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Sustainable conversion sector in Italy

Report prepared by

A SUD

Lucie Greyl and Chiara Vestrini

Approved by: Lucie Greyl

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1. Overview of the conversion sector in Italy

The idea of an "ecological conversion" - a term introduced in 1984 in the public debate by Alex Langer - is becoming a key aspect and a possible solution to deal with the crisis that we are facing. Ecological conversion is a term that has a subjective side, ethical and personal and an objective side, social and structural. It refers primarily to the change of our lifestyles, our way of consuming, the way we work and the purpose for which we would like to work, our relationship with others and with the environment. The "conversion" is environmentally friendly because it takes into account the limits of our environment: limits which are essentially temporal; either because they deal with the fact that we are mortal beings and we are living in a world that will last also after our death, and for this reason they reach the deepest core of our existence; both because they remind us that we cannot consume in a given time more than what nature is able to produce; nor pollute the environment more than it can regenerate.

The ecological conversion today requires the identification of new economic models and define new sector in the labour market.

The so-called green economy thus becomes not only a scenario of transition, innovation and development of technology and skills but a real opportunity to overcome the crisis.

To be effective the ecological conversion has to deal with two issues: on one hand it has to address the structural conversion of the productive system to reduce the over exploitation of natural resources (produce less and better, use less materials; use longer the products and waste less as well as recovering everything that has been discarded) and, above all, to reduce the exploitation of the human being, animals and ecosystems living on the Earth. On the other hand, the conversion involves the change of our lifestyle, through the reduction of our consumption and a change in the way of consuming fostering models that improve local production and social relations. In this process there is the need to activate a double process: top-down and bottom-up.

From the top, it is necessary to raise awareness of local and national governments on a different industrial policy: promoting an organic plan able to guide economic activities towards sustainable products and technologies as well as a fair production systems respectful of workers dignity. There is the need of effective policies created to rule in details the production system, what to produce, how to produce it , with what, to whom, and even where. But a so deep change can be achieved only by having a bottom-up approach and promoting a wider participation of the population involved: those working in the enterprises to be converted, and those who suffers the impacts in terms of environmental damage and social transformations caused by those companies.

To achieve a real and structured change we have to foster the engagement and the participation of the civic society, the institutions and private enterprises that work in the same territory.



It is important to recover and diffuse the knowhow held by the members of the community and to involve other companies and other communities, to cooperate organizing support programs and claims at national or European level.

In the challenge of choosing new productions we will have to give priority to those that have a potential market, that are somehow “safe”, goods that will become essential as the effects of the environmental crisis will be more evident. An example are the systems for the exploitation of renewable energy sources; solutions to promote energy efficiency; vehicles to be shared; sustainable governance and mobility systems; 100% recycling systems; know-how and tools for the preservation and re-naturalization of the territory; ecological farming systems that employ skilled workers and technology; projects aimed at recovering old or abandoned buildings and guarantee the energy efficiency; create laboratories to improve technical skills in extending the life of products with maintenance and repair; etc. But in order to launch these new products we have to secure their market. This can only be done involving the community, or a larger set of communities, and their local governments.

The ecological conversion is mainly a process of restoring the economic relations through the re-establishment of a direct relation between producers and consumers, fostering the transparency and allowing the public control of the transactions process.

The direction of this change is clear: we are passing from a world dominated by the concentration of power, large financial groups and big businesses, to a system of powers, industrial plants, business, activities, widespread, differentiated, adapted to the local characteristics and communities, but not isolated from each other, as connected by a shared knowledge, made available by the world wide education and the potential of telecommunications networks.

This report will try to give an overview of the field of ecological conversion in our country, analysing the regulatory, social and employment perspectives and the challenges we are facing. It will also describe some experiences and best practices developed in the country and at regional levels.

2. Existing policies and legislation for conversion sector

2.1 National strategy, plans and other approved documents covering the conversion sector

The measures currently under discussion in the Italian parliament concerning the legislative decree connected to the Stability Law *"Environmental provisions to promote green economy and measures to contain the excessive use of natural resources"*¹, that transposes the European directives on key environmental issues, are an important reference framework which must be taken into account in addressing the conversion processes.

These include rules aimed at restricting the use of dangerous substances in order to protect the health and the environment, which require important actions of recycling and disposal of their waste. Those are sectors that could contribute in developing jobs and the industrial conversion of some production sites.



Also for what concern the industrial emissions our country seems to be delayed, as the laws necessary to comply with the provisions of European Directive² should have been implemented by the 7th of January 2013 and are now under examination.

The incorporation of the European directives in our regulation system certainly comes late, but it is looking in the right direction. The new rules indicate the requirements and sanctions in case of violation of the law; but in order to give a broader programming perspective it is important to bind them to a program, which clearly indicate the direction in which we have to orient our production system and the economy, as well as the research and technology sector. In the environmental legislation currently in analysis there is no clear reference to sustainable development, to emissions reductions, use of resources that can be dangerous for the health and the environment, and to the responsible use and reuse of resources.

Combine development to environmental protection means designing a different future. If the industrialization of our country would have give (in the past) that environmental protection was a priority as to ensure the economic and productive development of the area, today we would not face real tragedies that increasingly manifest their dramatic link with the health emergency.

As an example we cite the increase in cases of leukemia in the area of Valle del Sacco (unfortunately not an isolated case in our country) due to a wide extent of environmental pollution related to the contamination of the river Sacco with toxic waste dumps of industrial origin (contamination of the water and use on farms for irrigation).

For many years the workers have been exposed to toxic substances in the workplace, in particular chemicals and asbestos. Also the people living along the river absorbed and accumulated it; firstly through organic pesticides and later through the food.

Thinking to this experience as many others in our country, it is becoming more and more important talking about industrial conversion, and link together development and eco systems protection.

A participatory process of regulation is thus a political operation that can strengthen the idea that is possible and necessary to link progress and development to a higher quality of life, food, air and water.

Today the citizenship has the possibility to have back the regulatory role of the institutions, by actively involving local communities. We should incentive the public intervention having a long term perspective, to reaffirm the social and development model outlined in our Constitution.

2.2 Laws governing the conversion sector

The ecological conversion sector in Italy does not enjoy a specific regulation but is governed by a set of rules that refers to specific conversion categories . We will illustrate some of the rules governing the conversion sector at national and regional level, as the law for the conversion of productive areas



ecologically equipped, the National Action Plan for the sustainable consumption in the public administration and the innovative law proposal on social and ecological conversion presented to the Lazio Regional Council in December 2014

Productive areas ecologically equipped

The Legislative Decree. N. 112/98, the so-called "Decree Bassanini", art. 26. mentions for the first time the term "industrial areas ecologically equipped", and illustrates the general principles to which the provinces and regions should refer to legislate at local level. Local Authorities will be the institutions entitled of identifying the areas with the infrastructure and systems suitable to ensure the protection of health, safety and the environment.

The industrial areas ecologically equipped are also characterized by forms of unitary management of the infrastructure and services and by production plants that are exempt from the acquisition of the permit covering the use of the services available.

It is worthy to stress the intention of the national legislator that entrusted to the Municipalities for the identification of these areas, first among the existing ones but also among those partially or totally abandoned areas. In this indication it can be seen the objective of the legislator to start a sort of ecological conversion of productive centres and starting right from the closest institution level.

Today nine regions over twenty-one (Piedmont, Emilia Romagna, Liguria, Tuscany, Marche, Abruzzo, Puglia, Sardinia, Calabria), have adopted laws and implemented regulations related to industrial areas ecologically equipped, which over time have increasingly taken the character and the name of Ecologically Equipped Productive Areas (APEA).

Among the various experimental initiatives involving APEAs we highlight the LIFE + ETABETA project³, which was aimed at testing solutions for eco-innovation in the operational management of APEAs.

The APEAs involved in the project's initiatives have applied a managing model based on the activation of unique management entity; a tool of preliminary analysis; and a planning model to implement interventions in specific areas to control the level of economic and environmental performance.

The project concluded in April 2013 achieved the result of creating an operative model for the implementation of the APEA, its realization within the pilot area and the experimentation of a regional and national governance system to support the APEAs. The next steps will be the implementation of the National Register of APEA and the creation of a national and international network of APEA.



National Action Plan for the sustainable consumption in the public administration

The Green Public Procurement (GPP) is an instrument "whereby public authorities seek to procure goods, services and works with a reduced environmental impact for the entire life cycle, instead of goods, services and works with the same primary function that would otherwise be procured with a different tender procedure". In recent years the need to integrate environmental criteria in public procurement has been linked to the possibility to integrate environmental and social criteria, which safeguard the employment opportunities, decent work, compliance with social and labour rights, social inclusion, equal opportunities and ethical trade.

Generally speaking it can be said that the definition of green public procurement has now extended to sustainable public procurement, inclusive of both the environmental aspects and social aspects of procurement (Sustainable Public Procurement).

Italy adopted the "National Action Plan for sustainable consumption of public administration" (PAN GPP), with the inter-ministerial decree of 11 April 2008, revised in April 2013.

The strategic objectives identified by the Italian legislation concerning GPP are three:

- promote efficiency and saving in the use of resources, especially energy and the consequent reduction in CO₂ emissions, resulting in reduction of consumption of energy from fossil fuels, and increasing energy efficiency and use of renewables;
- reducing the use of dangerous substances, promoting goods and services whose life cycle is characterized by the absence or by the lower amount of possible dangerous substances;
- a quantitative reduction of waste products, promotion of behaviour aimed at reduce the purchase and orient it towards products with a long-lasting lifetime, easily reusable products containing recycled materials, recyclable products, and products with a reduced volume of waste and packaging.

From the operational point of view the National Action plan for GPP has set a target of 50 % of green purchases over the total purchases (in value), to be achieved by 2014, in relation to the public administration sector.

All the public actors involved are invited to adopt GPP practices in order to facilitate the procurement of goods, services and works that have a limited impact on the environment and are not harmful for human health .

The main objective of the National Action Plan is to promote the dissemination of GPP providing general technical guidance - through the Environmental Minimum Criteria - that will allow all parties to have environmental and social criteria immediately integrated into their tender announcements.



Law proposal on the ecological and social conversion sector

The Regional Law proposal n. 227 of 1 December 2014 on "Measures for the ecological and social conversion sector" has the main objective (Article 1) of encouraging the participatory process of social and ecological conversion of economic activities in order to ensure: landscape preservation and reduction of environmental impacts throughout their entire life cycle and along the supply chains, the protection of land and rights, fair jobs and decent work as well as the rehabilitation of areas in decay or disuse for productive purposes or supply of services to the citizens, and to promote the regeneration of urban and regional spaces .

To ensure this process the law advise, in a coordinated and systematic way, how to use certain tools and resources made available by the Region in addressing social and ecological conversion.

The beneficiaries (Article 2) of these tools are small and medium-sized enterprises (less than 250 employees) , individual enterprises and cooperatives , associations, non-profit organizations with social purposes, institutions that protect the commons , and - in the case of bankruptcy or situation of economic crisis - one or more workers, with the commitment to set up, within six months, forms of cooperative society in accordance with the Law 49/1985 Marcora⁴ .

To avoid that the objectives of the interventions provided by law remain too general the legislator has chosen to define (Article 3) what type of initiatives and interventions are qualified as having " ecological and social conversion purposes " .

The initiatives include:

- the partial or total restructuring of production lines and plant, of processes and products and of the services organization;
- the full transformation of the characteristics of the products manufactured or the services rendered;
- a change in the use of raw materials and energy from fossil fuels;
- the changes in the relationships with suppliers and buyers, maximizing the transparency of the information accompanying products sold and services rendered;
- reducing the consumption of land and the distances covered for each article or substance used and any products distributed;
- improving the quality of work done within and among suppliers, through the continuing education of employees on conversion processes;
- the rehabilitation of decayed and disused spaces to produce or supply services to citizens and promote urban regeneration and territorial spaces in the situation of decay and disuse;



- the adoption of measures, logistics, management systems and arrangements aimed at maximizing the efficient use of resources to better manage the surplus, scrap and waste resulting from production.

A key aspect of the law is the Partnership Agreement for Social and Ecological Conversion, which allows beneficiaries and institutions (the Region and the Municipalities) to prepare intervention related to the improvement, coordination, implementation and integrating resources and skills.

A key aspect of the Law is the role assigned to the "Report on the weak signals of the productive, environmental and territorial crisis", drawn up by the control agent⁵, which is used to detect future problems before they result into real crisis, in the supply chains, labour market, and environment; building a permanent network of "observers" of current changes, economic trends (sectorial and local) in support to the institutional intervention.

To draw up this document it will be asked the opinion of the involved actors (businesses, employers' associations, trade unions, local authorities, environmental and local groups).

This aspect of non-binding consultation of stakeholders reflects the absence, at the regional and national level of participative tools in the deliberative processes of identifying branches of territorial intervention, including production policies and land management.

Finally, through a specific section of the regional portal, it will ensure full transparency (Article 4) of the whole decision-making process leading to the definition and implementation of Partnership Agreements and the activities of the control room.

3. Funding for conversion sector

3.1 National, regional and local programmes covering activities in the conversion sector

We are now living in a historical period of transition, the crisis of the old economic model is now leading to the need of changing our approach of using natural resources.

But who should be the actors of this change?

The promoters should be first of all the institutions in collaboration with the organizations, and collectives. Firstly because the institutions can reduce uncertainties, typical of the transition phases, and secondly because they can help to better define future scenarios and remeasure costs, benefits, opportunities and risks .



Therefore in order to achieve a radical and permanent change the role of the institutions cannot be limited to amend the regulation or the current value and cognitive models of the concerned actors; it has to change the balance of the whole system, all the relevant variables, and take into account the feedback mechanisms.

Industrial and energy policies should address the principles of ecological conversion, social and environmental justice should be key elements to build a sustainable economic and social model, which promotes the redistribution of goods, equitable and rights-based.

Investing in the ecological conversion of the production system means implementing regulatory, financial and technological tools, that can support a concrete transition covering all aspects of the production cycle: from energy supply to the identification of what to produce, from the cycles of production to the supply chain, from transportation to targeting the consumers.

It means reshore the productions in the local territory, support local economies, shorten the distance between production and consumption and helping small and medium enterprises to reduce their impact without being penalized by non-competitive production costs. It means, provide vocational training to workers, recover degraded areas for production or to provide services for the citizens, enhance the experiences of existing transition and systematize them, foster the demand of goods produced without damaging the environment.

Another consistent aspect of the ecological conversion that represent a new area for development is the urban regeneration, both public or in partnership with the private sector.

“The urban regeneration consist in implementing renovation, remediation and conversion activities of big abandoned areas, and regeneration of degraded areas avoiding to increase the land used for the new structures”.

An urban regeneration project can only be successful if it considers the regeneration of the area and not only the pure reconstruction.

The requalification of a territory has to focus on the characteristics and potential of the social fabric of the area: the local identity, the social activities that are developed in the area and the resources of the inhabitants. Therefore the regeneration has to be addressed to the people and not to the space.

An example of good practice concerning the engagement of local government in the regeneration of public areas is the project developed by City of Torino.

The Municipality of Torino become aware that was necessary to rethink the role and shape of the peripheries, in 1997 it decided to create the Special Project for Suburbs, the first project in Italy aimed at developing integrated and participated intervention in “difficult” neighbourhoods.



In 2004, only six years later, it was possible to count more than 100 “best practices” realized in the peripheries of Turin.

The best example is the project implemented in the neighbourhoods of Mirafiori, created close to the well-known Fiat plant and aimed at hosting the workers and their families. An area of 2 million square meters with a population of 25 thousand inhabitants. The regeneration project promoted by the Municipality was financed by the EU programme Urban2. The rehabilitation of Mirafiori consisted in different integrated actions, like the creation of a big urban park, the realization of reference centre in the heart of the neighbourhood, intervention to achieve the economic development of the area, support to local entrepreneurs, technological innovation and local development. This project has been selected by the EU among the 10 best regeneration projects in Europe⁶.

An example that represents a case of collaboration between local authorities and local private enterprises for ecological conversion of urban areas, is the project Shagree (Green Shadow Program) promoted by the City of Bari⁷. The initiative promoted by a group of local enterprises⁸ working in the “green” sector, in collaboration with the Municipality of Bari and the participation of the citizens, see the implementation of green roofs and courtyard in the neighbourhoods of Madonnella, Murat, Picone e Poggiofranco.

The project *Shagree* is aimed at defining new scenarios for greening the city of Bari through the participative experimentation of green roofs.

The conversion project started in twelve houses and as a second step will be developed in a Public space, the roof of a school situated in Madonnella neighbourhood.

The objective of the project is to realize roof gardens in order to improve the absorption of rainwater, reduce the environmental and economic costs of the house conditioning and at the same time conducting an investigation on the impacts (climatic, thermic and hydrogeological) but also at social level of the green roofs.

By now there are almost 2 thousand square meters ready to host a green roof, the realization will be entirely financed by the project as well as the first six months of maintenance services.

Together with the implementation of the green roofs the project foresee the creation of a web platform directed to citizenship and aimed at defining other ways of greening the city and developing new methods for an efficient management. Part of the project will also be the regeneration of public green areas as traffic island, traffic circle and abandoned spaces.

The project financed by the FESR Puglia 2007-2013 started in 2013 and is still on-going, by now it is still early to determine the success or the failure of the project, but according to the first results the initiative see a great participation of the citizens, both the direct beneficiaries and those who signed up later to experiment the green roof⁹.



These initiatives are good examples of synergies between public and private sector in promoting the regeneration of public areas in a participative perspective.

In the last case the public was the promoter but the collaboration with a consortium of private enterprises answered the need of sustainability of the project. The possibility of attracting private capital, interested in the success of these initiatives, could be a great success and represent a chance to improve these markets at regional and interregional level.

3.2 Public-Private-Partnership in conversion sector

An example of promotion of the collaboration between public and private in regulating the fundings for the conversion sector is represented by the law 49/85, known as the Marcora Law.

The approval of this law allowed the purchase of a company or a branch of it by its workers, creating a system of subsidized loans for worker's cooperatives, and clarifying the rules for the worker's buyout operations. The law allows financial organizations with state participation to provide a loan on favourable conditions to those subjects that, following the market parameters, could not access the credit conditions. The funding body is allowed to monitor the foundation processes of the worker's buyout, seeking the consent of all the parties; it validate the business plan that supports the project and accompanies the new cooperative participation in its board of directors, as long as the credit will not be returned.

Nonetheless this device proves to be insufficient when the crisis has a "systematic" character, and especially when the worker's buyout involves the ecological conversion of the process and the product. In fact, there is a clause that makes the amount of payable credit equal to the share capital of the cooperative, made up of the workers' claims. This type of funding is not sufficient for those cases where the necessary resources are relevant or for all those operations providing a radical transformation of the production. Precisely for all those cases in which the ecology is an integrated project and requires a transformation of processes and products.

Fortunately, in these cases the recipients have the opportunity to combine public resources.

The possibility of combining resources develop the art of ecological conversion process and production: namely, the art of building a project that can benefit from resources, and at the same time to seek sustainability working on access to the credit. Otherwise, rely on sink funds can false the construction itself of the business plan, which represents the most valuable asset that such a business project can have. From this point of view, there are interesting experiences, like Rimflow and Officine Zero that attracted several manifestation of interests from different bodies and are now collaborating with universities, research centres, trade associations (such as the ONU Network), cooperatives and other professionals, social resource that are closely involved in the construction of their business plans, giving solidity and credibility.



3.3 Other initiatives of other sectors addressing conversion sector

There are numerous initiatives of civil society, students, activists, workers, and ordinary citizens who represent excellent examples of ecological conversion and contribute to the promotion of an alternative economic, productive, environmental and energy model in our country .

We chose to present some of the experiences that seem more significant to give an insight of the realities dedicated at promoting the transition to a productive, economic and social model more equitable and respectful of the environment and public health.

Officine Zero

Officine Zero is a project aimed at regenerating a dismissed industrial area. The site is a factory under bankruptcy proceedings, currently occupied by common people interested at making it productive again.

Officine Zero are located in an old service station site, formerly RSI (Night Trains maintenance), in the heart of Rome. On 1 June 2013, facing with the failure of the company and in support of the labour disputes of the workers, a broad coalition formed by social workers, students, artisans, unemployed, precarious workers and self-employed, has re-opened the factory gates to regenerate the area and give new employment perspectives. This led to the creation of the OZ-Officine Zero project, developed as an answer of common citizens to unemployment and isolation of disadvantaged groups. The proposed project has the objective of experiencing a different concept of work, and proposing an alternative use of the maintenance station.

Cornerstone of the project is, today, the conversion and regeneration activities located in the former plant, implemented by a cooperative created by former workers, craftsman, unemployed and knowledge workers. The project started from the idea that the skills of the night trains maintainers could be re-employed in a public utility service: a centre for re-use and recycling, which operates in the field of repair, reuse and crafting.

In a context of constant deindustrialization (in 2014 the Lazio Region was the second in Italy for the number of business failures) initiatives like this represent an excellent example of civic participation in ecological conversion. This project wants to provide new forms of mutual aid and raise awareness among the social fabric of the need to initiate projects that give innovative answers in concrete terms, and the new challenges that sustainable transformation of production processes, consumption and employment are developing.

This experience promote an economic model that aims to be stable and sustainable, while activating a process of reshoring of local economy thus a physical and organizational rapprochement to the territory of productive virtuous.



Rimaflow a factory recovered



As a consequence of mismanagement, in December 2012, the Maflow enterprise located in Trezzano sul Naviglio, historical factory of the automotive sector in Italy, decided to relocate its production in Poland leaving 330 employees out of work and giving the worst response to the crisis that hit the company since 2009. Faced with this economic and social tragedy, the workers decided to respond by restarting the activities inside the hangars abandoned by the owner, but this time in a self-managed system. They decided to oppose to the decisions imposed from the top, reclaim their work and encourage the full participation of the collective members in all business decisions.

A failing company policy, speculation and relocations had left km and km of abandoned structures, real "ecological bombs" ready to explode. When checking the state of conservation of properties and pollution levels the workers had discovered that the levels of pollution of the soil and groundwater were over the allowed and the first thing they had face was to carry out interventions to secure the asbestos roofs.

The experience of the former employees of the Maflow is not an example of workers buyouts, in fact they didn't invest their savings in the redevelopment of the company; the only investment was in time and work to recover and improve the spaces of the factory, by following the principle that is the work that produces wealth and thus income. The Maflow produced automotive components and, during the dispute, the workers have been unable to keep the machinery that has been taken away in Poland. However, even if they could retain the old machinery there would be no chance of being competitive in the automotive industry. Therefore by necessity and by choice, they have decided to take an alternative route to industrial productivism converting the activities and spaces of the factory in ecological terms, and build a "village of the alternative-economy" where productive activities and social activities meet to withstand the crisis.

All the activities concur with forms of self-financing and engagement to promote the mission of the project and are designed according to the logic of km0 in order to reduce environmental impacts due to the transport of goods. Km0 is first of all conceived as geographical proximity and as well as proximity of values and principles. Inside the abandoned warehouses are now developed several activities: a second hand market, where besides the twenty original members (ex-workers of the Maflow), hundreds of unemployed have the opportunity to build an income. They also organize workshops of artisans and artists, courses and cultural activities, a hostel for refugees and homeless, social and cultural events. These activities generated the opening of a small restaurant-bar for the members and users of the "village of the alternative economy".

The issues that they are still facing rests on several levels: they are still struggling for the legal authorization to use the site and secondly the difficulty to become an alternative in a market economy that is still strong in the territory. Therefore the need to build synergies with realities that are working in the same direction and promoting the participation at community level, is becoming a key element and a support to relocate the market and change consumption habits of locals.

The recovered factories can be a pragmatic solution to the destruction operated by the productive forces also over the environment because they keep the work and control over local territories. The need of an



ecological and social conversion is more and more urgent. Rimaflow is an example of how we can go out from the social and environmental crisis that we are facing by changing the procedures and paradigms that govern the production of goods and their consumption.

4. Conversion sector development trends in Italy

4.1 Challenges, issues and concerns faced by the conversion sector

There are several challenges faced by the conversion sector in our country, so far we mentioned the gaps related to the current legislation and the answers provided by the local institutions and the civil society by referring to examples of conversion of abandoned industrial areas that promoted a structural and productive regeneration through ethics and social development of local communities. We continued analysing some of the financing instruments at national and regional level that support and promote initiatives to ecological conversion.

But there are still two outstanding issues representing crucial challenges for the conversion sector. The first one is undoubtedly the transition to an energy model independent from fossil fuels. With the view of achieving the ecological conversion of the whole economic system a key role is played by renewable energy. The individual engagement has to be supported by a systematic penetration of the alternative sources in the productive and social fabric of the country.

The answer to the energy challenge can come from civil society; when the latter is able to play an active role and to contribute to the common good and where communities are strong and the people is an active part of the process, the presence of a state in management issues becomes lighter and the market less influential in decision-making. The energy sector is the one that best describes the importance of the decentralization of powers from the state to the society conceived as groups of citizens connected to its own context, its own territory and culture.

Another key challenge that the sector of the ecological conversion is facing is the one related to finance and changing of the dominant economic model.

We cannot leave the ecological conversion of the economy or entrust the jobs creation to the "invisible hand" of the financial market –oriented only by to the maximization of profits and unable to operate in the public interest. We should instead ask for more stringent rules and controls, and rethink the tasks and objectives of the market. The finance has to retake its authentic meaning: a tool and not a goal; we should question us on which environmental, social, economic model we want to achieve, and only later understand which are the most effective financial solutions to accompany and support it.



In response to these challenges “*Banca Etica*”¹ was created in Italy, a bank with substantial differences compared to the 'traditional' banks. It has been created with the initial idea of providing fundings only for the third sector and non-profit, but lately it expanded its activities also to a specific and well-defined profit categories that have social interest, such as the organic food or energy efficiency and renewables, and loans to physical people. *Banca Etica* is also the only bank which, in addition to the normal economic investigation, also makes a preliminary environmental research to ensure that those who ask for a loan complies with the principles contained in its Charter with regards to democratic participation, equal opportunities, environmental standards and workers' rights.

The assessment of the economic and non-economic impacts is a different way of understanding the banking business that considers not only the positive results in terms of financial achievement but also the environmental and social impacts. Today the suffering rate of the Italian banks is around the 10% (ex. On 100 Euros loaned 10 do not return to the bank or have still huge repayment difficulties). For the *Banca Etica*, which lends to individuals often excluded from the mainstream banking, the suffering rate is five times lower than the average. A demonstration that a better knowledge of the non-economic aspects and the trust relationship established with the applicant allows to work in a more sustainable way, not only from a social and environmental point of view, but also in economic terms.

4.2 Conversion sector development trends

There are several initiatives at the national level that respond to the need of ecological conversion, in this section we will cite some examples that give an overview of the evolution of conversion sector in our country.

The Energy Community represents a response to the energy. Cited in the European Directive on Energy Efficiency (2012/27 / EU) *Community Energy Strategy*; the Energy Communities are those communities that have the objective of solving the energy problem, in terms of generation, energy efficiency and saving, management (balance of supply and demand) and trading.

The promotion of these new energy models has led the operators of the energy sector in our country to agree that we are facing a period of global change and the need of restructuring the energy market, diversifying the supply using renewable energies is a key aspect for the sustainability of the system. An important step that goes in this direction and offers great hope happened on Jan. 26, 2014 when, following the proposal of the Coordination FREE (Renewable Energy and Energy Efficiency), the Ministry of Economic Development, the Energy Authority, Enel, Terna, Confindustria and other stakeholders of the establishment shared the text "Towards a new organization of the energy market" that contains a series of proposals on how to start a process of conversion of the energy model.

The possibility to produce energy has many positive impacts for a community, it does not only mean reaching high levels of energy security in the supply but also achieving significant results in terms of

¹ Meaning *Ethical Bank*



environmental protection, renegotiate the prices, and transform the way in which we use energy, for example by exploiting periods of surplus or enhancing the energy from renewable sources developing jobs related to it. The energy management would become easier and optimized in line with the objectives of the community, with additional benefits in terms of efficiency and effectiveness.

Referring to the problems relating to finance and access to credit in addition to lending activities, there are alternatives forms of finance: for example the development of peer-to-peer business where the lender and applicant meet directly; usually on a virtual platform, in which any web user can provide a certain amount of money that is then invested in projects submitted through the platform.

Another tool that is in rapid evolution is the equity crowdfunding. Here the focus is not the loan but venture capital invested by those who intend to participate as a partner in a given project.

In conclusion, different tools can meet different needs, but it is crucial to evaluate operational methods and aims. Microcredit can help people or entire communities to come out of poverty but can turn into a kind of legalized usury; ethical funds can guarantee an investment that is consistent with their principles or be a pure marketing operation; venture capital and equity crowdfunding provide essential funds to encourage the take-off of many innovative activities.

The key issue is therefore having a direct knowledge of the financial tool that we choose, to be able to invest the resources in a consistent way, consistent with our personal principles and to evaluate their effects. For this reason the watchword is transparency and a relationship that is closest as possible between all parties involved in financial relationships.

5. Occupational perspectives

5.1 Existing professional profiles related to conversion sector (ex. profession of conversion expert)

With the term green jobs are generally indicated all the professions in the industry and services sectors which adopt "ecological" solutions.

The United Nations Environment Programme (UNEP) defines green economy the one that aims at "improving human well-being and social equity, while significantly reducing environmental risks and ecological deficits "

Moreover, according to the ILO (International Labour Organization) and UNEP definition, the green jobs category includes all the work activities that in the agriculture, industry and services sectors contribute in preserving or rehabilitate the quality of the environment. It also specifies that it does not refer only to



those jobs directly associated with specific areas of sustainability but also to those related to the efficiency, quality and innovation of goods and services offered looking at a green perspective.

On the other side are defined as "hybrid" the professions whose work is not directly aimed at producing green goods and services or at reducing the environmental impact of the productive cycles, but which can provide know-how in companies working in the "green sector".

In Italy the people employed in the green sector (both private and public), according to the above definition - are more than 3 million .

In 2013, there have been 52 thousand hiring, both in non-seasonal and seasonal jobs, which represent the 9.2% of the hiring in the whole job market. Analysing the specificity of the sector 47 thousand of the hiring were non-seasonal (the highest rate in the last five years).

Most of the green jobs origins as an evolution of existing professions; rather than the creation of new professions we see an integration of new skills and practices on pre – existing professional figures .

Some sectors more than others are generating demand for green jobs, here the ones that are facing a significant improvement:

1. *Integrated waste management*

The evolution taking place in the waste management has opened new job profiles; where in the past the central figure was the one of the garbage man, and in addition the operator of compacting machine, now the waste has become a complex system that requires different figures and different skills, some of which characterized by innovation and creativity: from the know how on the functioning of technological systems (reception facilities, treatment and recovery, energy plants, biodigesters), to the implementation of communication campaigns for citizens called to contribute to the collection; from new companies that organize the refitting and re-use of the goods otherwise destined for landfill, to the experts in the remediation of contaminated areas; from the eco-designer, that imagine the products in order to minimize the waste at the end of its life, to those who invents app and microchips for the traceability of waste. A changing world that needs always higher skills and professionalism.

Specific profiles connected to waste management sectors are: the Ecodesigner, Trainer of active citizenship/communicator, Site manager for waste reuse, refitting technician, technician of treatment and recovery plant, expert of integrate management, technician for energy-waste plant, expert in biodigester or agro-energy plants, expert of the remediation of contaminated sites and landfills.



2. Sustainable building

The construction sector is one in continuous and profound change and brings with it a great of potential for new professions. As an example the energy quality of the buildings is improving, many rules become mandatory, new technologies are put in place and new computational tools integrated the old system; but above all the market seems to welcome this " revolution " and requires new skills at all levels of the supply chain. There are some new profiles that is worthy to mention as an example of new professional figures in the construction sector: the energy auditor, technician for the certification of energy quality, construction technician expert in energy efficiency and ZEB (zero emission buildings) designers.

3. Sustainable mobility and transport

In order to achieve a sustainable mobility system many different actors have to be involved in the conversion process: those who design and implement the vehicles used to transport people and goods ; those who deal with the mode of transport in and out of the city ; rethinking the organization of functional areas of the city; professionals in citizenship education and those who control that the rules of common life are respected. The professional figures connected with the sustainable mobility and transportation sector are: mobility manager, logistic manager, traffic and transports engineer, expert in environmental education, expert in the economy of transports and port manager.

4. The production of energy from renewable sources

The studies and data available on employment impacts, in the areas linked to renewable and energy saving, reveal that the sector of energy efficiency, in relation to the construction industry is among the green sectors the one that offers most employment opportunities. Below the depth of some professionals belonging to this wide sector: installer of biomass plants for energy uses, installer of heat pump, geothermal installer, installer of thermoelectric and photovoltaic systems, installer of solar thermal systems, chimney sweeper, energy manager and expert in designing renewable energy systems.

5. Sustainable agriculture and agro - energy

The field of agro - energy is one of the most advanced in agriculture development, firstly because all the technologies related to it are new or have been innovated in the last twenty years and secondly because the agro - energy converge the latest theories on land use, energy efficiency and water saving. In addition to the most innovative professional figures belonging to this new sector, it is worthy to remind also to the more traditional ones, due to the multidimensional nature of agriculture. Among them we see the



entrepreneur for agro-energy, manager of agro-energetic plants, consultant for the development of agro-energetic plants, agronomist, manager of agro-tourism and operator of didactic farm.

6. The local management and sustainable tourism

In a perspective of prevention against the increasingly disruptive effects of climate change, that are added to those caused directly and indirectly by human beings, a sustainable land management needs of professionals that are able to understand its changes and its transformation. In this perspective, sustainable tourism becomes a great opportunity to develop multitasking professionals able to hold together communication skills, knowledge of the local territory, to understand its peculiar and distinctive elements and knowledge about the load bearing capacity of the environment and the communities concerned. The professional figures identified in this sector are landscape gardener, expert in territorial management, disaster manager, expert in territorial event organization, and marketing manager.

7. Smart City

The new professionals are characterized by high technological skills and management . It is a very broad category, a new generation workers with a keen sensitivity to the economic and social sustainability . Here an insights about some of the professionals in the industry: start-up consultant, expert in geographic information system (GIS), expert in information communication technology (ICT), smart city expert, participation facilitators, expert in web marketing for sharing economy, digital facilitator, fundraiser and App designer.

8. Eco – innovations

The Eco-innovation sector involves a mix of professionalism, from scientists to creative, from experts in economic issues and management to communication experts. Their skills describe in detail what knowledge, skills, values and behaviours characterize them . Five professional profiles were selected as priority: chemical (ex.expert in bioplastic), designer, certification (ex. Responsible for quality assessment and expert in green certification), Life Cycle Assesment (Expert in LCA and in evaluation of the product and process sustainability), facilitator and science communicator.

The sole problem concerning the access to this labour market is the difficulty for the enterprise to find candidates that meet the requirements of the job positions, in terms of skills and know how. The education and training opportunities are still scarce and the traditional education does not provide the practical training that is needed for this kind of professional figures. This aspect concerning the training opportunities will be deepened in the following paragraph.



5.2 Existing education and training programmes related to conversion sector

Nowadays many economies are looking forward to contribute to the ecological conversion of productive activities as well as consumption. It is implicit that these are growing importance also for the training processes.

The traditional education system, high schools, professional school and universities is facing a consistent gap in training young people for the new green professions. By now faculties like agronomy, building and energy engineers does not provide specific courses on green solutions. The knowledge on energy efficiency, the technology related for example to passive houses and all the innovation related to the green sector including the technology to produce organic food are left to the research sector or to the practical experience of professionals.

Another limit of the current formal training is the need to innovate the training methods; the training programme still use traditional education methods as face to face lectures and formal evaluation and certification tools.

The acquisition of the skills should take place in the field, such as contamination and cooperative exchange between different disciplines, they should be result oriented and focused on giving the tools to develop business idea. An example is the organic farming: to be able to work in the organic sector the professionals needs to practice in the fields rather than in the classroom, to give a practical demonstration to the farmers that producing organic is possible and furthermore it is more convenient. The current educational paths, as the university career in Agronomy (with rare exceptions) do not provide specific training on organic growing.

In a wider perspective of the training system, it would be interesting to have the contribution of the artisans and enhance their skills for the green sector.

Carpenters, blacksmiths, glassblowers and small producers could play a key role within the share economy making themselves promoters in changing the current productive model.

In our country the promotion of education and training is among the competences of the regions.

Considering the numerous opportunities offered by the conversion sector it is more necessary than ever the implementation of national and regional laws encouraging the investments and promote a public-private collaboration in developing training programmes. Hence, it is necessary to provide funding for the actors involved in conversion training activities, such as schools, universities, accredited entities, public bodies, private enterprises, trade unions, associations and informal bodies. All of them should be enabled to develop interdisciplinary and complementary training programmes aimed at achieving a social and ecological conversion in our Country.



This would be the sole option to promote a genuine transition towards new productive, energetic and consumption models oriented to an environmental and social sustainability.

In terms of training, it is worth mentioning that the companies are facing greater difficulty in finding professionals able to work in the green sector, mainly because of lack of technical and " transversal " skills (ex. Autonomy, flexibility, ability to work in teams , etc .) Competences that can be developed only through wider diffusion in the formal education of training paths envisaging the alternation school to work.

In the last few years, regional authorities have tried to fill the gap of the traditional education by financing the realization of professional training specific for the new jobs related to the green sector.

Many Regions, including Lazio Region, are developing European Union funded (European Structural Funds) educational programmes providing skills and knowledge to have access to green jobs to be implemented by accredited training centres located in the territory. On the other side, the private enterprises are taking advantage from their trained professionals and started offering training not only to its own employees but as a new branch of business.

Almaviva Green experience represents an excellent example of training innovation in the conversion sector. Almaviva, an industrial group with over 25 thousand employees, was born in 2005 through the merging of two companies COS group and Finisel. In 2008, following the need of optimizing costs and find more resources to continue the activities of the enterprise, the managers decided to promote and implement a plan for reducing consumption, promote new behaviours aimed at environmental sustainability and reinvest the saved resources to pay the provision for the results bonus to the employees. To achieve this process of change, the enterprise started to develop research activities by monitoring the consumption of the company.

To integrate the research activities and the rehabilitation of the company and make it more efficient and sustainable, the enterprise realized the project Almaviva Green. In 2009 it was constituted a Green Team of experts in different disciplines, which defined a road map, designing a structured and detailed plan of the intervention to be done and the schedule to implement them. At the end of the year the transformation of the enterprise in a Green enterprise was achieved.

A key aspect of this evolution has been the vocational training of the employees. The training developed by the research unit was aimed at raising awareness on the perspectives of the economic system, analysing the causes of the productive and environmental crisis, examining options for a conversion of the production to respect the environment and finally involve the unions for a stronger engagement in environmental field.

In this framework the company decided to promote training modules focusing on three directives:

a) Carrying on the training initiatives addressed to Almaviva's employees and extent to the other enterprises part of the Almaviva group the training materials used in the past editions.



b) Repeat the training courses in all the plants situated in other regions, involving other research units and other unions' referents.

c) Design specific training addressed to the employees of Almagiva on issues related to energy savings law (national and European)

It would be interesting to spread the experience of Almagiva to other enterprises at national level, by promoting lobby activities on the Unions in order to give them an active role in the promotion and diffusion of best practices.

5.3 Education and training needs in the conversion sector

Here accent is over needs of development/re-definition/creation/fostering the profession of conversion expert at regional and national level. In addressing the issue of education and training in the conversion sector in terms of social impacts and effects on the labour market we have to consider an interesting fact that emerges from the report prepared by the ILO "Green Jobs becoming a reality - Progress and outlook in 2013". It affirms that in 2013, almost 20 professional figures out of 100 in the green sector are considered by enterprises difficult to find, compared to the 11 out of 100 of the other sectors. These difficulties have provoked 10,000 hires less in absolute terms, a relevant number considering the current level of unemployment. Therefore the need to make proposals is becoming more urgent in order to offer appropriate training and clear the mismatch between the supply and the demand in the green sector.

According to ISFOL (the Institute for the Development of Vocational Training for Workers) in the last two years the demand for training in the environmental sector has significantly increased; and the 70.7% of the training activities surveyed is about lifelong learning. This demonstrates that the need of upgrading skills and create new competences is more widely perceived by the adult population that seeks to adapt to the new trends of the market.

The vision of a complete economic and social transition towards a paradigm of environmental sustainability expands and scale up the range of possible occupations and new competences that can be used in the labour market. This should be the goal of the vocational training and for the training actors in order to update the contents and the professional figures result of the courses.

Forming a private company, an entrepreneur, a group of workers, a community or administrators to the ecological conversion, means being aware that a conversion is real only if it is fair from the social and environmental point of view. Therefore only if it considers various and diverse aspects the ecological conversion can represent a real transition to a new paradigm.

The first step will be to recover the existing knowledge and to update them, secondly it will be necessary to form not only entrepreneurs and companies but also to raise awareness and build training processes



addressed at all industrial sectors and in particular to the communities and institutions that are involved in the conversion process (ex Almagiva Green).

It would also be important to promote the local production, discouraging the relocation and long distance supply chains, to build synergies with research centres and universities in order to support the conversion process in the long-term, a key aspect will also be the contribution of the trade unions and civil society. The training will have to enhance the skills and potential of each trainee, and be part of a wider project in which not only the employer-employee relationship is involved in the process, but also the relationship with other workers, the surrounding environment and the community that hosts the productive activity.

We consider essential that the training takes a systematic and interdisciplinary approach; while maintaining an high quality level in order to train technicians and operators of specialist areas, it should also give elements and contents able to offer a wider overview.

As an example of innovation we specify that in a legislative instrument that we mentioned in paragraph 2.2, the Regional Law proposal n. 227 it is mentioned the introduction of incentives for lifelong training of workers aimed at rehabilitating the local productive structure both through the innovation of the hardware (innovations related to infrastructure and innovation on the product), and innovation of the software (cultural, systemic and innovative aspects of the production cycle). In our view a key aspect is that the conversion of the labour market could incorporate these two approaches in an integrated and synergistic way, in order to build a more systematized action able to provide a more complete vision, useful for human and professional development.

In Morin's view, development creates a way of organizing the society that follows a logic in which the hyper specialization provoke the compartmentalization of the individuals. This also depends on the techno-economic conception of development, ruled by the calculation as unique instrument of investigation and knowledge. This system lead to disregard many important aspects: first of all it leaves apart any activity that cannot be monetized, the mutual help, the use of common goods, and more important it does not consider what cannot be measured as for example joy, suffering, dignity, ecological degradation.

Inspired by this approach we should try to humanize a model that clearly shows its contradictions and inconsistencies, highlighting on the other side a trend, the one of the green economy and green jobs, that can offer opportunities of fair growth and development for the country.

For example in the construction processes of the smart cities, a required profile may be the "collective impact officer" with the role of looking for partners and mediate between stakeholders in the preparation and implementation process of infrastructure projects or the "facilitator of green projects in multi-stakeholder partnership". These "hybrid" professional figures will have to be able to integrate their specialized skills and know how to range from the sociological scope for the promotion of participation, the identification of key actors, using methods of territorial survey, the ability of stimulating aggregation



processes; to a more technical field, as the sustainable mobility, or the Green Public Procurement. Another key figure may be the expert in the design of conversion interventions: a professional with expertise on ecological conversion in the institutional, business and social field, a figure able to adopt a systemic vision useful to design local development interventions, with an integrated and interdisciplinary approach, focusing on environmental and social sustainability.

6 Conclusion

The environmental conversion sector in Italy is growing of importance and it is achieving a relevant place in the economic market. Even if our country demonstrated a delay in implementing the European directives concerning energy efficiency and industrial emissions we are seeing a small step forward and the regulator is moving in the right direction.

The engagement of local authorities in promoting the ecological conversion represent a positive answer to the demand of public policies, aimed at improving the transport, energy and welfare system by respecting the environment and the human being.

As a good practice we mentioned the implementation of the regional legislation n.227 on "Measures for the ecological and social conversion sector" that encourages a participatory process of social and ecological conversion of economic activities. With this proposal the Region hopes for the creation of an integrated approach and a synergy of actors in developing conversion activities.

In countertrend with this experience, at national level the energy policy of the government is promoting the opening and expansion of new mining frontiers, offshore and on shore wells, and promotes a large use of coal and gas. A more organic policy in promoting different energy and economical models would be needed.

The investments for conversion activities in Italy are still limited, there are some financial instruments that finance cooperatives and promote the workers buy out, but at national level we lack of an organic ecological conversion plan. The ecological conversion of private houses is entirely left to the private citizens and in several cases as well the conversion of industrial abandoned areas.

Hopefully, the civil society is active and it is filling, with its initiatives and social engagement, the gap left from the institutions. Most of the ecological conversion, innovation and research activities are implemented with European Funds.

Concerning the occupational perspectives and education programmes in the green sector it has been identifies that our country suffers a real gap between the knowledge achieved through the traditional education system and the needs of the job market. The green sector can be a real opportunity to overcome the crisis, but the need to improve the skills of the professionals is becoming more and more urgent. The process of providing an answer is still on going, the regional authorities entitled to provide education and



training facilities only recently started to direct the EU Structural Funds to develop training activities in the territory.

We can perceive the will and engagement of people in achieving the change, and public policies are going in the right direction, it would be desirable to have a fasten of the process and a stronger engagement of the state in promoting the conversion of economic, energetic and education systems in a fair and sustainable direction.



1 Chamber Act no. 2093 - B connected to the law of stability for 2014 , called “Collegato Ambiente”, that contains measures for the protection of nature and sustainable development, environmental assessments, energy , green purchasing , waste management and remediation , soil conservation and water resources. http://www.camera.it/leg17/522?tema=collegato_ambientale

2 Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control)

3 Life+ ETA BETA (LIFE09 ENV/IT/000105) , "Environmental Technologies Adopted by small Businesses operating in Entrepreneurial Territorial",

4 See Ref. Par. 3.1 Public-Private-Partnership in conversion sector

5 The “Control Agent” will be the so called *Cabina di Regia* instituted with the Regional Directive 4/2013 , "*Cabina di Regia* for planning and implementation of regional policies for development and economic, social and territorial cohesion financed by the ESF Funds and other financial resources ordinary and / or additional "

6 “*Corviale Domani: dossier ricerca per un distretto culturale*” Istituto Italiano per l’Industria Culturale – ISICULT per Filas.

7 <http://www.shagree.it/>

8 Editoriale41 S.r.l., Aerosigma S.r.l., Eulogic S.r.l., Ser.Co.M. S.r.l

9 <http://www.europinione.it/riqualificare-gli-spazi-pubblici-la-scommessa-per-unitalia-piu-vivibile/>