



# Can environmental agreements represent an opportunity for green jobs? Evidence from two Italian experiences

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## ARTICLE INFO

### Article history:

### Keywords:

Green jobs  
Green economy  
Environmental agreements  
Sustainable development  
Environmental rehabilitation  
Stakeholder cooperation

## ABSTRACT

Until today, following the rise of the so-called “green economy” paradigm, research into green jobs has mainly focused on the relationship between the rise of the green economy and the effects on creation of new opportunities of green employment. This study aims to link new green jobs and new green business models with industrial reconversion through the experiences of environmental rehabilitation in two Italian industrial areas characterized by the implementation of environmental agreements. The two cases are compared on the base of an analysis of formal documents and through semi-structured interviews with local representatives. The analysis highlights a series of enabling conditions and barriers to the creation of green jobs and local green businesses development. Stakeholder cooperation, as well as industries and research interaction, emerge as the main driving factors. Conversely, bureaucracy and lack of infrastructural investments are revealed as barriers to the creation of green jobs and local green businesses development. This study enriches the academic literature, shifting the attention from the impacts of green policies and green jobs, to those factors that are able to stimulate the employment growth. The definition of enabling conditions and barriers could support policy makers and other local stakeholders in implementing future programmes and actions for local development in areas characterized by similar conditions.

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## 1. Introduction

Job descriptions change over time and take on forms shaped by the dominant technical-economic paradigm (Perez, 1983; Freeman and Louça, 2001). From this point of view, the “green job” concept was revitalized at an international level in 2008 (UNEP and ILO, 2008), following the rise of the so-called “green economy” paradigm (Hamdouch and Depret, 2010; UNEP, 2011; Frey, 2013). The “green economy” refers to a new occupational profile, based on environmental management and sustainable innovation. The OECD (1999) considers jobs as “green” if they produce goods and services for the measurement, prevention, limitation and minimization of environmental damage concerning water, air and the ground. Green jobs contribute to the resolution of problems related to waste recycling, noise pollution, climate change and ecosystem restoration and improvement. The OECD definition includes all activities using cleaner technologies, products and services that reduce

environmental risks, methods and technologies that minimize pollution and any practice that enable efficient natural resource management. This approach offers the possibility to study job vacancies that are directly due to the “green perspective”, as a consequence of the affirmation of the “green economy”.

Other organizations have also provided definitions of “green jobs”. The Environmental Careers Organization of Canada (ECO) has defined green jobs as those characterized by specialized skills, knowledge and training, and which directly work with information, technologies or materials that minimize any environmental impact (ECO, 2010). In the same way the Canadian statistical agency identifies green jobs those activities involved in the production or provision of environmental goods and services (Statistics Canada, 2004). The Center of Excellence of California has defined “green” jobs as those intended to minimize the environmental impact (again creating a close relationship with a green economy), but that are also supported by specific knowledge, abilities, training and experience (COE, 2009). Moreover, UNEP and ILO have defined “green jobs” as “jobs such as work in agricultural, manufacturing, research and development (R&D), administrative, and service

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activities that contribute substantially to preserving or restoring environmental quality” (UNEP and ILO, 2008, p. 3). This definition highlights the direct effect on the general economy. It includes activities that are defined as “substituted” and “redefined”. The term “substituted” refers to activities involving a process of education and professionalization towards employees, in which the objective is to make employees more aware of the production and of their role in the rational exploitation of resources. The term “redefined” refers to those activities in which the final product is different from the original. In redefined activities, skills and knowledge of the labour force do not receive any enhancement, and only the final output changes (Wei et al., 2010).

At the academic level, the recent debate concerns the relationship between “green economy” and “green jobs”. Focusing on the energy industry, Furchtgott-Roth (2012) highlighted the negative effects on energy costs and on production and employment of an interruption of fossil fuel use. Similarly, Connolly et al. (2016) analysed the trend of green jobs in Scotland and found that the growth was fast but volatile, with the number of jobs created between the end of the '90s and the first years of the 2000s significantly decreasing during the economic crisis of 2008. From a different perspective, Wei et al. (2010) highlighted the potential of the green economy to increase green jobs. They found that investing in renewable energies has created many more work opportunities per unit of released energy, compared to sources of fossil fuel. Likewise, Yi (2013) demonstrated that the public policies that incentivize a green economy in metropolitan areas of the United States have produced positive effects on employment. Cai et al. (2011) demonstrated that the environmental policies of the Chinese government resulted in a corresponding rise in jobs. The occupational gap emerging from the approximately 44,000 direct jobs lost between 2006 and 2009 in the traditional industries was more than covered by the 475,000 jobs in innovative segments related to green industry. Yi and Liu (2015) conducted a geographical analysis of regional variation of green jobs due to clean energy policy, and explored the quantitative increase in green employment. The wide variation observed emerged, among other factors, as the result of variations in the local adoption of policies. Yi (2014) focused on green business growth in U.S. states, particularly the drivers of green business. Political factors, as well as the economic environment and other contextual factors, were statistically analysed to identify their weight in the survival of green businesses. Jung (2015) analysed sustainable policies in South Korea and reported that green jobs need to be stimulated through a multi-dimensional strategy that overcomes a simple quantitative approach. In this perspective, Connolly et al. (2016) proposed a hybrid qualitative and a quantitative approach in order to study the evolution of green jobs in Scotland. They highlighted a volatile growth in a low carbon and green economy, and they suggested that policy makers should focus on the types of jobs being created and supported.

Although the impact of economic benefits on renewable energy deployment is still disputed, several studies in Germany have highlighted the positive impact of investments in renewable energy. In particular, a study on the economic effects of renewable energy expansions has showed the positive trend expected in Germany both in terms of economy growth and employment (Blazejczak et al., 2011). The authors used an econometric multi-country model to quantify the net aggregate economic effects and sectorial implications of a renewable expansion strategy in Germany. Designing three different scenarios, the study highlighted that there is a potential positive impact on employment, but adequate labour market policies are necessary to support it. Similarly, Lehr et al. (2012) analysed the implications of renewable energy investment on the labour market in Germany, and

estimated a positive growth until 2030. Among the various variables, the role of local policy in support to renewable energy emerges as particularly relevant.

Several studies have thus attempted to measure the quantitative increase in green jobs as consequences of green policies and green investments.<sup>1</sup> However, other studies have demonstrated that the green economy also represents an opportunity for greening workforces (COE, 2009). The European Resource Efficiency Platform – EREP- (2012) highlighted the importance of supporting the restructuring process of the entire economy in order to have a more resource-efficient Europe. In this perspective, a central issue is the creation of more and better employment through a strategy for greening jobs.

In this framework, our contribution enriches the debate through the analysis of a smart planning tool (i.e. environmental agreements) in order to achieve environmental goals and to increase the greening of jobs. The aim of the study is to enrich the debate over the relationship between the green economy and green jobs, linking those jobs to the opportunities of requalification and redevelopment of large industrial areas.

This contribution enriches the academic literature by shifting the attention from the impacts of green policies and green jobs, to the factors that stimulate the employment growth. In fact, the research perspective moves through the adoption of a qualitative approach aimed at identifying enablers and barriers for the creation of green jobs in the bargaining “game” of a planning process. The research focuses on two historical industrial areas in Italy: Venice-Porto Marghera, and Piombino, whose industrial redevelopment was based on voluntary “Environmental Agreements” (hereafter EAs) (Grepperud, 2002; Rennings et al., 1997). To the knowledge of the authors, this is the first research study that aims to connect a negotiating instrument of territorial planning and management with the topic of green jobs.

The case of Porto Marghera is characterized by companies operating in the chemical and petrochemical sector, while Piombino offers the opportunity to analyse what happened (and is still happening) in a steel industry area. Both these areas were added into the national register of Sites under Environmental Remediation Obligation (SERO) by the Italian Ministry of the Environment, and in both contexts EAs have been used as an instrument to plan environmental rehabilitation and local industrial reconversion. Through using EAs as voluntary planning tools, local and national policy makers aimed to rehabilitate SERO areas in both environmental and occupational terms. The EAs have been designed to affect SERO areas on three levels: remediation measures, creation of new sustainable productive processes with less environmental impact, and maintenance of the occupational levels. Both the second and third aspects are closely linked with green jobs. In particular, the proposed research has examined whether the redevelopment and reconversion processes designed by the EAs for the two sites could represent a concrete driver to stimulate the increase in new sustainable businesses and new opportunities for green employment and jobs. Official documents and materials related to the EA processes were used as informative inputs. On the basis of this documentation, interviews were then conducted with local stakeholders to collect their opinions on the effectiveness of the implemented initiatives. The dual collection and analysis of data helped design the bargaining process that starts from the nomination of a new SERO, moves through the implementation of EAs, defines new green business models, and finally leads to the birth of new green job positions. The contribution identifies the

<sup>1</sup> See a collection provided by ILO at: <http://www.ilo.org/global/topics/green-jobs/publications/assessments/lang-en/index.htm>.

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