of the cycle of production, consumption, waste, recycle.
Scale of benefits:	- Improvement of quality of life, especially in the Mediterranean historical downtowns - Upgrading and poly-functionality of operators into the waste sector - Increase of awareness among citizens - Sharp amelioration of the quality of the waste (CONAI)

Policies, incentives and regulations needed:	EU regulations June 2010 introduce key principle on recycling and thresholds of waste production: “ the EU society is founded on the recycle and on the free market” In Sicily, the New Regional Plan introduces a total renewal of the Solid Waste Management in 14 ottobre 2010
References:	Paolo Garelli +39 339 7601782 www.carrettacaretta.com

Appendix 2

FOCUS GROUPS IN ROME, CATANIA, MILAN AND ROVERETO

Focus Group Report
Rome

14th of October 2011
@ Mondo Digitale Foundation
Time 17:00 – 19:30

Participants:

1. **Alessandro Nasini**, founder and CEO of Maple , publisher in Greenternet
2. **Alfonso Molina**, scientific director of the Mondo Digitale Foundation
3. **Andrea Pugliese**, export on labour policy and vocational training, writer
4. **Beatrice Marisei**, CSR manager, Bic Lazio
5. **Caterina Banella**, export in communication and CSR
6. **Fabiana Musicco**, project coordinator for the IPRS institute, former publisher for the Sole24ore
7. **Giorgio Antonazzo**, architect and founder of Spazio Aperto
8. **Margherita Cittadino**, Amnesty International, winner of the 2011 International Social Innovation Competition
9. **Sandro Polci**, architect, project manager Cresme Group, expert on local development and public communication, member of the presidency of the scientific committee of Legambiente
10. **Simona Limentani**, co-founder of the enterprise Zolle
11. **Veronica Caciagli**, president of the Italian Climate Network, export on climate change
12. **Dario Carrera**, Hub Roma
13. **Ivan Fadini**, Hub Roma, host
14. **Rosario Sapienza**, Hub Sicilia, moderator

1. Green concept: What characterises “Green entrepreneurship” and “Green economy” in the centre of Italy?

All the participants felt themselves comfortable with an extensive “ethic-eco-bio-sustainable” model of “green” (Alessandro Nasini), where the domain does not remain confined into the strict environmental sector but happily browses into the realm of emerging social needs and ethic values.

Therefore, “green” have been immediately projected into a broad concept and a great opportunity for “ri-naturalization”, for enhancing “sustainability” and rediscovering “[urban] intensification”, following the medieval model, still present into the central Italy, of a thick, effective and multi-faced human interaction (Sandro Polci).

“Green entrepreneurship” can be seen also as the combination between a) the use of innovation for targeting emerging market opportunities and b) the adoption of a totally renovated long terms perspective, the opposite the take-the-money-and-run paradigm, so spread and popular among traditional entrepreneurs (Caterina Banella). The “green” model focuses also on a crucial and renovated concept of “shared value”.

More than a simple opportunity, the “green option” have been seen also as an ineluctable pathway toward a generalised struggle for survival: switching into “green” (seen as sustainable and renewable production chain transversal to all sectors), is not a simple option but a generalised necessity (Veronica Caciagli): becoming “green” is a necessity for the single firm that wants to find its way into the emerging market but it is also a necessity for the local communities, as well as for the different countries and for the planet as a whole.

A doubt was clearly expressed by several participants on the driving feature of the “economy”. Why is the economy that should drive the process toward new “green” paradigms? (Alfonzo Molina). Nowadays we really do not need more evidences that prove how many problems can cause an economo-centric approach (Giorgio Antonazzo).

While “innovation” (as part of the concept of “entrepreneurship”) should be kept as a promising conceptual tool, it is of paramount importance that “economy” is convincingly scaled down and considered as part of an holistic approach able to consider, at the same time, all the facets related to the human well being (Alfonzo Molina). This sounds quite different to the techno-centric and economo-centric approach that considers as main player enterprises instead of persons. This preference for the economic stakeholders instead of human beings normally refrains common people to ultimately sympathise with green-economy related issues (Margherita Cittadino).

A part from these conceptual and philosophical concerns, very relevant among experts and practitioners, the common perception of “green” have been brought into the picture (Fabiana Musicco), shifting from the point of view of the “experts” to the point of view of the society as a whole. From this perspective, “green entrepreneurship” is probably more simply considered as a business and a production chain which is conscious of (and pay attention to) its effects on the environment. More prosaically, for the average of the micro, small and medium enterprises (the absolute majority in Italy), “green” is synonym of legal constraints, obligations and obligatory procedural requirements. It can be seen also, at the opposite, as an opportunity for an injection of public funds into the business, thanks to the various public incentives provided by the law.

Seen from a more contextualised perspective, two or three levels seems to coexist into the "green" sector: in a distant position, few advanced picks, pioneers of excellence that brilliantly show the way forward and, behind, the demand of the potential "clients" in one side and the idle rigidity of the entire "system" in the other. While the demand for "green" shows a certain interest and curiosity, the legal framework and the generalised business culture remain generally unsatisfactory (Caterina Banella). As a result, in the centre of Italy the critical mass for a veritable switch into "green" is far to be achieved. In the meanwhile, it is true that the public opinion and consequently the political discourse takes some green nuances (Andrea Pugliese), but it remains questionable if it is a superficial make-up, a deep green washing or a substantial effort toward more sustainable business and market models (Simona Limentani). As a general perception, between the big programs and policies in one side and the isolated best practice in the other, the bulk of the green sector is in central Italy still weak and generally inconsistent (Giorgio Antonazzo). This can especially be seen from the vulgarisation of the "bio" chain and from the generalised disorientation and disinformation of the vast public of potential consumers.

2. Green performance: What works better and what works worse in the Green sector in the centre of Italy?

Most of the participants at the focus group discussion agree on considering mobility, urban planning and building sector as the most problematic compartments in terms of sustainability and "green" perspective. They agree also on considering waste recycling and management, bio production and renewable energy as the most successful "green" sectors in central Italy. However, this success is hampered by several caveats. First of all, these sectors are greatly distorted by public funds and incentives and they are not the effect of a genuine interest by the different components of the market. Also, in the daily life of the majority of enterprises in Lazio and Central Italy - which are predominantly micro and small - simply "sustainability is not sustainable" (Beatrice Marisei). If not supported by incentives, the "green" orientation is not rentable, in term of profitability and cost/effectiveness, especially if considered in a short terms perspective, the only perspective nowadays considered by small size and family owned and managed enterprises. Sustainability is generally not sustainable for the average of micro and small enterprises that have the "green" as core business (a part from eventual incentives that keep the business up and going) and it is even less sustainable for the enterprises that "perform green" and introduce bio-sustainability as a process and productive chain (row materials, logistics, work planning and labour organisation). The comprehensive legal, political and economic framework just does not create the right environment for this, and, a part from green washing, from the dissemination of public incentives and from the existence of bright exceptions, the green market is not marketable for the micro and small enterprises.

The gap between the perceived and the substantial performance of the different "green" sectors have also to be considered. It is normally said that in general bio production and renewable energy work well but this proved not to be true (Alessandro Nasini): the renewable energy sector has been an heavy and not sustainable cost for the Italian system, while the bio production is a fake market not qualified by an informed and critical demand or by a fair, practicable and transparent set of rules. Moreover, the main driver for the raise of the demand of green is characterised by the fear (Alfonzo Molina) more than by the set up of vital and positive values. People fear the pollution, fear the poisoned food, fear the irreversible degradation of the habitat and therefore increase the consumption of "green". Fear is therefore created, marketed and managed.

3. Green perspective: What we can expect for the future on the Green sector in the centre of Italy?

In any case, it is not correct to liquidate the green compartment just because of the above mentioned criticisms (Sandro Polci). The numerous constraints, some of them have been summarised, should encourage on driving the process toward more solid standards. We are somehow paying the costs of innovation and the cost of a start up sector that has to find its way and its balance between governance and market. The future in this perspective is not only obliged (there are not alternatives and we all are obliged to become more "green") but also a variegated basket of opportunities. Beyond the green marketing there is a need for a substantial change and this is becoming more and more evident (Simona Limentani).

All the participants perceived our focus group discussion as a private environment where criticisms can be freely discussed among experts. However, they agree that the public and official version on the "green" perspective should be much more optimistic and promising than the one provided above, where several serious gaps and constraints have been pointed out. This is especially important because there is a lack of trust that have to be addressed and solved (Andrea Pugliese). The individualistic and autarchic Italian attitude is nowadays progressively combined with the emerging distrust toward the public system in general and the rule of law in all its capillary dimensions. The certification process of the bio production is not considered reliable and the general trust of the Italian customers toward the green traceability is quite low. While the switch of the Italian consumption into "green" consumption has to rely on the established trust between different stakeholders, the traditional Italian attitude is especially characterised by individualism and distrust toward the public general system (Simona Limentani). Therefore, the "Zero kilometre" distribution chain, that emphasise the trust established by a face to face relation between produces and consumer, seems at this stage to work better than the bio production combined with the industrial and large scale distribution.

Focus Group Report

Catania

20th of October 2011
@ Sapienza Premises
Time 17:00 – 19:30

Participants:

1. **Alessandro Zappulla**, (Nokia/Siemens), expert on "green" issues, activist and social mobiliser, alessandro.zappulla@gmail.com
2. **Vincenzo Scuto**, engineer and green entrepreneur in the domain of renewable energies, promoter of the consortium "SOS rinnovabili", vincenzo.scuto@gmail.com
3. **Fernanda Pellegrino**, eco-entrepreneur (Pegasoambiente srl), environmental consultant, pegasoambientesrl@virgilio.it
4. **Paolo Guarnaccia**, bio-agronomist and professor at the Catania University, expert on sustainable waste management and promoter of the Sicilian branch of the Zero Waste international movement, paolo.guarnaccia@terredisicilia.com
5. **Emma Schembari**, environmental lawyer, consultant for the public administration (gruppo ISPRA) with specific skills in environmental remediation and sustainable waste management emma.schembari@libero.it
6. **Viviana Cannizzo**, expert in public relation and viral communication with specific focus on "green" related issues viviana.cannizzo@gmail.com
7. **Stena Paternò**, consultant for the public administration on local development related issues, entrepreneur and expert on gardens and plant nursery, stena.paterno@gmail.com
8. **Mario Tringali**, public official (Assessorato ecologia e ambiente of the Catania Municipality), expert in marine biology and sea conservation, ketos@hotmail.it
9. **Sebastiano Spina**, electronic engineer (STMicroelectronics), experts on environmental sustainability, promoter of the Sicilian branch of the Zero Waste international movement, spinaseb@gmail.com
10. **Rosario Sapienza**, HUB Sicilia, host and moderator, rs@abatonmail.it

1. Green concept: What characterises "Green entrepreneurship" and "Green economy" in Sicily and in the South of Italy?

Everything is environment, not just the *Nature*. Society and its functioning, including consumption, style of life, economic production and transformation, have to be considered as part of the environment (Vincenzo Scuto). Therefore, environment is not a separate component of the whole system but more simply the frame, the context, the habitat and *the environment* where every single component is obliged to perform. This self-evident statement initiated the discussion among the participants to the Sicilian focus group.

The "green perspective" is also perceived as a "perfect mechanism" (Alessandro Zappulla), a vital, regenerating cycle, able to convincingly substitute the traditional and not sustainable linear production chain (extraction of natural resources and row materials > manufacturing > distribution > consumption > disposal). During the discussion, "green" have been strongly related with "sustainability" and sustainability with "saving" driving the conversation toward a new style of life which would be able to re-discover how the existing consumption style is totally unnecessary and ultimately distract people from the enhancement of their own well-being (Sebastiano Spina). At the opposite, sustainability is, in theory, pleasant, fresh, simple, convenient and contagious because it clearly "works better", because it shows its evident, practical and immediate advantages (Emma Schembari). From the small scale processes related with the households management to more vast and complex industrial processes, sustainability can be socially and environmentally profitable and also, especially, financially convenient. Even the environmental cleanup of a contaminated land, normally considered as a inextricable, multi-faced, costly and impossible-to-be-solved problem, can be seen as a potential provider of labour, investments, industry development and induced economy (Fernanda Pellegrino and Emma Schembari).

Despite experts and practitioners recognise that sustainability *is* sustainable and potentially convenient for all, common people and decision makers does not acknowledge this objectively accepted and verifiable evidence. There is a serious gap between the level of awareness and understanding among professionals and the common behaviour of ordinary people (Mario Tringali). Despite eco-friendly solutions are now tracked and accepted by the scientific community, despite they have been proved to be effective and became reliable solutions toward sustainability, the generalised translation into practice is far to be achieved. Despite the evident convenience of this process, people are generally not ready to accept that a new model is imposing a totally different set of mind. People resist to change, policies refrain to be applied, industrial processes avoid to converge, consumption patterns does not evolve. There is a generalised cultural resistance, greatly reinforced by solid economic and political interests intricately interconnected with the "old" model (Vincenzo Scuto).

2. Green performance: What works better and what works worse in the Green sector in Sicily and in the South of Italy?

Scaling down into a more operational perspective, participants tried to define green entrepreneurship using a set of characterising features: in theory, an enterprise, in order to be "green", has to be at the same time: a) eco-friendly, b) locally-based and locally-driven, c) ethic and oriented toward social reciprocity (Paolo Guarnaccia). Therefore, participants distinguished the "green attitude" from the "green fashion" (Stena Paternò), showing that, according to the above mentioned characteristics, some enterprises from the "green" sector are not "green" in reality, while others, despite their core business belongs to the traditional sectors, perform "green". In other terms, a green enterprise can be recognised from the

relation it establishes with the environment, the territory and the human beings. Also, if we accept this model, we have to admit that a perfect “green” enterprise does not exist in the real world. The pure eco-friendly, locally-driven and ethic enterprise is rather a model and a benchmark to be applied to the co called “green” enterprises as well as to any other kind of enterprise (Emma Schembari).

In this respect, several examples of evolution into a “green” path do exist in Sicily and in the South of Italy. These examples - going from fish manufacturing (Mario Tringali), local governance (Aci Bonaccorsi, Ragusa), bio production (Emma Schembari) or renewable energy, especially solar (Vincenzo Scuto) - tend to be scattered in several domains and sectors, they are isolated and they are not capable to produce a critical mass able to produce a structural change.

The take off of the green sector is therefore hampered by this evident fragmentation and also by the lack of a favourable legal and political setting. The market itself proves to be weak, with the lack, especially in Sicily, of a resolute demand for green products by the vast public and final users (Fernanda Pellegrino) and by the public system, including the non-application of the Green Public Procurement law, according to which 40% of the public expenditures should be “green”. Participants agree that the lack of law enforcement is one of the veritable disaster and bottleneck of the sector. If, for instance in the bio production, we are the first to produce and the last to consume (Paolo Guarnaccia) it has been also noted that our production is not ready to match with a complex and sophisticated market, especially where certification and accountability are concerned (Emma Schembari).

In any case, under the legal, macro economic and structural constraints, during the conversation prevailed the trust on the micro virtuous realities. Hundreds of persons daily engaged “in their courtyard” to make the green possible. Expanding this small but growing community is the possible solution and the way through (Sebastiano Spina). A new “green” culture is progressively imposing through a bottom-up process, despite the lack of law enforcement, the mismanagement of public funds and the persistence of the speculative attitude of the financial stakeholders.

3. Green perspective: What we can expect for the future on the Green sector in Sicily and in the South of Italy?

We cannot realistically expect that the switch into “green” will come from the politics or from the financial system. The change will come from a respectable portion of common people that perform differently and from a cultural click in the way they work and produce, the way they consume, they move and dispose their garbage (Alessandro Zappulla). The change is slowly advancing bottom up and through renovated behaviours.

A sense of responsibility is timidly emerging. The motto “leave the world better than you received it” is an inspiring concept for a new generation of entrepreneurs and professionals that feel their own responsibility for the way things are going (Vincenzo Scuto). The public responsibility of the private citizen, the social costs of its uncivil behaviour is slowly emerging among an illuminated and minor portion of Sicilian society. Tax payment, rule of law, right to protest, duty on denouncing, injustices, crimes and illegalities are all aspects intimately connected with the “green” perspective, especially in the South of Italy. How to expand the consciousness on these topics from an elite of informed middle class people to the vast majority of customers/electors is the challenge that currently has to be faced.

Room for improvement can be observed into the domains of a virtuous networking and a positive information system (Alessandro Zappulla), tools able to spread and virally contaminate with good examples and good practices several layers of the society, from private behaviours to the political agenda.

Another move that has been mentioned is to decide to be inclusive and to accept the traditional enterprise into the green pathway, imagining that every kind of enterprise, even a coachbuilder, can make its own process and become more and more green (Emma Schembari).

Again, lightness and simplicity, showing actions and performance and even art can be of help (Paolo Guarnaccia). Sicily and the South of Italy are not yet so distant from the rural culture of their “fathers” and it is important to be able to recuperate the functionality of the past instead of convincing people on the rightness of a distant and uncertain future.

Also, the global crisis is a paramount opportunity (Fernanda Pellegrino). People are now forced to demand themselves if the usual model is still useful, if they are still happy, if they are available to pay the costs of their style of life. With the crisis, people question themselves and are much more available to jump into a new dimension.

Workshop "Green Entrepreneurship in Italy"

Focus Group and World Cafè Report

Milan

@The Hub Milan, 25 October 2011

Participants:

1. **Enrico Murtula**, environmental lawyer
2. **Davide Agazzi**, avanzi, sustainability and social economy consultant working for one of Milan's leading organisation in the green economy field
3. **Guido Trivellini**, WWF, conservationist working for one of the world's leading environmental NGO
4. **Giulio Raimondi**, Innoind, founder of an entrepreneurs' network for innovation
5. **Giovanni Petrini**, avanzi, formerly director at Fa' la Cosa Giusta, the main fair for the social and green economy in Italy
6. **Elena Jachia**, Fondazione Cariplo, in charge of the foundation's environmental programme, one of the largest in Italy
7. **Vita Sgardello**, Vita Europe, environmentalist and journalist working for the first European magazine for the social and sustainable economy
8. **Letizia Todaro**, Feel Good, sustainable agriculture expert working for a CSR consultancy company
9. **Eric Ezechieli**, The Natural Step, founder and director of the Italian chapter of the global sustainability network
10. **Sissi Semprini**, Greenbean, sustainability expert supporting enterprises in their green communication
11. **Cristina Gabetti**, environmental journalist, TV journalist on environmental matters and author of a widely-read book on sustainable consumption
12. **Marco Gialdi**, Fastinking, Rigeneriamoci, green entrepreneur working especially in the area of ICT recycling
13. **Erika Sartori**, Valcucine, director of the Eco-Bookshop Valcucine, a specialised bookshop on green issues, communication manager for one of Italy's leading sustainable furniture production companies
14. **Alberto Masetti-Zannini**, The Hub Milan, facilitator

FOCUS GROUP - Question 1

What characterises the 'green entrepreneurship' sector in Milan and Italy more generally?

The group felt that 'green entrepreneurship' is both a convenient label and a reflection of a cultural shift (Ezechieli). There is a clear perception on behalf of certain economic sectors that something that can be labelled 'green entrepreneurship' is indeed emerging - the recent mapping of hundreds of green enterprises by Assolombarda is an example of public recognition towards the sector and an attempt at designing support systems for its growth and internationalisation (Jachia).

At the same time, participants felt that there isn't a clear understanding of what constitutes a green enterprise, and that most of the time a simple sustainability report is what most firms would deem a significant step towards becoming green (Semprini, Gabetti). Another distinction was drawn between those economic actors that are providing green services to the public (for example in the areas of natural resource management, waste management, pollution control, climate change adaptation technologies, etc), and that are carving out a green space for themselves, as opposed to those economic actors who are engaging with the market with products that are greener than their counterparts (Trivellini, Murtula).

Some questioned whether the latter - which include firms that are greening their actions by reducing waste, cutting down on emissions, using less energy, etc. - can in fact be considered green enterprises (Raimondi). Some participants also observed that most green enterprises, especially in Milan, are responding to a bottom-up cultural change that is putting sustainable behaviours at the core of everyday actions. They do this by offering greener products and services to the public, and in so doing they open up the market further and create a virtuous circle between cultural change and economic pathways (Agazzi).

Overall, however, the group felt that it is still early to speak of a clear-cut green entrepreneurship sector, that too many actors are just jumping onto a bandwagon without clear credentials or certification, that this confuses consumers and makes them feel like many products and services that are described as green rarely are so (Ezechieli, Gabetti). The group also felt that the undeniable cultural change in terms of growing sensitivity towards green behaviours is triggering a plethora of bottom-up initiatives (one for all: GAS, solidarity purchase groups) that are contributing towards reshaping the economic landscape, despite their fragmentation and lack of co-ordination (Todaro, Petrini).

FOCUS GROUP - Question 2

What are the strengths and weaknesses of the green entrepreneurship sector in Milan and Italy more generally?

The group concentrated mainly on the weaknesses of the sector, perhaps feeling that these were more obvious and in need of urgent attention. The first observation made was that the challenges faced by many green enterprises are the same as those faced by all Italian enterprises: poor guidance and vision by the State; too much bureaucracy and legal uncertainties, which hit in particular SMEs; too much taxation and little support services in return; a generalised decline in the traditional industrial sectors which could battle the crisis by in-

novating and greening, but in fact chose to move their production units to cheaper parts of the world (Gialdi). This is a defeat both for the environment (lower sustainability standards in many new industrialised countries, less control, more carbon emissions, etc.) and for Italy (job losses, urban degeneration, de-linking of the economy and society).

For some in the group, solving the challenges of Italy's enterprise sector and building a stronger future for the country's economy is in itself a way to strengthen the green enterprise sector, because only enterprises that fully embrace the sustainability challenge are those that will survive in the future (Ezechieli). The situation is such that they cannot afford not to become more green. It's not just a fad or a marketing ploy: the future of the planet is at stake. The group in fact observed that the green enterprise label could lead to a 'ghetto mentality' that would not be conducive to the long-term transformation of the economy. Innovation has to respond to needs and opportunities, and today there is nothing as pressing as ensuring the sustainability of our planet (Petrini).

One positive element that was discussed is that many Italian firms are still closely linked to single families, and in this sense there is a sense that these individuals will care more about the future than a faceless stock market (Ezechieli). It is easier for this type of firms to care about the future also in terms of environmental sustainability, because these entrepreneurs look at the future in a personalised way, not in an abstract one (Sartori). Another aspect that several participants underlined is that one of the main weaknesses of the green entrepreneurship sector is its inability to link environmental and social impact, as if they were two distinct spheres. In fact, for all participants, the two are completely inter-linked, and firms have to start looking at the two as part of a holistic approach towards sustainability (Agazzi).

Finally, the group returned to the issue of poor strategic guidance, explaining how difficult it is to change deep-rooted bad practices (for example along the production chain) when these is little incentive or support from the state (Raimondi, Gialdi). Also, the group felt that the gap between where we are at - in terms of greening our economy - and where we need to go is so wide, it sometimes feels impossible to fill (Gabetti).

WORLD CAFE' - Question 1

Based on the strengths and weaknesses you have identified, what future do you see for the green entrepreneurship sector in Milan and Italy more generally?

- All groups foresaw a systemic collapse (or at least a series of disruptive changes,from both an economic and environmental perspective) that would make a 'business as usual' approach untenable.
- All groups expressed the belief that only those firms that put sustainability at the heart of their strategy will survive. The others will end.
- One group stressed that the future of green entrepreneurship in Italy IS the future of Italy.
- Given the lack of strategic guidance, the bureaucratic weight and the relative backwardness of most economic actors (despite several examples of best practices), all groups saw the future as one with a weaker presence of Italy on the international scene.
- All groups acknowledged the growing bottom-up emergence of sustainable initiatives and practices, which are impacting the economy and creating new behavioural patterns, but are still too weak and fragmented and need to be strengthened and connected instead.

WORLD CAFE' - Question 2

What specific actions or interventions are thought to be priorities in order to strengthen the growth of the green entrepreneurship sector in Milan and Italy?

- Educating people at all levels on the need for more sustainable practices was perceived by all as a priority - in schools, in firms, everywhere - in order to raise awareness, diffuse knowledge, aggregate data that support sound economic policies.
- One group felt that a large-scale economic shift from old production patterns to green entrepreneurship needs to be done intelligently and slowly, not to create social shocks which would jeopardise this change.
- All groups stressed the need to connect all that is happening on the ground more effectively, in order to share knowledge and practices, create virtuous circles.
- At the same time, all agreed that a bottom-up approach is not enough, it needs to be flanked by a top-down strategy that creates the right kind of incentives for change. This top down approach would include: R&D, rewarding excellence, punishing (e.g. through taxation) bad practices, prioritising the environment in all public sector interventions and strategies.
- All groups agreed that a political change would be necessary for this top-down approach to be possible, as at the moment the public sector is unwilling and unable to pursue such long-term visions.
- If it did happen, all sorts of public-sector led interventions could have a huge impact on the way the sector develops, for example through a reform of public procurement models or public service delivery mechanisms that take into account sustainability values.
- One group felt that a new legal status for green (social) enterprises would help in the transition towards a greener future, as it would offer a stronger backing and support (e.g. through new financing mechanisms) for those who are operating in a greener way.
- Finally, one group felt very strongly that a deeper connection between the market and civil society is the only way for a new form of human-centred economy to emerge, one which looks at the environment not as a mere source (of energy, food, minerals, etc.) but as the ecosystem in which we live and on which we depend to survive.

Focus Group Report

Rovereto

@The Hub Rovereto, 27 October 2011

Participants:

1. **Matteo Ruele**, Roverplastik – green produts for buildings
2. **Paolo Ghedina**, Walkness – mountaneering and environmental consultant
3. **Filippo Martini**, Architect
4. **Sonia Flaim**, Environmental consultant
5. **Giuseppina Ascione**, Architect
6. **Emanuele Rocco**, Researcher
7. **Leonardo Benuzzi**, MIT, green entrepreneur
8. **Andrea Saiani**, Green entrepreneur
9. **Jari Ognibeni**, Regenergy,
10. **Paolo Campagnano**, Facilitator

The group is a mix of people working at different levels in Green entrepreneusrship. It is a group composed by entrepreneurs, researchers, consultants. Green economy concept is very well known here in Trentino and all of the participants see this as their core activity and are trying to invest and to develop their businesses within and out of the regional borders. Trentino is a very peculiar land as is an autonomous province with a strong sensibility and awareness on environment and nature. At the same time, Trentino has problems on the entrepreneurial side, as it must developed a strategy to promote entrepreneurship in general and in the environmental field.

FOCUS GROUP - Question 1

What characterises the 'green entrepreneurship' sector in Trentino and Italy more generally?

In Trentino and in the rural areas that characterise the north-eastern scenario, the environment is something very precious as it is one of the biggest territorial asset. Also, the area is rich in natural resources as water and forests. The relation between people and environment has always been strong and lately this has been seen as an important entrepreneurial field.

There is an attempt from Trentino to become a leader on this side and a lot of initiatives have been run so far to get this role at a national level.

By the way, there is a problem with the definition of Green Entrepreneurship. Some of the participants at the focus group discussion report that they have had discussions about this definition with representatives of the public sector because of inhomogeneous attempts and they couldn't receive satisfying clarifications. Other participants claim that that the concept of Green Entrepreneurship is in Trentino mostly related to the building sector and energy.

Trentino and all the Adige valley including South Tirol have a leadership position as far as concerns Green buildings. Someone even compares this valley to the Silicon Valley, as here happens innovation at a worldwide level about green buildings and there is a quality district across universities, enterprises and public sector. The buildings sector and, secondarily, the renewable energies sector are seen as the core of green entrepreneurial panorama in Trentino, but is a common opinion of the attendants to the focus group that nowadays every new entrepreneurial initiative needs to show itself as "sustainable".

This happens also because of a particular relation that the people living in this territory have developed with the environment and the nature. The environment in fact is one of the key asset in Trentino from a long time as this is a tourist and agricultural area. Some of the participants report that also in small countries on the mountains you can meet people with deep knowledge about, for instance, solar panels, even if they don't need this competences for their job.

For those reasons the environment is seen as a resource and local entrepreneurs use the Green theme as label and as a marketing tool. So it happens that the hotels on the most tourist areas communicate the installation of solar panel or other green heating or power systems. This caused the raise of a few communication agency focused on the promotion of sustainability.

As said before, the Autonomous Province of Trento wants to play a leadership role in this field; during the last years the local government has released several laws and incentives to promote the market related to green entrepreneurship. Furthermore, this has gone together with a sensitisation of the population to environmental issues (as waste problems, for instance). Trentino is at the second place on the list for recycling waste in Italy, but didn't developed this as an entrepreneurial activity.

FOCUS GROUP - Question 2

What works better and what works worse in the Green sector in Trentino and north-eastern Italy?

The conversation started underlining the fact that in Trentino there is a lack of private entrepreneurship partly due to the excessive presence of the local government that doesn't help the raise of a real entrepreneurial class. There is not a proper entrepreneurial attitude in the area and this has geographical and historical reasons. The adjacent regions of Veneto and Friuli-Venezia Giulia, characterised by a stronger entrepreneurial attitude, have different problems specially because of a firm market and less economical resources to invest on innovative enterprises.

There is a specific market of Green entrepreneurship that has to be developed and that at the moment is underdeveloped, the services market. During the first Focus group we said that the buildings and energies sectors are the most important green sectors in Trentino; this is also due to the relations that this sectors have been able to develop at a national and international level. The service market (car sharing, communication, etc.) are hard to rise also because of the little number of customers in the area. Trentino is a Province made by a few more than 500.000 people and the entire region with South Tirol hardly reaches 1.000.000 of inhabitants. With these numbers it's hard to create economies of scale and this represent an important limit.

If we compare Trentino with the rest of Italy, we see that here there are much more opportunities and incentives both economical and juridical. If we compare Trentino to mitteleuropean countries we see that still it's easier to build and run and enterprise. This is obviously a structural problem that involves every sector, not only the green one. Trentino developed several services and institutions to help to set up and to create networks through green entrepreneurs (Habitech, Manifattura Domani, Trentino Sviluppo); this brought an effective support to existing green enterprises, and they could also further improve their support to the freshly-born of future enterprises.

The group of people who participated to this Focus group brought on the conversation focusing on specific issues that could be faced to improve the green entrepreneurship scenario in Trentino and north-eastern Italy:

- There is the necessity to build quality standard to measure the standard of sustainability. The aim of this is try to avoid the "green washing" practice of several firms.
- Specific problem with solar panels. The incentives don't set a quality standard so people are stimulated to buy low quality and low prices panels. Those panels will have to be substituted within five years and this will create problems about the disposal of the materials.
- The development of new energy sources risk to have a bad impact on the landscape. This could have bad repercussion on the tourist side. It's fundamental to try to lower this impact.
- There is an attempt to reduce the cost of green buildings, but the grounds' cost is still high. There must be an effort from the overall system to reduce those costs and set up incentives to broad this market.
- It must be developed the networking between green enterprises to improve the attitude of Trentino to become a innovation Hub for sustainability.
- There is a need to attract people from abroad. Until now Trentino has developed a policy that preserves the people living here. We need to attract brains and ideas from

outside and to create opportunities for foreign entrepreneurs. The incentives so far created are meant to directly support the local human resources. We need to shift and to create a more internationally connected system that can bring more opportunities in the area and for the society. This can be done creating specific plans to support and invite entrepreneurs and green entrepreneurs from a worldwide perspective.

Appendix 3

SICILIAN CASE AND BEST PRACTICES

1. Entrepreneurship System in Sicily

At a first glance, the Entrepreneurship System in Sicily is characterised by a variegated scenario that is quite difficult to capture. On the one hand, it appears very fragmented, with a high percentage of private unlimited, micro and small enterprises (employing 2.88 workers on average[148]) making up the bulk of firms. On the other, it displays an unexpected dynamism and lively coping mechanisms amongst enterprises that are currently almost crushed by internal and external constraints and are struggling to survive. This dynamism is also evident amongst medium-sized companies that, despite the current economic downturn, are able to perform well, showing an innovation drive that is sometimes considered exemplary not only in Italy but also across the world[149]. However, the picture also includes big oil companies (ERG, Esso, ENI, Sasol) that extract and refine petrol mainly in the South East (Priolo, Augusta, Gela) and that are currently expanding their operations in the recently-discovered offshore oil fields between Sicily and Tunisia[150]. Another large venture, operating in Sicily since 1970 and currently almost defunct, is a production plant of Italy's leading car manufacturer (FIAT), one of the last remains of an outdated model of industrial and centrally-led economic development[151].

Sicily's current entrepreneurship landscape is roughly dominated by two different sectors: the re-launched and revitalised agro-food sector, especially in the West, Center and South East[152], and the emerging concentrated high-tech sector, present since the early 1990s in the East (the so-called Etna valley district[153]), and recently under pressure from the global financial downturn and from increasing international competition. After the 2009 crisis, the Sicilian entrepreneurial sector did not experience the recovery experienced by other Italian regions: in 2010, Sicily's GDP growth was virtually stalled, lower than 0.2%, against Italy's 2.3%[154]. Unemployment in the South of Italy is still 13.4% and figures almost reach a staggering 40% for younger (15-24 years old) individuals. With the exclusion of the oil sector, exports from the South of Italy decreased in 2010 by 10% when compared to the peak reached in 2008. In the same year, annual per capita product amounted to 13,700, a figure

148 ISTAT 2008 http://www.istat.it/it/archivio/4870

149 Examples can be found in Brevettare in Sicilia, Laura Azzolina StrumentiRes - Rivista online della Fondazione RES Anno I - n° 3 - September 2009 http://www.strumentires.com/index.php?option=com_content&view=article&id=74%3Abrevettare-in-sicilia&Itemid=12

150 http://www.pgs.com/upload/29358/Offshore_Tunisia_Fin.pdf

151 Giuseppe Berta, Termini Imerese e la crisi finanziaria StrumentiRes - Rivista online della Fondazione RES Anno II - n° 1 - January 2010 http://www.strumentires.com/index.php?option=com_content&view=article&id=112:termini-imerese-e-la-crisi-finanziaria&catid=4:economia-siciliana&Itemid=12

152 Servizio di Valutazione del Programma di Sviluppo Rurale (PSR) SICILIA 2007-2013 – Relazione di Valutazione Intermedia - December 2010 http://www.psrsicilia.it/Allegati/Valutazione/Documenti/Rapporto_Valut_Intermedia_%20REV_22_12_10.pdf

153 http://www.etnavalley.com/

154 Banca d'Italia 2011 http://www.bancaditalia.it/pubblicazioni/econo/ecore/2011/analisi_s_r/1120_sicilia

lower than in 2000. Unsurprisingly, according to a recent survey[155], 94% of Sicilian entrepreneurs consider the existing economic scenario deeply unsatisfactory. The crisis is clearly hitting Sicilian enterprises hard: 67% of interviewed entrepreneurs suffer from decreased sales, 63% from a slowing down of the repayment process and 56% from reduced investments. More tellingly, 47% of Sicilian entrepreneurs are wary of the future and only 28% predict some improvement in the economy. The main weakness of the Sicilian enterprises is, according 76% of interviewed entrepreneurs, their resistance to networking and their incapacity to scale up into an integrated system[156]. In general, comparative data shows that financial credit is more risky and much less dynamic than in the centre and north of Italy. While borrowings to families increased in Sicily, loans to companies did not experience the same increase observed in the rest of the country. In general, enterprises' indirect costs (such insurance, interest rates, and electricity bills) are higher in Sicily than in the rest of Italy. Weak governance, high inefficiency of the public sector (high investments resulting in low benefits) and the proliferation of tax evasion and of a growing shadow economy are further hampering the capacity of the public system to adequately cover the basic needs of, amongst others, economic actors. The generalised disrespect for the rule of law by vast portions of civil society and political leaders provide room for the persisting of both organised and small, unorganised crime. Mafia and corruption flourish alongside healthier components of the political and economic system and it is not always easy to clearly tell the former from the latter.

2. Green Entrepreneurship System in Sicily

According to a report published by Eurispes (the Italian Institute for Socio-Economic Studies) in 2010,[157] the Green Economy in Italy is growing. Eurispes estimated that the combined market value of renewable energies, organic products, fairly traded goods and ethical finance stood at €810 billion worldwide, €122 billion in Europe and €10 billion in Italy, with an impact on global and European consumption - respectively - of 1.2% and 8.2%. However, according to an index compiled by Fondazione Impresa (IGE, green economy index)[158], Sicily still ranks 17th when compared to the 20 other Italian regions. The IGE checks the state of the art of the Italian green economy based on 21 performance indicators collected in the main sectors of the green economy (agriculture, mobility, construction, tourism, business, energy, waste). Sicily, compared to other regions, performs well in the organic farming sector, ranking fifth in terms of number of operators (about 147 per 100,000 inhabitants) and third in terms of agricultural land destined to organic farming (16.5% of utilized agricultural area). Sicily performs well also in the production of electricity from renewable sources (eighth, with 316 kWh per capita), but drops to the bottom of the list in the areas of water management and waste collection. With regards to the production of electricity from renew-

[155] The survey has been carried out by Demopolis at the end of 2008 on a sample of 104 Sicilian enterprises selected from the Catania District.
http://www.demopolis.it/newsfocussicilia.php?subaction=showfull&id=1257265695&archive=&start_from=&ucat=23&

[156] Other hampering factors listed are the difficult relation of the private sector with both the public (53%) and the credit systems (48%), the generalised resistance of enterprises to embracing technological innovations (41%) and their overly-small size (35%). Observing the broader context, the bottleneck affecting the expansion of the entrepreneurial sector are: the lack of a sound mid-long term development policies (83%), the absence of adequate infrastructures (69%), bureaucracy (63%), lack of credit and R&D investment (40%). 37% mentioned also illegality, racket and criminality among the main problems.

[157] http://www.eurispes.it/index.php?option=com_content&view=article&id=1095:rapporto-italia-2010&catid=47:rapporto-italia&Itemid=222

[158] Green Italia - Indice di green economy e classifica delle Regioni Italiane, Fondazione Impresa, September 2010

able sources, and breaking down between the different sources (water, wind, solar, geothermal and biomass), Sicily displays the following parameters: out of 100% total production, 6.1% comes from water, 85,2% from wind, 2.0% from solar (PV) and 6.7% from biomass and 0% from geotermal sources.

Organic farming, with its 170,660 hectares of cultivated land (Sicily Regional Statistic Bureau), plays an important role in agriculture and ranks Sicily amongst the first positions (in terms of production) in Italy and in Europe, although what often happens is that significant amounts of organic products are distributed on conventional markets. There are more than 8,500 producers in Sicily involved in the organic production system, including processors. However, it should be noted that the industry - in its complexity - still has many weaknesses, mainly when products enter the final marketing stages, due to the incapacity of many producers to obtain the real value of their traditional products. Another practice with a positive environmental impact in agriculture, which plays an important role in Sicilian rural areas, is to leave cultivated land fallow; this increases soil fertility, reduces water and soil pollution, controls erosion and increases biodiversity (especially for nesting birds) within the agro-ecosystems. Interesting data emerge in the wine sector, where over 67% of Sicilian producers associated to Assovini[159] has adopted strategies to reduce their energy consumptions and one in 5 is producing clean energy. Always in the wine sector, 33% of production has some form of environmental certification and 30% has organic certification.

Sicily's ranking in the rural and eco-tourism sector is roughly in line with the average of other Italian regions, but considering recent growth trends and the policies issued by the Autonomous Region of Sicily in 2007[160], this ranking is expected to rise in the next few years. This is especially true for rural areas where farmers are facing an ongoing crisis in the conventional crops' market and are increasingly experimenting with different sources of income. Rural eco-tourism appears particularly attractive to younger generations of Sicilian farmers and this evolution is the most interesting and promising innovation in the Sicilian green economy, for its potential to become the driving force of the entire local economy. The Impact Evaluation Report Regarding the Past Structural Funds Plan (2000 - 2006)[161] shows some interesting data: the number of eco-farms has increased between 2000 to 2006 from 170 to 382 (+125%), and the availability of beds within them has increased in the same period from 1,799 to 5,140 (+185%). Also notable is the increased number of sustainable rural restaurants that has passed from 5,416 in 2001 to 15,696 in 2006. With regards to the business activities carried out by eco-farms, almost all them offer restoration services, while an increasing number of them are licensed to offer other rural tourism services, such as horseback riding, hiking, trekking, mountain biking and other sports and recreational activities. Slowly growing (from 8 in 2006, to 15 today) is the number of farms accredited for teaching activities. These are open farms that offer educational services aimed primarily at children, first grade and second grade students.

In conclusion, Sicily's green entrepreneurship system is growing in a promising manner when it comes to the agricultural, renewable energies and eco-tourism sectors. With regards to corporate social responsibility, environmental certification, sustainable mobility and water and waste management, however, Sicily is still lagging behind when compared to other Italian regions.

[159] www.assovinisicilia.it
[160] Rural Development Plan for Sicily – PSR Sicilia 2007-2013 available on www.psrsicilia.it
[161] Mid time Evaluation on the Impact of Rural Development Plan, Agriconsulting, December 2010

3. Legal framework and Investment Instruments in Sicily

Sicily is an autonomous region and therefore can issue laws and regulations related to important matters such as education, health and infrastructure, while more relevant issues and matters pertaining to constitutional law fall under the State's jurisdiction. Amongst all of Europe's regions, Sicily is one of the main beneficiaries of European Structural Funds and of national funds for development. Over €15 billion[162], out of the total funds earmarked for the European cohesion policy 2007-2013, are dedicated to the development of Sicily, including support to industries, culture and the environment. At least half of it is to be spent in sustainable development (including fisheries, SMEs innovation, natural and cultural resources, agriculture). Normally these contributions cover up to 50% of the total costs of projects presented by SMEs and up to 75% of those presented by public entities.

The most relevant documents and corresponding legislation regarding the financial instruments devoted to sustainable development are:

- The PSR 2007-2013 Rural development Plan[163];
- The PO FESR 2007-2013 Operational Program European Fund for Regional Development[164];
- The FAS National Development Funds for South of Italy[165];
- The PO CBC Italy-Malta[166] and Italy Tunisia[167], the cross border co-operation programs with Malta and Tunisia);
- The POIN and PAIN Integrated National Inter-regional Programs for renewable energy and energy saving - Cultural and naturalistic attractors[168] and tourism;
- The PEARS Energy and Environmental Plan of the Sicilian Region[169]
- The Conto Energia - the so called national 'energy account'[170] (see paragraph 3)

The Cultural and Natural Preservation and Enhancement Policy seeks to transform the local resource allocation (in terms of culture, nature and landscape, which is currently underused) into an opportunity for citizens and businesses, through the activation of new supply chains linked to cultural and environmental resources and the creation of cultural activities in connection with Sicily's tourism policy, included in a framework of socio-economic and environmental sustainability. The PO FESR aims to strengthen the strategy to support the promotion of research and innovation, focusing interventions in areas of high potential (mainly hi-tech), developing co-operation between public and private sectors and promoting actions accompanying innovation also in view of the inclusion of a regional system of research within international networks. In particular, the intent is to promote knowledge networks, enhancing the skills of production systems in the field of research and innovation and facilitating dissemination of information and communication technologies.

The environmental policy's main objective is to strengthen regional actions to reduce waste production, promote as much as possible reuse, recycling and the adoption of materials that do not harm the environment, and increase energy consumption from renewable sourc-

[162] DUP Sicilia, Unitary Plan Document of Sicilian Regione, June 2010, available on www.euroinfosicilia.it
[163] www.psrsicilia.it
[164] http://www.euroinfosicilia.it/Default.aspx?tabid=156
[165] http://www.regione.sicilia.it/bilancio/
[166] www.italiamalta.eu
[167] www.italietunisie.eu
[168] www.euroinfosicilia.it
[169] http://pti.regione.sicilia.it/portal/page/portal/PIR_PORTALE/PIR_LaNuovaStrutturaRegionale/PIR_AssEnergia/PIR_DipEnergia/PIR_PianoEnergeticoAmbientaledellaRegioneSicilianaPEARS
[170] http://www.gse.it/attività/ContoEnergiaF/Quadro%20Normativo/decreto.pdf

es. Considerable space is given both to the production line in the field of energy technologies and to actions to support an increase in energy savings, including sustainable mobility. The main focus of the Energy Plan (PEARS) is to develop renewable energies and encourage funding sources to reduce and mitigate the impact of fuel production from polluting sources[171], through actions on tax policies and CO2 abatement, and to improve the behaviour of companies that pollute, for example by studying compensatory measures such as reforestation, sea water cleaning, and the creation of urban parks.

Finally, the regional strategy for agriculture aims, on the one hand, to strengthen the productive system and to re-launch its competitiveness, on the other hand to better integrate territorial, economic and social components, and develop multifunctional roles for Sicily's agriculture. The program also encourages the adoption of integrated design paths intended to promote more structured interventions and economies of scale through the combined use of multiple measures and / or the grouping of multiple beneficiaries, especially in the areas of rural eco-tourism and of organic production.

4. Sectorial outlook in Sicily

a) Food and Sustainable agriculture: organic productions, education, bio market, slow food, solidarity purchasing groups (G.A.S.[172])

As already pointed out, organic and bio-dynamic production is probably the most advanced sector in Sicily's green economy. Olive oil, wine, fruit and vegetables, cereals, cheese and meat are the main products to reach the national and international markets. World statistics agree in pointing to the fact that, despite the financial crisis that has affected the food sector, the market for sustainable and organic produce is growing, because of a diffused understanding among consumers that a sustainable lifestyle begins - first and foremost - at the table. Many opportunities for Sicilian entrepreneur are still unexplored, mainly in logistics, distribution and services. Only South-Eastern parts of Sicily (especially the province of Ragusa) can be considered a cluster with 'European' standards in organic farming along the entire production chain (cultivation, logistics, distribution and services). The internal sustainable market is also growing, although a lot more could be done in the field of education and awareness raising of potential consumers. Solidarity purchasing groups[173] that prioritise locally-sourced and low-carbon emitting produce are emerging in most areas of Sicily, and the number of organic and farmers' markets continues to grow (see "a fera bio" case study annex). Over the last 10 years, several Sicilian traditional producers were admitted to the prestigious Slow Food Movement Association and a number of educational farms for children are developing throughout the island[174].

[171] The oil refining that takes place in Sicily makes up 40% of the entire nation, and of the 17 Italian oil refining facilities 5 are based in Sicily

[172] G.A.S. is an acronym for the Italian expression 'Gruppi di Acquisto Solidale', a typical Italian phenomenon that was born in the Emila-Romagna region. Usually, a purchasing group is set up by a number of consumers who co-operate in order to buy food and other commonly used goods directly from producers or from big retailers at a discounted rate. When a purchasing group doesn't just search for the cheapest rate, but puts people and environment before profit, the group becomes a solidarity purchasing group. A solidarity purchasing group chooses the products and producers on the basis of their social and environmental standard and this leads to locally-sourced, organic products and fairly-trade goods.

[173] http://www.gas-sicilia.it

[174] http://www.bimbiinfattoria.com/fattorie-didattiche-sicilia.php

b) Eco tourism, rural tourism, naturalistic and responsible tourism

Sicily's natural landscape is renowned all over the world, and as already mentioned above, an increasing number of farms traditionally devoted to agriculture has chosen to diversify its income by testing new sustainable business ventures, including eco-tourism, although their quality is not always up to international standards, especially when looking at UNEP's criteria for sustainable tourism[175]. An interesting development associated to eco-tourism and to the agricultural sectors in Sicily is the growing willingness by many of its leading entrepreneurs to fight mafia, corruption and crime by launching new ventures that use assets (often land) confiscated from convicted criminals[176] or by organising special visits to farms and firms that are "pizzo free" (do not pay protection money to criminal organisations)[177].

c) Waste management

Differentiated waste collection in Sicily is lower than 10% and most authorised landfills are overflowing and in a state of emergency. On the other hand several municipalities (mainly small towns) have self-organised into an association (the Club of virtuous municipalities) and are innovating their waste collection policies by learning best practices from each other[178], while several civic movements are actively promoting a culture of recycling. The most relevant network in this area, 'rifiuti zero' (zero waste), has observed that Sicily's poor performance in waste management is not due to technological backwardness but only to education, organisation and industrial strategies[179].

d) Water management

Recent data[180] on the quality of water in Sicily are dramatic: 30% of rivers, of coastline waters, of groundwater and of natural and artificial lakes are in bad conditions. In order to improve the status of water resources in Sicily, cultural, regulatory and technical requirements have to be brought up to the standards of EC directive n. 60/200. The 1994 'Galli' national law of 1994 ushered in an era of water management privatisation, the results of which are far positive: rising costs, inefficient management, loss of water, administrative deadlock. Several civic and national movements[181] embarked on a campaign that collected over 1.4 million signatures and led to a national referendum to revise the law. On an island with a very high risk of desertification, a sustainable and non-speculative approach to water management is paramount for Sicily's future development.

e) Renewable energy production

Sicily suffers for its insularity, which means - in terms of electricity like in many other areas - it is cut off from the mainland. Electric energy bills can be up to 50-100% higher than in the rest of the country and most energy produced on the island comes from fossil fuel-powered electrical plants that are extremely harmful to the environment. On the other hand, Sicily -

175 http://new.gstcouncil.org/
176 http://www.ilgustodiviaggiare.it
177 http://www.addiopizzotravel.it/
178 http://www.comieco.org/Mondo_Riciclo/Club_comuni_virtuosi/
179 Fa la cosa giusta, edizione Sicilia, libri.terre.it, 2011
180 Decreto Legislativo (national law) 152/06 http://www.fondazioneimpresa.it/archives/1137
181 http://www.acquabenecomune.org/raccoltafirme/

with its 1,449 MW of production and its 1,245 turbines - is the Italian region that produces most energy from the wind, followed by Puglia (1,291 MW), Campania (915 MW), Calabria (770 MW), Sardinia (673 MW), Molise (372 MW) , Basilicata (279 MW) and Abruzzo (225 MW)[182]. Major industries operating in the renewable sector have recently been established in Sicily, such as 3SUN (Italy's biggest producer of photovoltaic panels) and Moncada Energy Group[183]. Anev (the National Association for Wind Energy) estimates that in 2020 the employment market could benefit from the creation of 7000 new jobs in the wind energy sector alone. Forecasts in the photovoltaic sector are equally promising.

f) Housing and bio-architecture, green houses and tree nurseries

As pointed out in section 3, Sicilians - like the rest of Italians - have started switching towards more sustainable behavioural norms and lifestyles in their day to day life. Recent national legislation has prompted public administrations and private actors to increase the energy efficiency of buildings and have offered special incentives to promote this strategy. Most public schools can benefit for instance from a dedicated incentive to set up solar panels on their rooftops[184]. Even if Sicily has not taken full advantage of this incentive and the percentage of requests to upgrade the energy efficiency of buildings is 6.7% lower than Italy's 32% average (Istat/Enea 2008), a growing number of engineers and architects in the region are acquiring certification to use sustainable practices in the restoration and construction of buildings and in the development of the island's landscape[185]. The presence of specialised eco-furniture suppliers and of tree nurseries dedicated to Mediterranean plants - which typically require less water to survive in public and private gardens - is also on the rise.

g) Sustainable mobility

With over 3 million cars and 600,000 motorcycles, the number of vehicles in Sicily is the third highest in the country, after Lombardy and Lazio. Sicily also displays the lowest rates in terms of cycling routes and public transportation vehicles (Enea/Istat/Aci 2009). There in no strategic integration between railways and the road network, and parking areas have not been planned in relation to the public transport system. As a result, newly-constructed parking lots remain empty while city centres are constantly congested. This is a direct consequence of poor strategic vision and planning inefficiency on behalf of policy-makers. On the other hand, Sicily is the Italian region with the longest railway network (800 km), most of which is actually decommissioned. An interesting project to create green-ways[186] has already been approved by the Sicilian Regional Authority[187], and most major cities are seeing the rise of civic movements to promote new forms of sustainable mobility, such as bike sharing, car pooling and car sharing[188].

[182] ANEV (National Association wind energy), 2010
[183] http://www.3sun.com/ and http://www.moncadaenergygroup.com/index.php
[184] http://www.minambiente.it/home_it/menu.html?mp=/menu/menu_attivita/&m=Educazione_Ambientale.html&lang=it
[185] http://www.o2italia.org/HOME.html
[186] http://www.lafrecciaverde.it/?p=1267 and http://www.ferrovieabbandonate.it/
[187] http://www.mobilitapalermo.org/mobpa/2010/04/30/le-greenways-siciliane/
[188] http://www.mobilitapalermo.org/

Case studies

The following case studies have been analysed and should be read as experiments in green entrepreneurship rather than clear examples of best practices.

Name	**Consorzio Le Galline Felici**
Sector	Bio-commerce
Location	Catania
Description	The Consorzio is one of the most active 'GAS' groups recently founded in Sicily. The GAS – Gruppi di acquisto solidale (Solidarity Purchase Groups) were a response to the need for a profound change in our lifestyles. Like all critical consumer experiences, this one wants to put into the market a "question of ethics", and direct it towards an economy that values people and relationships. Organised as a network that directly connects consumers and produce, the GAS are able to reduce price, increase quality and promote a series of side activities on awareness and development of green and sustainable consumption
Contact	http://www.siqillyah.com/index.php/legallinefelici

Name	**Comitato "Fa la Cosa Giusta!" (do the right thing!)**
Sector	Information for the promotion of sustainable economy and responsible behaviour
Location	Palermo/Sicily/Italy
Description	Fa' la Cosa Giusta Sicily aims to spread consumption and production best practices throughout the island, creating events that communicate the values of social economy and enhance the specificity and excellence of the region, networked and in synergy with institutional structures, associations and local business. The Sicilian movement includes 14 Sicilian promoter organisations affiliated with the Italian movement born in Milan in 2004 and promoted by the publishing house Terre di Mezzo. In 2011 Terre di Mezzo and Fa' la Cosa Giusta – Sicilia published the first edition of the Sicilian guide to critical consumption.
Contact	http://falacosagiusta.terre.it

Name	**Banca Etica**
Sector	Credit and Finance
Location	Sicily/Italy
Description	The idea behind Banca Etica involves creating a place where savers who want more transparent and responsible management of financial resources can meet socio-economic initiatives inspired by the values of sustainable social and human development. The bank manages savings raised from individuals, families, organisations, companies and institutions and invests them in initiatives pursuing social and economic objectives, operating with respect to human dignity and the environment. In this context Banca Etica sets out to educate both savers and borrowers by increasing the awareness of the former about their savings' destination, and encouraging the latter to develop their management and entrepreneurial abilities. Banca Etica does not set out to reject the basic rules of finance, but rather seeks to reform its main values. Founded in 1999, Banca Etica has 4 representatives in Sicily.
Contact	www.bancaetica.com

Name	**Gli Aromi**
Sector	Plant nursery
Location	Ragusa
Description	For over 10 years the Russino Family's Gli Aromi has been producing and marketing medicinal and aromatic herbs, focusing on species native to the coast of Sicily - in particular the band Iblea. The company produces more than 150 different varieties using traditional methods. The farm creates olfactory pathways and organises tastings and guided tours for guests. In addition to selling pot plants or fresh packed herbs for haute cuisine, they provide herbs for the creation of ornamental gardens and terraces.
Contact	http://www.gliaromi.it/

Name	**Carretta caretta – smaltimento rifiuti**
Sector	Solid waste management
Location	Syracuse
Description	Carretta Caretta is committed to solving the problem of waste collection and separation without using static bins. Instead, it uses small vehicles as 'mobile bins'. These vehicles, known as 'carts', are positioned on certain days and times in different areas of the city so that people can dispose of their waste. Each cart takes a particular sort of refuse, depending on an overall recycling plan. The main objective of this project is to avoid the visual and olfactory pollution of bins or rubbish bags abandoned on the street for curbside collection. The system has clear environmental advantages and is opening the way for an effective plan for waste recycling.
Contact	www.amanilibere.it/Home.html

Name	**Festival Energie Alternative**
Sector	Awareness of sustainable energy
Location	Palermo/Sicily
Description	Festival Energie Alternative aims to create a community of companies, associations, organizations and artists who meet throughout the year to spread both the culture and practical applications of renewable energy.
Contact	www.festivalenergiealter-native.org

Appendix 4

SUPPORT ORGANIZATION AND INTERMEDIARIES

Support Organizations and Intermediaries

There are several organisations in Italy that support firms in their daily activities and help them to internationalise. Due to the impact of globalisation on the productive system, internationalisation has over the course of recent decades become one of the main targets of Italy's industrial policy. The most important of these support organisations are listed below:

Chambers of Commerce: In line with its civil law system, Italy's Chambers of Commerce (Camere di Commergio, Industria, Artigianato e Agricoltura[189]) are public agencies. Firms are legally required to register when they start-up (Registro delle Imprese). Their main function is to support the development of firms at all levels, although recently they have been given an arbitrage function in controversies. Chambers of Commerce are based at a local level in Italy's provinces, and at the national level in Unioncamere[190]. At this national level, enterprises are supported in the implementation of corporate social responsibility (CSR) practises[191]. Depending on the region, Chambers of Commerce can be a very effective support organisation for enterprises (for example, in Milan www.mi.camcom.it/).

Italian Foreign Chambers of Commerce: the Italian Government recognises Foreign Chambers of Commerce[192], which are private associations of entrepreneurs and professionals, both Italian and non-Italian. They provide contacts, information and monitor international markets for those firms that have internationalised their business activities.

ICE – Istituto Nazionale per il Commercio Estero: the ICE (Istituto Nazionale per il Commercio Estero)[193] is a Government agency with a mission to foster economic and trade development for Italian enterprises abroad, especially small and medium-sized ones. It was established in 1926, reformed in 1997 and its closure has been recently discussed. It is based in Rome but has 17 branches in other Italian cities and 115 branches in 88 countries abroad.

Italian Embassies Abroad: the economic diplomacy of the Italian Ministry of Foreign Affairs (MoFA) means it is engaged in supporting and fostering the internationalisation of Italian enterprises. In particular, the MoFA aims at aggregating business communities and networks of firms across the international arena. Information is provided to firms through country reports prepared with the ICE and newsletters[194] prepared in collaboration with the financial news agency 'Il Sole 24 ORE Radiocor', which belongs to the main Italian economic newspaper Il Sole 24 Ore.

[189] www.camcom.gov.it
[190] www.unioncamere.gov.it
[191] www.csr.unioncamere.it
[192] www.assocamerestero.it/camere
[193] www.ice.gov.it
[194] www.notiziariofarnesina.ilsole24ore.com

Euro-Info Centres: Euro-Info Centres[195] support SMEs willing to develop their business in the European Union in all of the 24 Italian regions. Established by the European Commission in 1987, the EIC network co-operates with the European Commission in public consultations to establish guidelines for the development of new European business policies and legislation.

SACE (Società Assicurativo-finanziaria per il Commercio Estero): SACE[196] is a specific agency that provides insurance to Italian firms trading and investing abroad. It also provides factoring services and helps enterprises to ensure payment for goods and services provided to the Public Sector, which in Italy is notoriously slow at paying its suppliers.

SIMEST (Società Italiana per le Imprese all'Estero): SIMEST[197] is a financial company whose majority share is owned by the Government and whose institutional remit is to provide long term financial credit to enterprises operating internationally. SIMEST is currently providing export credits and financial support to foreign investment projects.

ITPO Italy: The Italian Investment and Technology Promotion Office (ITPO)[198], based in Rome, was created in 1987 following an agreement between the Italian Government and UNIDO, the United Nations Industrial Development Organisation. ITPO Italy supports industrial co-operation with companies in developing countries, and supplies services for investment projects (scouting industrial partners, supplying technical assistance for industrial projects, etc.).

Regional Agencies for economic development: Due to its strong regionalism there are many local development agencies in Italy, each with different competences and responsibilities. A selection of these include:
ARUSIA - Umbria Region - www.arusia.umbria.it
ARSIA - Tuscany Region - www.arsia.toscana.it
ERVET - Emilia-Romagna Region - www.ervet.it
IRVAT - Campania Region - www.irvat.eu
Sviluppo Italia Molise - www.sviluppoitaliamolise.it

ENIT[199] (National Tourist Agency), founded in 1919, is the Government agency responsible for promoting Italy - the 5th world destination in terms of number of international visitors - as a tourist destination. It also promotes the overall image of the national tourism industry and supports its marketing activities. ENIT serves two groups of clients: on the one hand Italian and foreign tour operators, on the other travel agencies and individuals planning Italian holidays.

INIVITALIA - Run by the Italian Government (its sole shareholder is the Ministry of the Economy), INVITALIA's[200] mission is to promote local development and innovation, helping national as well as foreign investors to successfully implement their investment projects in Italy. It provides investors from all sectors with a wide range of services, which are confidential, free of charge and 'tailor-made' to suit each business stage (pre-investment, business start-up and after-care).

[195] www.euroinfocentre.it/viewpages.asp?lang=eng&area=3
[196] www.sace.it/GruppoSACE/content/it/consumer/products/
[197] www.simest.it/frameset.asp
[198] www.unido.it/eng/about
[199] www.enit.it
[200] www.invitalia.it/site/ita/home

BIC - Launched in 1984 by the European Commission, the Business Innovation Centres (BIC) provides entrepreneurs with services to foster innovation and support local development. They belong to the EBN (European Business & Innovation Centre Network) and have regional branches across Italy[201].

[201] see for example www.biclazio.it

Appendix 5

ENVIRONMENT RELATED LEGISLATION

Environment Related Legislation

The discipline of the Government of the environment, specifically, relates to a multitude of "sub": housing, urban, landscape; certification, compensatory rules, firms pollution; ground state property, forest/woodland and forest fires, forecasting, prevention and interventions for the protection of soil, natural disasters, parks/protected areas, coastal protection, desertification air and water pollution, waste management. Many of these domains are governed by specific rules (consider, for example, Legislative action 22 January 2004, Nr 42 - Code of cultural heritage and landscape or Institution of parks and reserves framework law in 1992), some of which have recently been governed by Law of 3 April 2006, Nr 152 (entitled "Environmental Standards"), which has reshaped environmental related rules and replacing many of the existing environmental standards.

The Legislative Decree 152/2006 regulates:

- Environmental impact assessment and strategic environmental assessment;
- Soil conservation and water protection;
- Waste management (including packaging) and remediation of contaminated sites;
- Air protection and reduction of emissions into the atmosphere;
- Compensation for environmental damage.

Energy Related Legislation

The European Union has set an energy policy that encourages Member States to increase the use of renewable sources and reduce fossil fuels, to make the EU less dependent on traditional sources of energy, almost entirely imported from third countries.

Through the 20-20-20 climate and energy package the EU requires Member States to reduce emissions by 20% of greenhouse gases, up to 20% from renewable sources of energy dependency and increase energy savings of 20%.

European obligations imposed Italy are the least stringent: in 2020 Italy will have to depend for 17% of renewable energy sources. According to the GSE[202] (Italian National Company for Services in the Renewable Energy sector), however, this goal will not be achieved in 2020 and Italy will have to import from abroad, probably 10 TWh of "green energy".

On the basis of the obligations and EU Directives, Italy in recent years have witnessed the liberalization and development of the national energy market, and several measures to improve energy efficiency in buildings, the requirements for safety and emissions reduction paid by operators of power from fossil fuels, the incentive policies for the renewal of obsolete machinery and appliances with more efficient equipment.

[202] http://www.gse.it

The field of renewable energy[203], thanks to a policy of generous incentives, over the past 3 years has taken off, both in terms of facilities installed and in terms of capacity generated.

National guidelines for authorizing the construction of the facilities have been launched September 10th, 2010, and from the 1st of June 2011 is in force a fourth account energy, while the Legislative Decree 28/2011 in Italy has transposed the new EU directive on renewable energy sources (2009/28/EC) dictating also the future framework for incentives starting in 2013.

The National Energy Plan on renewable energy was presented to the European Union in June 2010, while the national plan on energy efficiency is currently under discussion.

National policies on energy should not include more nuclear power, which, after the referendum of June 2011 was expelled finally from the Italian political agenda.

The development of power facilities has also a significant environmental impact. The balance between the need of energy and respect for the land and the impact on the environment are constantly to the attention of traders.

Industrial Related legislation

Compensation for environmental damage. Environmental damage means (Article 300 of Legislative Decree 152/2006) any deterioration in significant and measurable, direct or indirect, of a natural resource or utility it provided. All those who operate or control a business of a professional nature which may have an impact on the environment have specific obligations in the event of damage, whether realized or potential, causally explicable by their conduct, including those of the authorities inform the public reference, take the necessary preventive and remedial. The responsibility for the damage caused to the environment (Article 311 of Legislative Decree 152/2006) coincides with the obligation by the same author, restore the previous situation and, failing that, compensation equivalent to compensation in respect of was.

In order to obtain compensation in a specific form or equivalent, the same law gives the Environmental Ministry of the Environment the power to exercise legal action both civil and criminal, as well as smoother power to issue an order immediately enforceable by which is enjoined to responsible environmental restoration as compensation in the form within a specific deadline.

Safe work environment. Since 2008 the new national standards on safety at work are represented by the legislative decree 9 April 2008, No 81. The new measure (better known as “Unique Text” on Safety at Work) replaces the previous rules protecting workers, stratified by the ‘50s to today.

Packaging. The Law issued on April 3, 2006, Nr. 152 (entitled “Environmental Standards”) rewrites, parallel to the waste legislation, the one on the management of packaging and packaging waste. In particular “Part Four”, Articles 217 to 226 “Rules on waste management and remediation of contaminated sites”.

[203] http://www.nextville.it is a very updated web site on renewable energy in Italy

Transport and Mobility. The field of transport, in particular substances or dangerous goods, is understandably linked hand in glove with the environmental issue. We must first specify that certain measures, however, relevant and related to the theme “Transport”, are very much linked with other matters: as an example all the rules regarding air pollution caused by traffic accidents are normed in the above mentioned Law 152/2006 or even those that protect the marine environment from the problem of so-called” ships of shame in the “water” section of the same legislation. Italy takes part to Marco Polo Project, launched by the European Community by Council Regulation (EC) No 1382/2003. This is a financial instrument aiming to reduce road congestion, including through the funding of other viable routes, particularly rail and navigation.

It thus attempts to encourage the transfer of freight to rail, inland waterways and, more recently, short sea shipping, the assumption that the barriers for the different forms of transport than road are numerous, and (at least in large part) can not be resolved by individual states themselves.

Quality certification. The environmental policy provides tools designed to foster greater environmental awareness by business sector. These include environmental certification systems. Some of them are now mandatory to start up a business in Italy, and some are on a voluntary base.

Mandatory certification are related to

- Integrated Pollution Control
- Waste and pollution
- Management policies for water
- Energy efficiency
- End-of-use of electrical and electronic equipment and vehicles
- Packaging
- European Register of chemicals products
- Elimination (of toxic substances for electric and electronic devices)
-

The voluntary mechanisms are intent to enable environmentally friendly structures to obtain a eco-label that certifies the quality of their production processes (environmental label business EMAS) and their products (environmental product label ECOLABEL).

APPENDIX 6

FINANCIAL INCENTIVE AND RESOURCES

Financial Incentives and Resources

Financial incentives and resources for environmental protection and sustainability come mainly from National or European funds. All programmes financing the sector are coordinated by the Italian Ministry for the Environment, Land and Sea in collaboration with the Ministry for Economic Development. In addition, the Ministry for Environment, together with the **Ministry of Economic Development** has a dedicated fund to sustain EMAS and ISO quality certification for small and medium enterprises (under Law nr. 2230/2003).

The LIFE programme is the EU's funding instrument for the environment. The general objective of LIFE is to contribute to the implementation, updating and development of EU environmental policy and legislation by co-financing pilot or demonstration projects with European added value. In 2011, Italian partnerships have submitted 48 proposals under Life Natura and 22 under Life Biodiversity.

A new a new Action Plan, the Eco-innovation Action Plan (EcoAP) has been launched by the Commision on the 15 December 2011 (COM(2011) 899 final), as part of Europa 2020 Innovation Union and Resource Efficiency Flagship Initative.

The previuos Action Plan for Environmental Technologies (ETAP), was adopted by the European Council in March 2004, aims to catalyze environmentally friendly technologies in order to reduce pressures on natural resources. The actions proposed fall into three main categories:

- Moving from research to market: actions improving the innovation process and moving inventions from laboratories to the market
- Improving market conditions: actions aiming at encouraging the market uptake of environmental technologies and providing positive incentives such as regulatory frameworks, voluntary schemes access to finance and green procurement
- Acting globally: actions supporting environmental technologies in developing countries, and promoting foreign investment

The programme responds to several obstacles that have slowed the development and diffusion of environmental technologies in recent years. These include the complexity of transitioning to innovative technologies, pricing policies that have favored less environmentally friendly solutions, the difficulty of accessing funding for technological upgrades, and a lack of awareness amongst consumers and producers.

Therefore EC has adopted the use of a combination of financial instruments, ranging from economic incentives, to subsidies to venture capital, in order to promote environmental technologies. For the programming period 2007-2013, the Commission has undertaken a number of initiatives to encourage SMEs to improve their capacity to develop and adopt co-innovative technologies. For example, the Framework Programme for Competitiveness and Innovation (CIP) promotes environmental technology via three sub-programmes:

1. Entrepreneurship and Innovation Programme (EIP)
2. Support programmes for policy information and communication technologies (ICT-PSP)
3. Intelligent Energy - Europe (IEE)

The last of these has been particularly important in Italy. For example, the Renewable Energy and Energy Saving Programme POI 2007-2013 is the result of intensive consultation between the Ministry of Economic Development (MISE), the Ministry of Environment (MATTM), the Italian Regions Objective 'Convergence' (bringing together Calabria, Campania, Puglia and Sicily), as well as a large socio-economic partnership (such as major stakeholders in the renewable energy industry, representatives of environmental groups, etc.). The programme's objective is to increase the proportion of energy consumed from renewable sources and to improve energy efficiency. It also seeks to promote opportunities for local development, to integrate the system of incentives provided by other policies, and to emphasize the links between renewable energy production, efficiency, and local economic welfare. Both public and private sectors can submit project proposals under this programme, which has financial assets of about 1.6 billion euros for 2007-2013, of which 50% co-financed by the European Union - ERDF, with the rest coming from the Italian State.

Starting from March 2012 the Kyoto revolving Fund is operational (www.cassaddpp.it), to finance measures for achieving the Kyoto Protocol's objectives in particular to develop and enhance the use of high-efficiency industrial motors and the production of electricity heat and refrigeration via small-cogeneration facilities with high-performance distribution. The fund has been realized with the collaboration amog Ministry of Environmment, Cassa depositi e Prestiti (National Savings and Loans financial instrument for Public Entities) and the Italian Banking Association.

One example of this programme's impact is Conto Energia, an incentive programme that was created with the aim of supporting the dissemination of PV in Italy. The programme has enjoyed impressive growth rates since it was begun in 2005. The third edition of the incentive system was in force from 1 January 2011 to May 31, 2011. The fourth edition will run from 1 June 2011 to 31 December 2016. Data released by the GSE (31 October 2011) shows that since 2005 over 290,000 new plants were installed in Italy, producing over 11.200.000 KW of power. Conto Energia represented a sophisticated incentive for renewables in Italy, compared to classic grants awarded before. The mechanism underpinning the energy account is similar to a loan, as it does not offer a State grant. The owner of the PV system receives money on an ongoing basis, typically once a month, for the first 20 years of the investment. A prerequisite to receiving the loan is that the system is connected to the grid. The nominal size of the photovoltaic system must be greater than 1 kW. Any surplus energy produced (calculated at the end of the year) can be sold back to an operator. In this case a VAT number for private firms or individuals is mandatory. The fee for those admitted to the incentives from 2007 is based on the previous year, with a reduction of 5% a year. This initiale rate is then fixed for 20 years. The beneficiary receives 0.445 / kWh by the GSE for the surplus electricity produced. After offsetting the initial investment, a plant is usually able to generate resources 11 years after being installed.

The Operational Plan ERDF European Regional Development Fund 2007-2013 aims to promote research and innovation, focusing on areas of high potential (mainly hi-tech), developing co-operation between the public and private sectors, and aiming to integrate the regional system of research with international networks. The intent is to promote knowledge networks, enhancing the skills of production systems in the field of research and innovation and facilitating dissemination of information and communication technologies. OP ERDF is

co-financed by EU and structured in several actions referred to SME,s, tourism sector, culture, urban development, infrastructure, environment and natural spaces, leglity and safety, R&D, mobility. Each action has different potential beneficiaries (SME, cultural association, NGO's, municipalities, Universities, etc) and dedicated amount of grants, established in percentage to the needs shared by each region with the European Commission during the programming phase. Depending on specific criteria (unemployment rate, Pro Capita GDP, etc) a certain co-financing rate is allocated to each region and each beneficiary. Sicily, for instance, can disburse up to 75% of grants to SME's and up to 100% to public entities. Each action grant is disbursed with public call for tenders or public procurment.

The RDP 2007-2013 Rural development Plan for agriculture aims, on the one hand, to strengthen the productive system and to re-invigorate its competitiveness, and, on the other hand, to better integrate territorial, economic and social components, and to develop multifunctional roles for Sicily's agriculture. The programme also encourages the adoption of integrated design paths intended to promote more structured interventions and economies of scale through the combined use of multiple measures and / or the grouping of multiple beneficiaries, especially in the areas of rural eco-tourism and of organic production. The RDP is co-financed by EU and structured in several actions referred to forstry, organic, quality certification, productive diversification, etc, Each action has different potential beneficiaries (individual farmers, farms, co-operatives, forestry firms, agro-industry, agro-tourism, municipalities, etc) and dedicated amount of grants, established in percentage to the needs shared by each region with the European Commission during the programming phase. Depending on specific criteria (unemployment rate, Pro Capita GDP, etc) a certain co-financing rate is allocated to each region and each beneficiary. Sicily, for instance, can disburse up to 75% of grants to farms and up to 100% to public entities or regional research center for agricolture. Each action grant is disbursed with public call for tenders or public procurment.

The Cross border cooperation programmes within European borders and with neighboring countries have specific objectives related to sustainable tourism, renewable energies, enhancement of cultural landscape. Today Territorial Cooperation under the choesion policy, includes:

- 52 cross-border co-operation programmes[204] along internal EU borders. ERDF contribution: €5.6 billion
- 13 transnational co-operation programmes[205] cover larger areas of co-operation such as the Baltic Sea, Alpine and Mediterranean regions. ERDF contribution: €1.8 billion.
- The interregional co-operation programme[206] (INTERREG IVC) and 3 networking programmes (Urbact II, Interact II and ESPON) cover all 27 Member States of the EU. They provide a framework for exchanging experience between regional and local bodies in different countries. ERDF contribution: €445 million.

Along these financial instrument since 2007 also the European Neighborhood Policy[207] is helping regions of both side of the Mediterranean area to share common challenges trough a wider partnership including, for the first time, non-european partners.

[204] http://ec.europa.eu/regional_policy/cooperation/crossborder/index_en.htm
[205] europa.eu/regional_policy/cooperation/transnational/index_en.htm
[206] http://ec.europa.eu/regional_policy/cooperation/interregional/index_en.htm
[207] http://ec.europa.eu/europeaid/where/neighbourhood/overview/index_en.htm

Incentive Program	Description	Web Site
LIFE	Contribute to the implementation, updating and development of EU environmental policy and legislation by co-financing pilot or demonstration projects with European added value	http://ec.europa.eu/environment/life/
ETAP	Action Plan for Environmental Technologiesaims to catalyze environmentally friendly technologies in order to reduce pressures on natural resources	http://ec.europa.eu/environment/etap/
EIP	Entrepreneurship and Innovation Programme	http://ec.europa.eu/cip/eip/index_en.htm
ICT-PSP	Support programmes for policy information and communication technologies	http://ec.europa.eu/information_society/activities/ict_psp/index_en.htm
IEE	Intelligent Energy - Europe	http://ec.europa.eu/energy/intelligent/
POI Energia 2007-2013	Renewable Energy and Energy Saving Programme	http://www.poienergia.it/
Conto Energia	Loans for private PV installment	http://www.gse.it/attivita/ContoEnergiaF/Pagine/default.aspx
PO FESR 2007-2013	Regional Operatinoal Programmes co-financed by ERDF European Regional Development Fund 2007-2013	http://ec.europa.eu/regional_policy/archive/funds/feder/index_it.htm
RDP 2007-2013	Regional Rural Development Policy cofinanced by the European Agricolture Fund for Ruran Developmenet	http://ec.europa.eu/agriculture/rurdev/index_en.htm
CBC	Cross Border Cooperation programs, along internal EU borders and maritime borders within 150 NM	http://ec.europa.eu/regional_policy/cooperation/crossborder/index_en.htm
TCP	Transnational Cooperation Programs, covers mainly Baltic Sea, Alpine and Mediterranean regions	http://europa.eu/regional_policy/cooperation/transnational/index_en.htm

ICP	Interregional Cooperation Programs cover all 27 Member States of the EU. They provide a framework for exchanging experience between regional and local bodies in different countries	http://ec.europa.eu/regional_policy/cooperation/interregional/index_en.htm
ENPI	European Neighborhood Policy helping regions of both side of the Mediterranean area to share common challenges trough a wider partnership including, for the first time, non-Europeans partner	http://ec.europa.eu/europeaid/where/neighbourhood/overview/index_en.htm

Appendix 7

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