PART I

Chapter 2

Measuring Green Entrepreneurship

In the aftermath of the global financial and economic crisis, the central role of entrepreneurship in boosting the economic activity has been emphasized in many countries. Governments have often allocated important shares of recovery packages to helping entrepreneurs, either in the form of loan guarantees, tax incentives, research credit designed to boost innovation, or systems to encourage self-employment. Yet, instead of being neutral in their industry targets, stimulus plans have often given priority to environmentally-friendly investment such as projects for improving energy efficiency, or enhancing sustainable transport. These priorities are not new. In almost all cases, they have been part of longer-term commitments towards environmental protection, support for smaller enterprises, and innovation. Within this difficult economic context, many countries have increased public expenditure to revive growth, while also taking the opportunity to orientate national economies towards long-term sustainability and "green growth". According to the United Nations Environmental Program (UNEP, 2009) South Korea invested in 2009 79% of its total economic stimulus package in "green activities" representing almost 7% of its GDP, followed by China and Australia with 34% and 21% of their stimulus packages going to "green investments", corresponding to 5.2% and 0.9% of their respective GDP. In this context, the study of green entrepreneurship went from being simply "fashionable" to being essential for policy guidance.

The OECD has been assisting efforts to foster green growth as well as to guide relevant policy initiatives on the basis of statistical evidence. As part of the OECD Green Growth Strategy, this chapter presents existing definitions for green entrepreneurship, past work in the direction of quantifying its dynamics, as well as key findings across a number of countries, using existing OECD data for a selection of green sectors.

2.1. Definitions and measures of green entrepreneurship

Conceptual framework

Defining *green entrepreneurship* is a difficult task. The concept itself is relatively recent and has been receiving growing attention since the 1990s. The interest in green entrepreneurship is not only reflected in the growing literature on the topic but also in the proliferation of terms used to identify the concept itself. Among the terms available to describe green entrepreneurship, the following are the most commonly used: eco-entrepreneurship, ecopreneurship, environmental entrepreneurship, sustainable entrepreneurship, ecological entrepreneurship, enviro-preneurship or sustainopreneurship. How can these concepts be operationalised? What activities could be included in the "green" part of entrepreneurship? What are the main characteristics of green entrepreneurs? The literature has not provided clear-cut answers to these questions.

A green entrepreneur can be either making her business "green" or simply entering a "green business". In other words, green entrepreneurship could be defined in terms of the technology used for production in any sector of the economy, or in terms of the sectors firms are active in, in which case our attention is restricted to parts of the economy producing specific types of output. The former is sometimes referred to as a *process*

approach in defining green business, while the latter as an *output approach*. Authors tend to add complexity to those definitions by often incorporating ethical, social, or environmental motivations in definitions of green entrepreneurial activity.[1] The following illustrate the broad range of possible interpretations of the concept:

Isaak (2005)	*An ecopreneur is a person who seeks to transform a sector of the economy towards sustainability by starting business in that sector with a green design, with green processes and with the life-long commitment to sustainability in everything that is said and done.*
Volery (2002)	*There exist two types of ecopreneurs:* *1) "environment-conscious entrepreneurs", are individuals who develop any kind of innovation (product, service, process) that either reduces resource use and impacts or improves cost efficiencies while moving towards a zero waste target.* *2) "green entrepreneurs", are those who are both aware of environmental issues and whose business venture is in the environmental marketplace. Such entrepreneurs pursue environmental-centered opportunities which show good profit prospects.*
Anderson (1998)	*Both Entrepreneurship and Environmentalism are based on a perception of value. The attitudes which inform environmental concern create areas of value that can be exploited entrepreneurially. "Environmental Entrepreneurs" not only recognize opportunity, but construct real organisations to capture and fix change in society.*

In this publication the definition of green entrepreneurship adopted is based on the type of output produced by firms. Put simply, the term "green entrepreneurship" will be interpreted as "entrepreneurship" in "green" sectors, where "green" refers to specific types of outputs, but it is fully recognized that this definition tells only part of the story on green entrepreneurship. The second task involves a clear delimitation of "green" (or "environmental") sectors, which would also be essential for studying any other green topic such us "green technology" or "green jobs".

The definition of "green" adopted in this publication is in line with previously expressed views on the meaning and dimensions of the term. In the context of the OECD Green Growth Strategy (OECD, 2010) for instance, a basic measurement framework is put forward which reflects the common double-faceted approach on "green". More specifically, a first set of indicators is proposed to inform about environmental efficiency in production, and a second set informing about economic activity in conjunction with environmental goods and services.

The OECD/Eurostat (1999) proposed a definition of the environmental industry following an *output approach* on the basis of specific criteria:

> "*The environmental goods and services industry consists of activities which produce goods and services to measure, prevent, limit, minimize or correct environmental damage to water, air and soil, as well as problems related to waste, noise and eco-systems. This includes cleaner technologies, products and services that reduce environmental risk and minimize pollution and resource use.*"

In its one-time Survey of Environmental Products and Services (SEPS), the United States Census Bureau (Becker and Shadbegian, 2008) had already defined the environmental sector in the United States, in a very similar way to the OECD/Eurostat:

> "*The manufacture of products, performance of services and the construction of projects used, or that potentially could be used, for measuring, preventing, limiting, or correcting environmental damage to air, water, and soil, as well as services related to the removal, transportation, storage, or abatement of waste, noise, and other contaminants.*"

The OECD proposed as early as in 1996 (see OECD, 1996) a framework for delimiting the environmental sector which includes a set of "core industries", that is, categories of activities which are entirely environmental (such as Recycling – ISIC 37, or Wholesale of waste and scrap – ISIC 51.49), and a "non-core" set containing both activities with and without environmental relevance (such as Construction – ISIC 45, where firms specialized

in the construction of energy-efficient buildings are considered environmental, while firms engaged in the construction of roads are not). According to the OECD framework "*non-core does not mean not important, but rather areas where identification, measurement and agreement problems still exist*" (OECD, 1996). The share of "green" in "non-core" industries is typically identified by examination of the main activity of each firm in the industry (Brolinson *et al.*, 2005). The distinction between a "primary" and "secondary" set of environmental activities is central in this framework. A firm belonging to one of the "core" sectors declares necessarily a primary activity which is environmentally relevant, while firms in "non-core" sectors could potentially declare such activities as primary, secondary, or not declare them at all. Most studies that measure the environmental sector report statistics broken down by "core" and "non-core" industries, as well as "primary" (otherwise "specialised") and "secondary" activities.

Empirical framework: Measurement of green activities

Eurostat invited all European countries to propose a clear delimitation of green sectors on the basis of the criteria included in the manual published jointly with the OECD. Examples illustrating alternative ways of delimiting the environmental industry were also included in the manual (see Annex I.A for a specific example). A number of studies appeared in the literature as a result of this call. The Hungarian Central Statistical Office (HCSO, 2005), Statistics Sweden (Brolinson *et al.*, 2005), the Department for Environment Food and Rural Affairs in the UK (Mansfield and Thomas, 2005), Statistics Netherlands (Van Rossum and Schenau, 2006), as well as the Belgian Planning Bureau (Janssen and Vadille, 2009), all made attempts to measure the size and dynamics of the environmental industry following recommendations by the OECD/Eurostat. Authors report on the number of firms active in the industry, the number of employees, turnover, and occasionally exports and value added.

The delimitation of the environmental sector has also been discussed extensively within the United Nations (UN DESA, 2010), in an effort to establish a harmonized framework for the collection of environmental accounts. A number of recommendations regarding the classification of activities have recently been put forward for consultation, including the consideration of the environmental relevance of the *intention* of producers in cases where the technical nature of their activities is inconclusive.

It is noteworthy that much of the literature on green entrepreneurship lacks substantial empirical analysis. The theoretical debate that has emerged during the last few years due to the growing interest in the topic has undoubtedly contributed to a better understanding of the phenomenon. In the absence of stylized facts on the activity however, the debate often appears distant from the current conjuncture, and hence unable to offer tangible guidance to relevant policy initiatives (Box 2.1). Much more empirical work has been completed towards delimiting and measuring the environmental industry. While measuring green entrepreneurship accurately is still complex, figures on the evolution of the size of the green industry in each country can be used to illustrate rough entrepreneurial trends in these sectors.

In many of the studies measuring the environmental industry, entrepreneurial dynamics are presented indirectly through figures on the evolution of the number of firms between two or more points in time. For instance, Janssen and Vadille (2009) report that between 1995 and 2005 the Belgian environment industry has registered a growth of 44% in the number of firms, while firms involved in primary environmental activities have increased even more, by 53%. Going a step further in their analysis, Brolinson *et al.* (2005)

break down growth rates of primary and secondary activities by economic sector. More specifically, they show that in Sweden the largest increase in the number of firms declaring an environmental activity as primary between 2002 and 2005 occurs within Other Business Activities (ISIC 74) and in Mining and Manufacturing (ISIC 10-37), that is, within "non-core" sectors. The same holds, not surprisingly, for the largest increase in the secondary activities which occurs within Electricity, Gas and Hot Water Supply (ISIC 40) (Table 2.1).

Table 2.1. **Number of establishments classified within the environmental industry by sector groups, Sweden, 2002-2005**

	2002		2003		2004		2005	
	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary
Mining and manufacturing (NACE 10-37)	767	297	799	312	838	319	936	278
Electricity, gas and hot water supply (NACE 40)	940	164	970	168	992	162	996	207
Wholesale and retail trade (NACE 50-52)	1 505	399	1 515	413	1 515	442	1 616	486
Other business activities (NACE 74)	748	686	793	709	805	729	1 019	732
Water distribution, sewage and waste (NACE 41+90)	1 925		1 915		1 728		1 984	
Other industries (NACE 1-5, 45, 55-73, 75-85, 91-99)	2 953	1 493	2 998	1 517	3 162	1 548	1 958	1 354
Total	**8 838**	**3 039**	**8 990**	**3 119**	**9 040**	**3 200**	**8 509**	**3 057**

Source: Brolinson *et al.* (2005)

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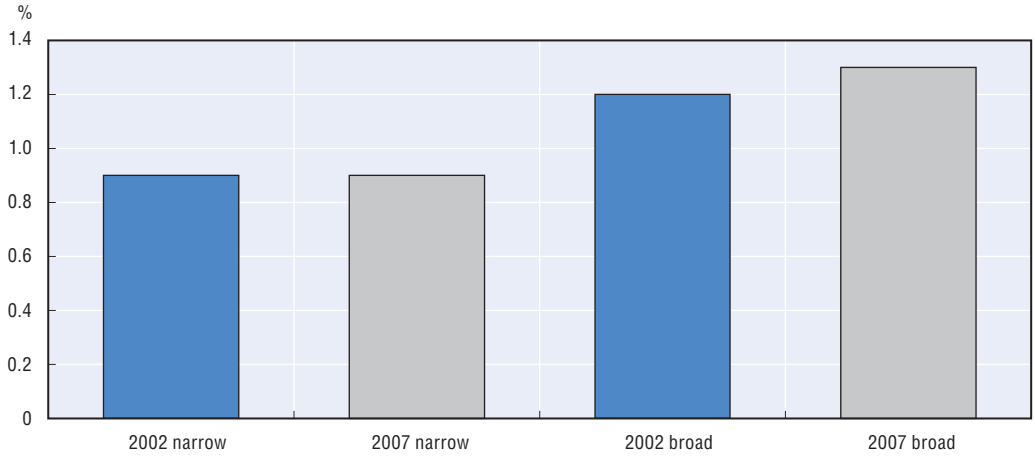
Typically, studies on the green industry including some dynamic approach present figures on growth in employment along with number of firms, turnover, and other variables of interest. The sign and level of growth in employment is often in line with the one observed for the number of firms.

Numerous reports measuring the green industry have also been published on the basis of goods and services produced by firms. Statistics Canada (2004) established a very high disaggregation of green industrial activities at the NAICS 6-digit level (the North American Industry Classification System at the product level) in order to measure the environmental industry, and retrieved records of relevant transactions using firm surveys. The same approach has been followed by the United States Department of Commerce (2010), in a study where analysts applied a fairly general definition of "green"[2] to over 22 000 product codes from the Economic Census in order to estimate the share of "green" in the US economy. In an effort to capture different views on the delimitation of the green industry, the study adopts a "narrow" definition including only products and services whose relevance is relatively undisputed (such as waste collection and disposal), as well as a "broad" definition with products and services whose "greenness" is much more subject to debate (such as waste transportation). The study presents results following both definitions.

The US Department of Commerce (2010) compares employment in environmental firms as a share of total manufacturing between 2002 and 2007 (Figure 2.1), following a narrow as well as a broad definition of "green". The study concludes that shares of green employment remain quite stable, despite the observed decrease in total numbers of employees. The green part of the economy seems to follow negative trends in manufacturing overall (US Dept. of Commerce, 2010).

Figure 2.1. **Green share of total manufacturing employment, 2002 and 2007**



Source: United States Department of Commerce (2010).

StatLink http://dx.doi.org/10.1787/888932384230

Box 2.1. **Policies with an impact on green entrepreneurship**

Government policies rarely target explicitly the birth of new enterprises in environmental sectors. A sequence that is commonly observed in the green part of the economy is the adoption of policies for the protection of the environment, which in turn create favorable conditions for investment, growth, and the development of new firms in environmental sectors.

The example of the water sector in Israel is typical of the type of impact environmental policies can have on entrepreneurship (OECD, 2010, Annex II.B). To address the scarcity of water in the country, over the past two decades the Israeli government introduced policies to encourage reduced consumption and recycling of water, as well as strong pricing signals. These policies included abstraction and supply, water transportation and distribution, and wastewater policies. These factors had an impact on the demand for water and innovation incentives in the sector. As of 2007, 270 water-technology companies operated in Israel, employing almost 8 000 people. About 60 companies among the 270 were start-up companies, established after 2001, and were involved in R&D. In addition, exports of the water technology sector grew from USD 700 million in 2005 to some USD 850 million in 2006, a 21% increase.

Source: OECD (2010), *Taxation, Innovation and the Environment*, OECD, Paris.

2.2. "Green" in the context of entrepreneurship

The previous section discusses the statistical definition as well as a number of attempts to measure the size of "green sectors". Nonetheless, the fact that the environmental industries can be delimited in many different ways gives rise to the question of the suitability of various definitions for studying entrepreneurship. This section first outlines the reasons why entrepreneurial dynamics are not easily depicted for an aggregate of environmentally-relevant activities, and then proposes a way to proceed in order to best use the available data for measurement purposes.

Measurement difficulties

The most important challenge in measuring green entrepreneurship lies in separating unambiguously relevant activities within "green" sectors from activities occurring in the

rest of the economy. Specifically, the indicators used to describe entrepreneurial performance (such as birth, death or survival rates of firms) are often not available at the detailed level of industrial activities characterised as "green". For instance, the *OECD Structural and Demographic Business Statistics (SDBS) Database*, which is used here as the main source for measuring entrepreneurial performance, only contains data within a two-digit industry classification. An analysis at that level makes it impossible to retrieve records of birth either of firms active in four-digit green industries, or of firms focusing on specific green products indentified under six-digit codes.

Box 2.2. **Detailed industry classifications across systems**

Detailed industry classifications are introduced in response to the latest needs in data collection. As needs for data collection are implemented independently across countries using different systems, classifications at the most detailed level of disaggregation exhibit inevitably differences among systems. For instance, NAICS (North American Industry Classification System) was revised in 2002, among other reasons, to identify additional industries for new and emerging activities. To that end, industries were created for internet services providers, web search portals, and internet publishing and broadcasting. Within NACE Rev. 1 (used by Eurostat) the telecommunications sector (64.2), was not disaggregated at the time. Although suggestions for the implementation of a more detailed system in telecommunications were not missing by 2002, there were significant time lags before some convergence occured. The differences remained strong only at a more detailed level of disaggregation.

The identification of green activities is typically done at a highly disaggregated level. The difficulty in finding some correspondence between industry classification systems at that level impedes the effort to collect comparable figures for the size of the environmental sector across different countries. Cross-country comparisons of entrepreneurship indicators using an (otherwise very similar) delimitation of "green sectors" becomes a non-trivial task.

Trends in green entrepreneurship

In order to best use the available data, a choice is made to focus on the few sectors that are entirely representative of activities in the green part of the economy. More specifically, this chapter presents results from a selection of two-digit "core" industries which are entirely environmentally-relevant: Recycling (ISIC 37); Collection, purification and distribution of water (ISIC 41); Sewage and refuse disposal, sanitation and similar activities (ISIC 90). The focus on these sectors is justified by the fact that they respond *in their entirety* to stimuli specific to green activities, and therefore to conditions that are favourable for entrepreneurial development in that industry. While the focus does not allow for general conclusions regarding the entire green economy, it allows the examination of two important issues: the degree of homogeneity in entrepreneurial trends *within* the green part of the economy, as well as the degree to which entrepreneurial dynamics in green sectors differ to the rest of the economy.

It is noteworthy that the focus on core sectors when analysing green activities is not new. A typical example of the same approach comes from a recently published competitiveness screening of the EU eco-industries (EU, 2009) based on statistical evidence from "core" industries and eco-construction. Its authors justify their focus by referring to

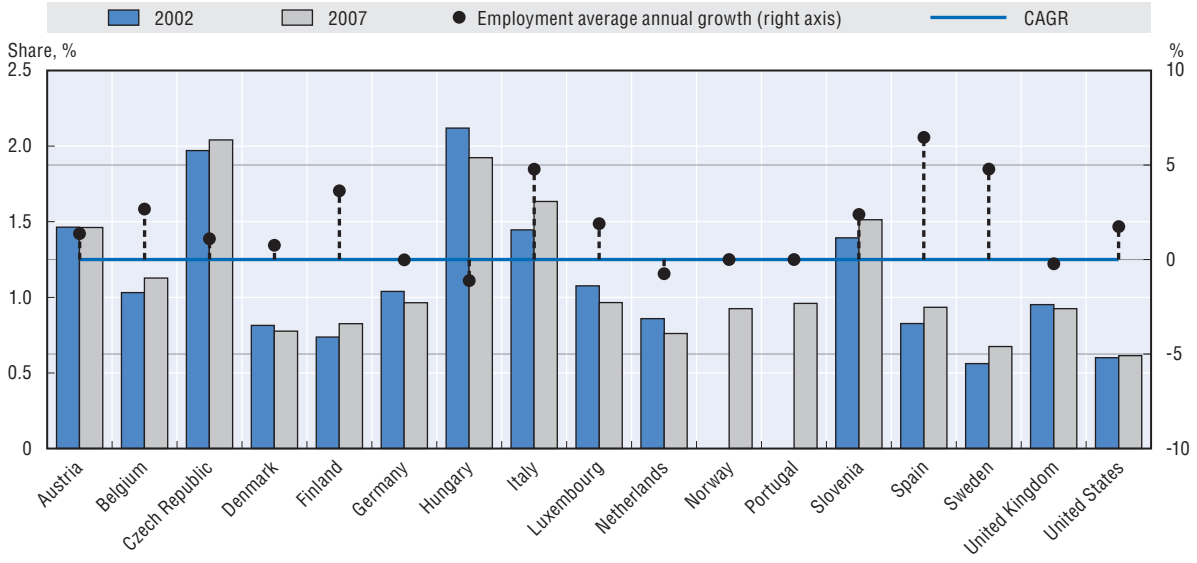
"*policy relevance, data availability, and homogeneity in terms of activities covered*" by core environmental sectors.

In what follows, data on entrepreneurial performance in core sectors come from a number of different sources: the *OECD Structural and Demographic Business Statistics (SDBS) Database*, the *OECD Database for Structural Analysis* (STAN), and the *Eurostat New Cronos Database*. Depending on the source there is some variation in the sectoral coverage of each indicator.

Figure 2.2 illustrates the share of employment in the three core sectors of interest for a selection of European countries and the United States in 2002 and in 2007, as well as the average annual growth rate between these two points in time. The evolution of employment differs significantly among countries. Nordic countries (Finland, Sweden), Spain and Italy stand out, while some large economies such as the United States or Germany appear stable. In Central Europe, Hungary, Czech Republic, Slovenia the data reveal a quite high share of employment in purely green sectors.

Figure 2.2. **Share of employment in ISIC sectors 37, 41 and 90 in percentage of total economy***

2002-2007



* Total economy corresponds to ISIC Sectors 10 to 74, excluding Sectors 65 to 67.
ISIC 37: Recycling.
ISIC 41: Collection, purification and distribution of water.
ISIC 90: Sewage and refuse disposal, sanitation and similar activities.
Note: Employment figures in STAN are sourced from national accounts and may include adjustments for informal non-registered firms.
Source: OECD Structural and Business Statistics (SDBS) Database, and *STAN Database* for ISIC Sector 90.

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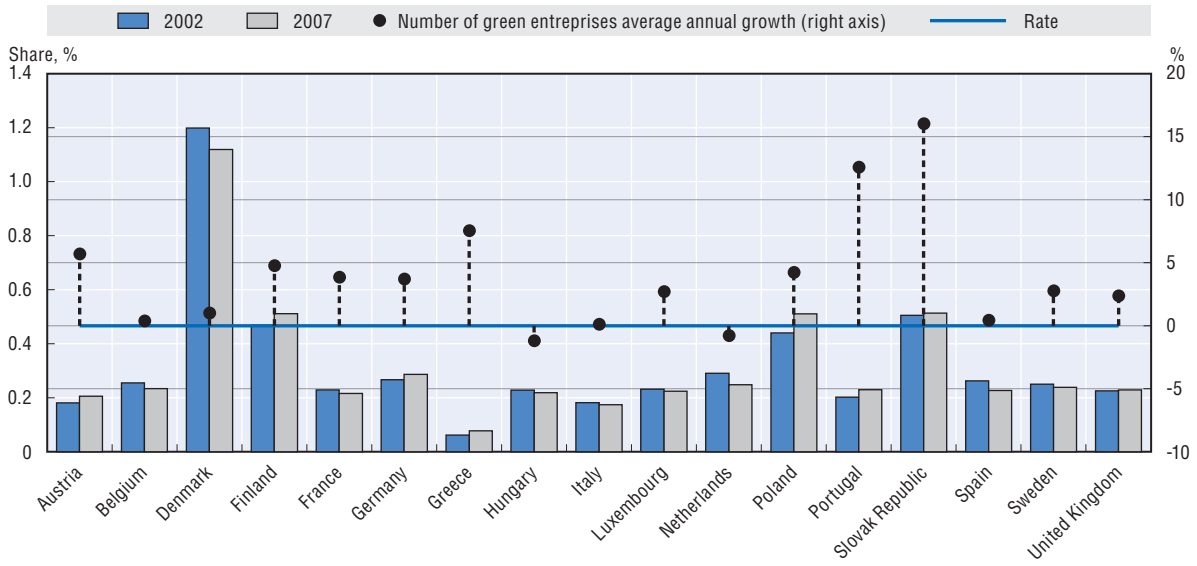
Figure 2.3 focuses on the share of green enterprises in total economy and their dynamics. The data come from *Eurostat New Cronos Database*, and does not comprise Sector 90 (Sewage and refuse disposal, sanitation and similar activities). The figures do however include two four-digit sectors: 25.12 (Retreating), and 51.57 (Wholesale of waste and scrap). Portugal, Greece, and the Slovak Republic stand out, although the trends are not entirely consistent with patterns observed in Figure 2.2. Differences may be partly due to differences in the sectors covered in each graph.

Figure 2.4 compares the rates of birth in a selection of core sectors with rates in the entire economy (excluding the primary sector) and shows marked differences in birth rates

Figure 2.3. **Share of green enterprises (NACE: 25.12, 37, 41 and 51.57) in percentage of total number of enterprises in total economy***

2002-2007



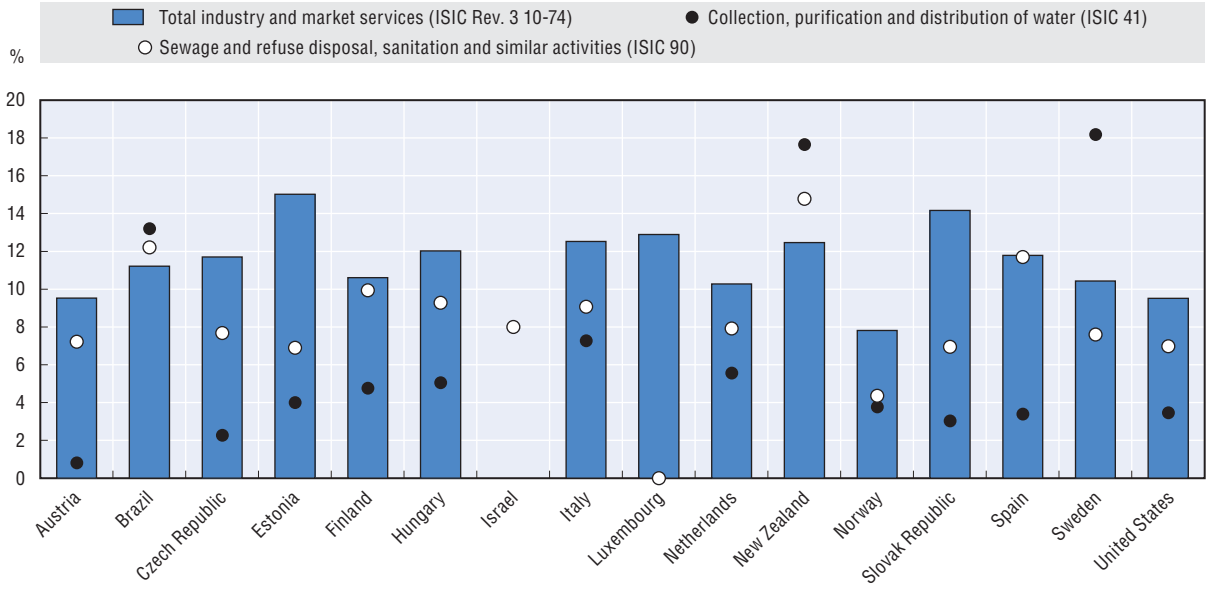
* Total economy corresponds to NACE C to K.
NACE 25.12: Retreating.
NACE 37: Recycling.
NACE 41: Collection, purification and distribution of water.
NACE 51.57: Wholesale of waste and scrap.
Belgium only NACE 37, 41 and 51.57.
Greece only NACE 25.12 and 51.57.
Belgium, Greece and Poland: Year 2003.

Source: Eurostat New Cronos Database.

StatLink http://dx.doi.org/10.1787/888932384268

Figure 2.4. **Business birth rates in a selection of green sectors *versus* total manufacturing**

2006 or latest data*



* All employment size class. Employer Birth 2005 data for Czech Republic, Finland, Netherlands, and Slovak Republic.

Source: OECD Structural and Business Statistics (SDBS) Database.

StatLink http://dx.doi.org/10.1787/888932384287

across green sections. Sweden, Finland, Spain and Italy stand out, while some non-European countries such as New Zealand and Brazil display an exceptionally dynamic performance. The deviations in birth rates between industries do not appear to be random. Systematic differences in the nature of activity in each sector may explain much of the cross-country variation in Figure 2.4. The fixed cost of entry, the elasticity of demand, profit margins for new firms are only some of the factors that could impact on the profitability of entrepreneurial activity in an industry. For instance, "Collection, purification and distribution of water" (ISIC 41) records systematically lower birth rates than "Sewage" (ISIC 90) in all countries except the ones with very dynamic performance in ISIC 41.

2.3. Concluding remarks

The work presented in this chapter could be seen as a first attempt to separately indentify entrepreneurship dynamics for a group of green sectors that have high policy-relevance. By focusing on core environmental sectors one can produce interesting indicators, but these are however subject to high variation across contries that are difficult to explain. This pilot application nevertheless confirms that it is worth pursuing the effort of looking at diversity within environmental sectors.

The way forward could include a number of important initiatives. The enhancement of coverage of environmental sub-sectors in the existing databases is already scheduled or implemented in many European countries (Eurostat, 2009) and it is also being considered in the revision of the 2003 SEEA (Integrated Environmental and Economic Accounting) of the United Nations, expected in 2012. Similar actions in other OECD countries could prove equally beneficial for policy toward green sectors. Moreover, the use of micro-data in the future should allow for better identification of green activities, and entrepreneurial dynamics. Information at the micro-level will not only improve considerably the consistency of estimates produced. It will also provide the means to answer customized queries, and develop indices of entrepreneurial performance focused on groups of firms, regions, sectors or activities of interest that have been difficult to produce in the past.

Notes

1. Independently of the definition one uses to delimit green entrepreneurship, the degree to which its fundamental components are present differs among individual cases. An entrepreneur uses green and non-green inputs to produce green and non-green goods. The motivations of a green entrepreneur may not only be green.
2. A product or service was considered "green" based on whether it conserves energy or other natural resources, or reduces pollution (US Department of Commerce, 2010).

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ANNEX I.A

Example of Environmental Sectors

The example comes from OECD/Eurostat (1999). Statistics Canada used a similar breakdown, based on the classification presented in OECD (1996), to survey the environmental goods and services industry for the year 1995.* The breakdown presented here has been re-organized to match the revisions to OECD (1996). This breakdown is also the basis for the detailed correspondence with HS codes (Harmonised System Codes Commodity Classification).

A. Pollution management group

Production of equipment and specific materials for:

1. Air pollution control

1.1. Air-handling equipment

1.2. Catalytic converters

1.3. Chemical recovery systems

1.4. Dust collectors

1.5. Separators, precipitators

1.6. Incinerators, scrubbers

1.7. Odour control equipment

2. Wastewater management

2.1. Aeration systems

2.2. Chemical recovery systems

2.3. Biological recovery systems

2.4. Gravity sedimentation systems

2.5. Oil/water separation systems

2.6. Screens, strainers

2.7. Sewage treatment

2.8. Water pollution control, wastewater reuse equipment

2.9. Water handling goods and equipment

* See Statistics Canada (1997), *Environment Industry*, 1995, Preliminary Data.

3. *Solid waste management*

- 3.1. Hazardous waste storage and treatment equipment
- 3.2. Waste collection equipment
- 3.3. Waste disposal equipment
- 3.4. Waste handling equipment
- 3.5. Waste separation equipment
- 3.6. Recycling equipment
- 3.7. Incineration equipment

4. *Remediation and clean-up of soil and water*

- 4.1. Absorbents
- 4.2. Cleaning-up
- 4.3. Water treatment equipment

5. *Noise and vibration abatement*

- 5.1. Mufflers, silencers
- 5.2. Noise deadening material
- 5.3. Vibration control systems
- 5.4. Highway barriers

6. *Environmental monitoring, analysis and assessment*

- 6.1. Measuring and monitoring equipment
- 6.2. Sampling systems
- 6.3. Process and control equipment
- 6.4. Data acquisition equipment
- 6.5. Other instruments, machines

7. *Other*

Provision of services for:

8. *Air pollution control*

- 8.1. Emission monitoring
- 8.2. Assessment/evaluation/planning

9. *Wastewater management*

- 9.1. Sewage treatment systems
- 9.2. Wastewater reuse systems
- 9.3. Water handling systems

10. *Solid waste management*

- 10.1. Emergency response and spills clean-up
- 10.2. Waste handling, collection, transport and disposal

10.3. Operation of sites
10.4. Recycling (sorting, baling, cleaning)
10.5. Operation of recycling plants (materials recovery facilities)
10.6. Hazardous waste management
10.7. Medical waste management

11. *Remediation and clean-up of soil and water*
11.1. Cleaning-up
11.2. Operation of water treatment facilities
11.3. Industrial services (cleaning for facilities and tanks)

12. *Noise and vibration abatement*
12.1. Assessment/monitoring

13. *Environmental research and development*
13.1. Clean processes
13.2. End-of-pipe pollution abatement control

14. *Environmental contracting and engineering*
14.1. Engineering design/specification/project management
14.2. Biological and ecosystem studies
14.3. Environment impact assessment, audits
14.4. Water treatment
14.5. Environmental planning
14.6. Risk and hazard assessment
14.7. Laboratory and field services
14.8. Environmental economics
14.9. Legal services (environmental law)
14.10. Environmental management

15. *Analytical services, data collection, analysis and assessment*
15.1. Measuring and monitoring
15.2. Sampling
15.3. Process and control
15.4. Data acquisition
15.5. Others

16. *Education, training, information*
16.1. Environmental education and training
16.2. Environmental information searching services
16.3. Environmental data managemeìnt and analysis

17. Other

Construction and installation for:

18. Air pollution control

19. Wastewater management

19.1. Sewer systems

19.2. Wastewater treatment plant

20. Solid waste management

20.1. Solid waste treatment, storage and disposal

20.2. Hazardous waste management

20.3. Recycling

21. Remediation and clean-up of soil and water

22. Noise and vibration abatement

22.1. Highway barriers

23. Environmental monitoring, analysis and assessment

24. Other

B. Cleaner technologies and products group

Production of equipment, technology, specific materials or services for:

1. Cleaner/resource-efficient technologies and processes

1.1. Components of cleaner/resource-efficient technologies

1.2. Biotechnology

2. Cleaner/resource-efficient products

2.1. Components of cleaner/resource-efficient products

C. Resource management group

Production of equipment, technology, specific materials, services, construction and installation for:

1. Indoor air pollution control

2. Water supply

2.1. Potable water treatment

2.2. Water purification systems

2.3. Potable water supply and distribution

3. Recycled materials

3.1. Recycled paper

3.2. Other recycled products

4. *Renewable energy plant*
    - 4.1. Solar
    - 4.2. Wind
    - 4.3. Tidal
    - 4.4. Geothermal
    - 4.5. Other

5. *Heat/energy saving and management*

6. *Sustainable agriculture and fisheries*

7. *Sustainable forestry*
    - 7.1. Reforestation
    - 7.2. Forest management

8. *Natural risk management*

9. *Eco-tourism*

10. *Other*
    - 10.1. Conservation and resource management