



**REPORT ON THE PILOT PROJECT TOWARDS DEVELOPING STATISTICAL TOOLS FOR MEASURING
EMPLOYMENT IN THE ENVIRONMENTAL SECTOR AND GENERATING STATISTICS
ON GREEN JOBS**

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Table of Contents

1. INTRODUCTION.....	4
2. OVERVIEW.....	5
2.1. Objectives of the pilot surveys.....	6
3. CONCEPTS AND DEFINITIONS	8
4. ORGANISATION OF GREEN JOBS PILOT SURVEYS, 2013	11
4.1. Questionnaire design.....	11
4.2. Sample frame and sample design	11
4.2.1. <i>Establishment Survey 2013</i>	11
4.2.2. <i>Labour Force Survey module 2013</i>	12
4.3. Fieldwork.....	14
4.3.1. <i>Establishment Survey 2013</i>	14
4.3.2. <i>Labour Force Survey module 2013</i>	14
4.4. Response rates and data processing.....	15
4.5. Item non response and errors in the data	17
4.6. Imputation and editing	17
4.7. Limitations of the surveys	18
4.8. Lessons learned, experiences and suggestions.....	18
5. MAIN FINDINGS.....	19
5.1. Establishment survey	19
5.2. Household survey.....	24
5.3. Establishments' perceptions and expectations	26
6. SURVEY FORMS.....	27

1. INTRODUCTION

Over the recent years there has been increasing demand for statistical data related to green economy and its potential to create economic growth and jobs. Data on the number of green jobs, its size and composition, and contribution of the specific groups of workers and economic units to the green economy are needed for (i) a better understanding of the impact of climate change on the labour market, and (ii) making sure that effective policy measures and tools are formulated to respond to this shift to a green(er) economy.

However, very little has been done on measuring the employment of green economy and all other employment issues related to the greening of economy. The main reason for this lack of statistical data on green jobs is the absence of statistical definition of green economy and green jobs.

The ILO, in recognition of the limitations of the current situation concerning the availability of data on employment in the green economy, both locally and internationally, has been trying to address the problem by defining the concept of green jobs for statistical purposes and developing statistical tools for measurement of employment in the environmental sector and green jobs. The draft proposal for statistical definition of employment in the environmental sector and green jobs¹ was presented and discussed at the 19th International Conference of Labour Statisticians (ICLS), in Oct. 2013. The conference adopted Guidelines concerning a statistical definition of employment in the environmental sector². At the same time the ILO worked on the draft methodology for collecting statistics on a set of variables relevant to the existence and nature of green jobs. The methodology consist of:

- a) a special module of questions to be attached to the regular household survey of the labour force;
- b) a special module of questions to be attached to the regular survey of establishments for employment and earnings.

A number of countries, including Albania, have participated in pilot programmes designed to test the practical application of the concepts and definitions presented in the draft guidelines and new data collection methodologies. The aim of these pilot surveys is to improve the methodology for data collection on employment in the environmental sector and green jobs. The piloting of the new data collection methodologies involved the canvassing of two specially designed country specific questionnaires on statistically designed samples of selected households and business establishments.

¹ Proposals for the statistical definition and measurement of green jobs, <http://www.ilo.org/global/statistics-and-databases/meetings-and-events/international-conference-of-labour-statisticians/19/lang--en/index.htm>

² <http://www.ilo.org/global/statistics-and-databases/standards-and-guidelines/guidelines-adopted-by-international-conferences-of-labour-statisticians/lang--en/index.htm>

2. OVERVIEW

In Albania no information has ever been collected on the employment in the environmental sector and green jobs. The main sources of labour market information are:

Structural Business Survey (SBS) is annual establishment survey conducted by Albanian National Institute of Statistics (INSTAT). The survey is based on a full enumeration of establishments with 10 and more employees and a sample of establishments with less than 10 employees. The survey collects information on a number of variables including the economic activity, employment, incomes and expenditures, investments, as well as some specific variables for the volume of construction, road transport, trade, hotel and bar café & restaurants. The target population is all establishments in non-agriculture that according to the statistical business register were active in December of the reference year.

Short term survey (STS) is a quarterly establishment survey conducted by INSTAT.. The survey is based on a full enumeration of establishments with 10 and more employed (about 4.000 establishments included in STS 2010), and a sample of establishments with less than 10 employed persons. The target population is all establishments in non-agriculture that according to the statistical business register were active in December of the reference year.

Labour force Survey (LFS) conducted by Albanian National Institute of Statistics. This survey aims to collect quarterly labour market information of households in Albania.

Annual Structural Survey of Economic Establishment (SBS) and Short term statistics survey (STS) use as a sampling frame the **Statistical Business Register (BR)**, and the Labour Force Survey (LFS) is based on and the **Population Census 2011** maintained and updated by INSTAT. Establishments and households are identified as statistical units.

The Statistical Business Register (BR) is a register of all non-agricultural legal unit (enterprises and institutions) that perform their economic activity inside Albanian territory. It contains the following variables:

- Identification variables (ID number, Legal form, Ownership, Name, Address and contact details)
- Stratification variables (Main economic activity, No. of employed, Geographical location, Institutional sector)
- Demographic variables (Date of creation, Date of cessation)

During summer 2012, the Business Register was completely updated, and all establishments which were active at the end of 2011 are now classified using NACE Rev.2 classification at 4 digits level.

The Population Census 2011 frame contains the contact details of all households in Albania. These details consist of the address of the household and the name of the head of the household. The availability of this recent sampling frame ensures that an effective and

representative sample can be selected for the survey. Primary sampling units (PSUs) selected at the first stage are the enumeration areas (EAs), which are small operational areas defined on maps for the 2011 Census enumeration. Albania has a total of 11,726 EAs (5,202 urban EAs and 6,524 rural EAs). The household addresses are indicated on maps which contain a detailed picture of the location of the household. It is possible, however, that some households no longer exist or have changed address since 2011, which in turn might affect the quality or the survey results.

None of these surveys provide information on employment in the environmental sector and green jobs.

For filling this gap and testing ILO methodology, INSTAT received financial support and technical assistance from the ILO to canvas and test the survey tools for the collection of new data on employment in the environmental sector and green jobs. For this purpose a special Green Jobs module was developed and attached to the 4th quarter of 2013 LFS, and a short pilot survey of establishments was designed and conducted in November 2013.

In the household survey, the data on employment in the environmental sector was collected from employed persons while for the establishment survey, data was provided by establishments.

These pilot surveys were executed by the Household Survey Statistics Directorate and Economic Statistics Directorate. For this purpose Green Job Survey (GJS) staff, which includes staff from both Directorates, have worked in close cooperation with each other. A valuable support for designing, processing and analysing Green Job Survey carried out by INSTAT was provided by Mrs Valentina Stoevska, Senior Statistician from the ILO Department of Statistics, who closely followed all project phases.

2.1. Objectives of the pilot surveys

Objectives of the pilot surveys were as follows:

- to test the practical application of the concepts and definitions concerning employment in the environmental sector and green jobs presented in the draft ICLS guidelines³ and the newly developed data collection methodologies;
- to evaluate the feasibility of collecting data with regard to employment in the environmental sector and green jobs through household surveys and establishment surveys;
- to test suitability of the model questionnaire;

³ Proposals for the statistical definition and measurement of green jobs, <http://www.ilo.org/global/statistics-and-databases/meetings-and-events/international-conference-of-labour-statisticians/19/lang--en/index.htm>

- to test the understandability of the concepts and definitions by respondents (household and establishments);
- to assist in further developing and improving concepts, survey instruments and tabulations;
- to provide a basis for identifying possible areas for further research;
- to collect some basic information on (i) the number of green jobs, (ii) the industrial, occupational, and geographic distribution of these jobs;

This paper provides information on the survey development, questionnaire design, concepts and definitions, methodology of data collection, as well as main findings of the module on employment in the environmental sector and green jobs.

3. CONCEPTS AND DEFINITIONS

The environmental activities are defined as those economic activities whose primary purpose is **to reduce or eliminate pressures on the environment** or **to make more efficient use of natural resources**. These activities are grouped into two broad types of environmental activity:

A. Environmental protection activities are defined as those activities whose primary purpose is the prevention, reduction and elimination of pollution and other forms of degradation of the environment. These activities include, but are not limited to:

- the prevention, reduction or treatment of waste and wastewater;
- the prevention, reduction or elimination of air emissions;
- the treatment and disposal of contaminated soil and groundwater;
- the prevention or reduction of noise and vibration levels;
- the protection of biodiversity and landscapes, including their ecological functions;
- monitoring of the quality of the natural environment (air, water, soil, groundwater);
- research and development on environmental protection; and
- the general administration, training and teaching activities oriented towards environmental protection.

B. Resource management activities are defined as those activities whose primary purpose is preserving and maintaining the stock of natural resources and hence safeguarding against depletion. These activities include, but are not limited to:

- reducing the withdrawals of natural resources (including through the recovery, reuse, recycling, and substitution of natural resources);
- restoring natural resource stocks (increases or recharges of natural resource stocks);
- the general management of natural resources (including monitoring, control, surveillance and data collection); and
- the production of goods and services used to manage or conserve natural resources.

Environmental Goods and Services are defined as goods and services produced by an establishment that benefit the environment or conserve natural resources.

- a) Environmental specific services comprise environmental protection and resource management specific services produced by economic units for sale or own-use. Examples of environmental specific services are waste and wastewater management and treatment services, and energy and water saving activities.
- b) Environmental sole-purpose products are goods (durable or non-durable goods) or services whose use directly serves an environmental protection or resource management purpose and that have no use except for environmental protection or resource

management. Examples of these products include catalytic converters, septic tanks (including maintenance services), and the installation of renewable energy production technologies (e.g. installation of solar panels).

- c) Adapted goods are goods that have been specifically modified to be more “environmentally friendly” or “cleaner” and whose use is therefore beneficial for environmental protection or resource management.

Adapted goods are goods that have been specifically modified to be more “environmentally friendly” or “cleaner” and whose use is therefore beneficial to environmental protection or resource management. Adapted goods are either:

- “Cleaner” - goods that help to prevent pollution or environmental degradation because they are less polluting at the time of their consumption and/or scrapping compared to equivalent “normal” goods. Equivalent normal goods are goods that provide a similar utility except for the impact on the environment. Examples include mercury-free batteries and cars or buses with lower air emissions.
- “Resource efficient” - goods that help to prevent natural resource depletion because they contain less natural resources in the production stage (for example, recycled paper and renewable energy, heat from heat pumps and solar panels); and/or in the stage of use (for example, resource efficient appliances, water-saving devices such as tap filters).

Adapted goods differ from environmental specific services and sole-purpose products because, while they serve an environmental protection or resource management purpose (i.e. being cleaner or more resource efficient), these are not the primary reasons for their production (e.g. the primary purpose for manufacturing buses with lower air emissions is transportation).

- d) Environmental technologies are technical processes, installations and equipment (goods), and methods or knowledge (services) whose technical nature or purpose is environmental protection or resource management. Environmental technologies can be classified as either:

- End-of-pipe (pollution treatment) technologies, defined as technical installations and equipment produced for measurement, control, treatment and restoration/correction of pollution, environmental degradation, and/or resource depletion. Examples include plants to treat sewage, equipment to measure air pollution, and facilities for the containment of high-level radioactive waste.
- Integrated (pollution prevention) technologies are defined as technical processes, methods or knowledge used in production processes that are less polluting and less resource intensive than the equivalent “normal” technology used by other producers. Their use is less environmentally harmful than relevant alternatives.

Activities in agriculture, fisheries and forestry are considered as environmental if environmentally friendly technologies and practices are used such as: organic farming, No-Till cultivation, Push Pull’ Farming, long-term crop rotation, the long-term use of bio-char, use of crop and livestock landraces, improved post-harvest storage and handling practice, adoption of crop and livestock diversification strategies, sustainable forestry, sustainable farm management

systems like agro forestry, and other practices that ensure that agricultural products are safe, of high quality, and produced in an environmentally and socially responsible way.

For agricultural production to be considered as organic the production (i) must be organic by intent and not by default (non-sustainable production systems that do not use synthetic inputs are not considered organic), (ii) the produce must mainly be for sale, not for self-consumption. Agricultural production is considered as organic if it relies on ecological processes, biodiversity and cropping cycles that are adapted to local conditions and generally excludes or strictly limits the use of chemical fertilizers and pesticides.

Chemical fertilizers are fertilizers prepared from non-organic materials manufactured through an industrial process (e.g. sodium nitrate, superphosphates). It is considered organic if

- Organic fertilizers are used (these are prepared from processed plant or animal material and/or unprocessed mineral material such as lime, rock or phosphate)
- Bio fertilizers are used (these are products containing living or dormant micro-organisms, such as bacteria fungi)

Organic agriculture may apply to crops or livestock.

Environmental sector consists of all economic units that carry out environmental activities.

Persons employed in environmental sector comprise all persons who, during a set reference period, were employed in at least one economic unit that is involved in the production of environmental goods and services (as defined above). In addition to persons employed in activities in the production of environmental goods and services, this includes persons employed in activities that make the establishment's processes "greener" by reducing or eliminating pressures on the environment or making more efficient use of natural resources.

Distinction is made between employment in the production of environmental goods and services (a) for consumption by other economic units (employment in the production of environmental output) and (b) for consumption by the economic unit in which the activity is performed (employment in environmental processes).

- (a) Employment in production of environmental outputs is defined as employment in the production of environmental goods and services for consumption outside the producing unit. It may exist in specialist or non-specialist establishments.
- (b) Employment in environmental processes is defined as employment in the production of environmental goods and services for consumption by the producing unit. It may exist in environmental but also production units that are not environmental in nature (specialist, non-specialist or own-account producer establishments). These are jobs in which workers' duties involve making their establishment's production processes more environmentally friendly by, for example, reducing pollution or making more efficient use of natural resources. It also includes workers that research, develop, maintain, or use technologies and practices to reduce the environmental impact of their establishment, or train the establishment's workers or contractors in these technologies and practices.

4. ORGANISATION OF GREEN JOBS PILOT SURVEYS, 2013

4.1. Questionnaire design

Based on the model questionnaires developed by the ILO Department of Statistics, and in consultations with the specialists of the Economic Statistics Directorate (SBS, STS) and the specialists of the Household Survey Statistics Directorate (LFS), green jobs pilot questionnaires for households and establishments were prepared (attached in annex 1 and 2).

A detailed manual for respondents and interviewers, based on information provided by the ILO, was also prepared and attached to the questionnaire. It contained explanations for all the variables of the questionnaire and, for some questions, one or more illustrative examples. There was a need to modify and extend the number of examples to accommodate the situation in Albania and make sure the technical language is understandable by establishments and households. The comprehensiveness and understandability of the manual was tested during the pilot surveys.

4.2. Sample frame and sample design

4.2.1. Establishment Survey 2013

The survey of establishments was carried out among 300 establishments. The survey was canvassed over the whole country even though the majority of establishments were located in large districts (Tirana, Durrës, Elbasan, and Vlorë). Excluded from the survey were establishments in agriculture, forestry and fishing industry.

The sampling frame for the for establishments was based on Business Register that covers all establishments active at the end of 2012 , coded according to NACE Rev. 2 (at 4-digit level). A random sample of 300 establishments was selected to cover NACE Rev. 2 divisions (few establishments at 3 digit level on NACE Rev.2. were also selected to guarantee a better representativeness) and all size classes (in terms of number of employed) (see table 1a. for distribution of establishments). In addition to contact details of selected establishments, the list contained information about their main economic activity, No. of employed, geographical location, and institutional sector they belong.

Table 1a. Distribution of the establishments in the sample by economic activity and size of establishment

Economic activity, NACE Rev.2	Description	0-19	20-49	50-79	80-249	250+	Total
B	Mining and quarrying	1	-	-	-	-	1
C	Manufacturing	19	17	6	10	1	53
E	Water supply, sewerage, waste management and remediation activities	1	1	-	1	1	4
F	Construction	35	20	10	4	-	69
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	41	15	4	4	1	65
H	Transportation and storage	6	5	-	-	1	12
I	Information and communication	9	5	-	3	-	17
J	Financial and insurance activities	3	3	-	-	1	7
L	Real estate activities	-	2	-	-	-	2
M	Professional, scientific and technical activities	6	6	1	-	-	13
N	Administrative and support service activities	10	3	1	1	1	16
P	Education	5	4	-	1	-	10
Q	Human health and social work activities	1	-	-	-	-	1
R	Arts, entertainment and recreation	3	4	2	1	1	11
S	Other service activities	10	7	-	-	2	19
Total		150	92	24	25	9	300

4.2.2. Labour Force Survey module 2013

The LFS sample is based in a two-stage sampling procedure. In the first stage are selected the geographical areas with a proportional probability to the size of the enumeration area. In the second stage within each of the geographical areas (once selected in the first stage) are selected a fix number of 8 households by equal probability systematic sampling method. A rotational sampling design is used, whereby a household once initially selected for interview, is retained in the sample for a total of five consecutive quarters. So, in each quarter, in the selected sample,

1008 new households are added and the same number of households that has been interviewed for five consecutive quarters is dropped out from the sample. The sample size for each calendar quarter is 5040 households.

The sample for the Green Jobs module was designed to cover all households introduced in the rotation sample for the IVq 2013 Labour Force Survey. The survey therefore covered a sample of 1003 households located in 126 primary sampling units (PSU) in the urban and rural areas of all the 'prefectures' of Albania.

The sampling frame for the IVq 2013 LFS was based on data for the enumeration areas (EAs) defined for the 2011 Albania Census of Population and Housing. The availability of this recent sampling frame ensured that an effective and representative sample can be selected for the survey. The PSUs selected at the first stage are the EAs, which are small operational areas defined on maps for the 2011 Census enumeration. Albania is divided administratively into 12 'prefectures' and 36 districts.

Ideally, all persons in the sample households covered in IVq 2013, would have been expected to answer the GJ module. However, in the interest of time and cost, as well as taking in consideration the respondent burden on these households that were also asked to complete the LFS questionnaire, it was decided, for the GJ module, to interview only two household members from each of the sampled households. Table 1b. shows the distribution of households in GJS sample by 'prefecture', urban and rural strata.

Table 1b.. Distribution of the households in the sample for the GJ module

District	Urban	Rural	Total
Berat	24	27	51
Dibër	16	32	48
Durrës	56	40	96
Elbasan	40	64	104
Fier	40	72	112
Gjirokastër	16	24	40
Korçë	32	48	80
Kukës	16	24	40
Lezhë	16	32	48
Shkoder	32	48	80
Tiranë	168	64	232
Vlorë	48	24	72
Total	504	499	1003

4.3. Fieldwork

4.3.1. Establishment Survey 2013

Although initially planned as a module to the Short Term Survey (STS), due to technical reasons and delay in the start day of the project, the GJ establishment survey had to be conducted as a standalone survey, using the same sample of establishments as the one used for the Structural Business Survey (SBS)⁴.

The survey was conducted in November 2013, among 3000 establishments in the sample.

The respondents were asked to report on their establishment's involvement in the production of various categories of environmental goods and services or in using technologies and practices aimed at reducing or eliminating pressures of their activities on the environment or to make more efficient use of natural resources, in the preceding 12 months. Also they were asked to indicate the occupations of those workers that spend more than half of their time on environmental processes.

Qualitative information regarding skills mismatch in the environmental sector, environmental sensitivity of workers, financial constraints that establishments face and expectations for increased demand for environmental goods and services were also collected.

4.3.2. Labour Force Survey module 2013

The GJS module was designed to be compiled by enumerators and it was formatted for scanning in order to automatically enter data using a scanning system.

Interviewers were recruited to cover the entire country. Interviewers' training was held during one full day in Tirana on 15th November 2013. The fieldwork was organised between 15th November and 15th December 2013.

Field supervision was organized to monitor the progress of work. During the field supervision there was some verification concerning the completion of the questionnaire, i.e. whether or not the interviewer went to the household concerned and how questionnaires were completed. Field supervision was done in the 'prefectures' of Gjirokaster, Vlore, Fier, Elbasan, and Tirana.

The respondents were asked to report on their involvement in the production of various categories of environmental goods and services or in using technologies and practices aiming at reducing or eliminating pressures of their activities on the environment or to make more efficient use of natural resources, in the preceding 12 months.

⁴ The sample size for the SBS is bigger than the STS sample.

4.4. Response rates and data processing

Data entry of the filled questionnaires was made in INSTAT using the scanning system. Before scanning manual/visual checks were done to ensure that data were readable by the machine. Data entry was made as soon as the questionnaires were available in INSTAT.

The GJS pilot database was prepared by using SPSS software, and variable names, type and formats were checked. Additional variables were created as requested by ILO. Some basic control edits and consistency rules were applied in order to check the performances of the scanning system, the completeness of information and the correlation between the variables. The response rate was calculated with the formula below:

- for establishments:

$$\frac{\text{number of completed interviews}}{\text{number of units in the sample} - \text{ineligible units}} \times 100\%$$

- for households:

$$\frac{\text{number of completed interviews}}{\text{number of units in the sample}} \times 100\%$$

The overall response rate for establishments was 93.6 per cent and for households 93.0 per cent. Number of responses by economic activity and for all households are shown in tables 2a. and 2b. Ineligible units (shown as “non-contact”) are those establishments that were closed at the time of the survey, or households that could not be located at the time of the survey.

Table 2a. Establishment Survey: Sample and response

NACE Rev.2 Sections	Description	No. of establishments in the sample	No. of responding establishments in the sample
B	Mining and quarrying	1	-
C	Manufacturing	53	43
E	Water supply, sewerage, waste management and remediation activities	4	4
F	Construction	69	45
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	65	46
H	Transportation and storage	12	10
I	Information and communication	17	15
J	Financial and insurance activities	7	7
L	Real estate activities	2	1

M	Professional, scientific and technical activities	13	7
N	Administrative and support service activities	16	14
P	Education	10	6
Q	Human health and social work activities	1	1
R	Arts, entertainment and recreation	11	10
S	Other service activities	19	11
Total		300	220

Table 2b. LFS module: Sample and response

No. of households in the sample	No. of responding households in the sample	No. of employed in the sample
1003	933	1226

Table 3a shows the outcome of fieldwork for the establishment survey. Questionnaires for 65 establishments could not be completed because of “non-contact”, 15 establishments refused to participate in the survey and 220 establishments agreed to answer to the questionnaire. Table 3b shows the outcome of fieldwork for the household survey. Out of 1003 households, 61 households could not be located, and only 9 refused to participate. 1226 individual questionnaires were completed for persons living in the 993 participating households who declared being employed some time over the preceding 12 months.

Table 3a: Establishment survey: Planned interviews and their outcomes

	No. of questionnaires
Questionnaires to deliver to establishments	300
Non contacts (ineligible units)	65
Refusal	15
Completed questionnaires	220

Table 3b: LFS module: Planned interviews and their outcomes

	No. of questionnaires
Questionnaires delivered to households	1003
Non contacts (ineligible units)	61
Refusal	9
Responding households	933
Completed individual questionnaires (employed in the preceding 12 months)	1226

4.5. Item non response and errors in the data

After scanning, a number of validation tests were executed and number of errors and inconsistencies detected. Some of the errors that were found are listed in the table below.

Table 4. Some type of errors or inconsistencies detected

Types of error or inconsistencies between variables	Corrections	No. of cases
Some values went missing during the scanning process (the missing values came from the errors in the scanning system)	After visual control of the paper questionnaire the value was inserted	70
Question 3 in both questionnaires: "No" was inserted in spite of the positive responses to the sub questions	Response to question 3 was changed from 'no' to 'yes'	20
Question 7 of the establishment questionnaires: Some establishments that had no individuals working more the half of their working time did do not insert "0"	0 was added where missing	40
Questionnaires for three establishments were marked as completed although the questionnaires were empty	Questionnaires were recoded as "No contact"	3
The gender of the person interviewed was not specified	Gender was inserted after the name of the respondent	4

Also, there were 23 cases where respondents confused 'Employment in production of environmental goods and services' with 'Employment in environmental technologies and practices'. There were seven cases (listed below) where respondents indicated using environmental technologies and practices not listed in the questionnaire. These included:

- Planting trees
- Manufacturing of efficient wood burning chimneys
- Organic waste
- Work in cleaning the school area
- Drainage of wastewater
- Boilers creating energy in the form of heat using used paper as fuel
- Soil drainage

4.6. Imputation and editing

In order to deal with item non-response, some basic control edits and consistency rules were defined in SPSS syntax. An SPSS procedure, consisting of several subsequent steps, was prepared to check the completeness of information, the correlations between the variables, and to verify whether respondents complied with the definitions. Many problems were "deterministic" in nature, therefore easy to identify and easy to solve. A number of simple methods were used to impute missing or incorrect data (when necessary). The electronic data collection, that has onscreen validation checks, could significantly reduce the number of errors and inconsistencies.

4.7. Limitations of the surveys

The pilot surveys had a number of limitations that may affect the reliability of the indicators derived. These include but are not limited to the following:

- Sample size of the surveys;
- Coverage of the establishment survey was limited to non-agriculture only;
- Assumptions made (For estimating employment in environmental output it is assumed it corresponds to the share of revenue accounted for by sale of environmental goods and services in total sales);
- No details on the quality of employment were collected;
- Stakeholders were not consulted on the content of the surveys.

4.8. Lessons learned, experiences and suggestions

- (i) There has to be a functioning technical committee of as many stakeholders as possible.
- (ii) The list of simple standardized definitions and examples will need to be further elaborated.
- (iii) Field staff will require extensive supervision for both the establishment and household survey to reduce the high level of non-contact.
- (iv) Establishments do not willingly participate in surveys, especially if they are not paid for the data they are asked to provide. Therefore the questionnaires should be as simple and short as possible..
- (v) The household based GJ module should be linked to a survey such as the labour force, but not canvassed at the same time. This should help to reduce response burden and increase the quality of data collected. It will also allow for data to be cross tabulated by various variables already covered in the LFS.
- (vi) Given the small number of jobs in the environmental sector, establishment and agricultural censuses may provide more reliable and complete results, especially at more disaggregated level, compared with sample based surveys.
- (vii) Most of the establishment surveys, and even censuses, do not include agricultural activities in the target population. Therefore establishment survey data should be complemented with household survey data.
- (viii) Overlap between employment in environmental output and environmental processes has not been estimated due to complexity of the methodology.
- (ix) For monitoring progress over time the survey(s) should be repeated in regular intervals.

5. MAIN FINDINGS

5.1. Establishment survey

In 2013, the percentage of all employed that worked in establishments that produce environmental output was 42 per cent. However only 11.7 per cent of all employed were actively involved in the production of environmental output. Many of these jobs are found in establishments that primarily produce goods and provide services that benefit the environment or conserve natural resources. Most of the jobs are in the manufacturing and construction industry.

In 2013, the percentage of all employed working in establishments using environmental technologies was 13.2 per cent. However only 4.4 per cent of all employed spend more than half of their work time using these technologies. Close to 80 per cent of these jobs are occupied by persons with elementary occupations, craft and trade related occupations or plant and machine operators.

Table 5: Employment in the environmental sector

	Per cent
Employed in non-agriculture, total	100.0
Employed in establishments that produce environmental output	42.0
-Employed involved in the production of environmental output	11.7
Employed in establishments that use environmental processes in production process	13.2
-Employed that spent more than half of their work-time in environmental processes	4.4

Establishments by economic activity

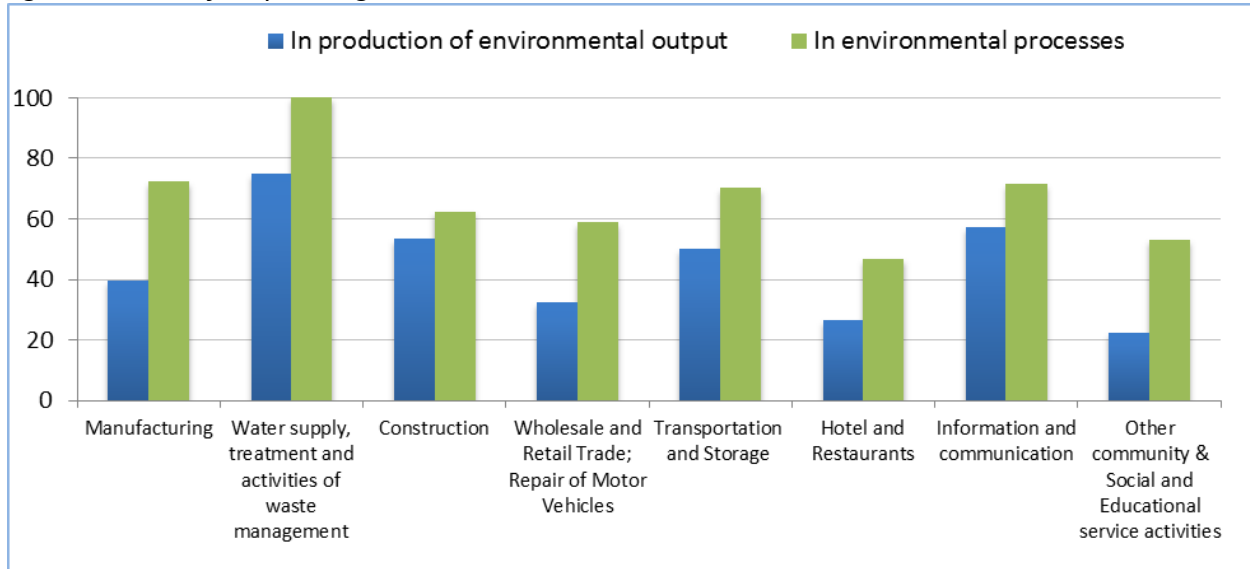
The sectoral composition of a national economy very largely determines the challenges posed by – but also the potential for – economic development and environmental sustainability and their likely impact on establishments and workers. Economic sectors that are directly dependent on natural resources and the climate, or which are major consumers of resources or significant polluters or a combination of both, have a significant potential to reduce their environmental impact.

Statistics on the percentage of establishments using green technologies (total and by economic activity) allow an assessment of general progress towards a greener economy.

In Albania, about 38 per cent of all establishments in non-agriculture produce at least one type of environmental goods or services and close to 60 per cent use at least one green technology or practice. Because of their close relationship to environment, all establishments in water supply,

treatment and activities of waste management activities are considered as establishments that use environmental processes.

Chart 6: Establishments active in the environmental sector by economic activity in non-agriculture, % of responding establishments



Distribution of establishments involved in production of environmental output is likely to largely reflect the industry composition of the overall economy. In Albania, most of the establishments that are engaged in production of environmental output are in the manufacturing and construction industry. Distribution of establishments using environmental technologies is similar.

Chart 7: Establishments in non-agriculture, involved in the production of environmental output, distribution, %

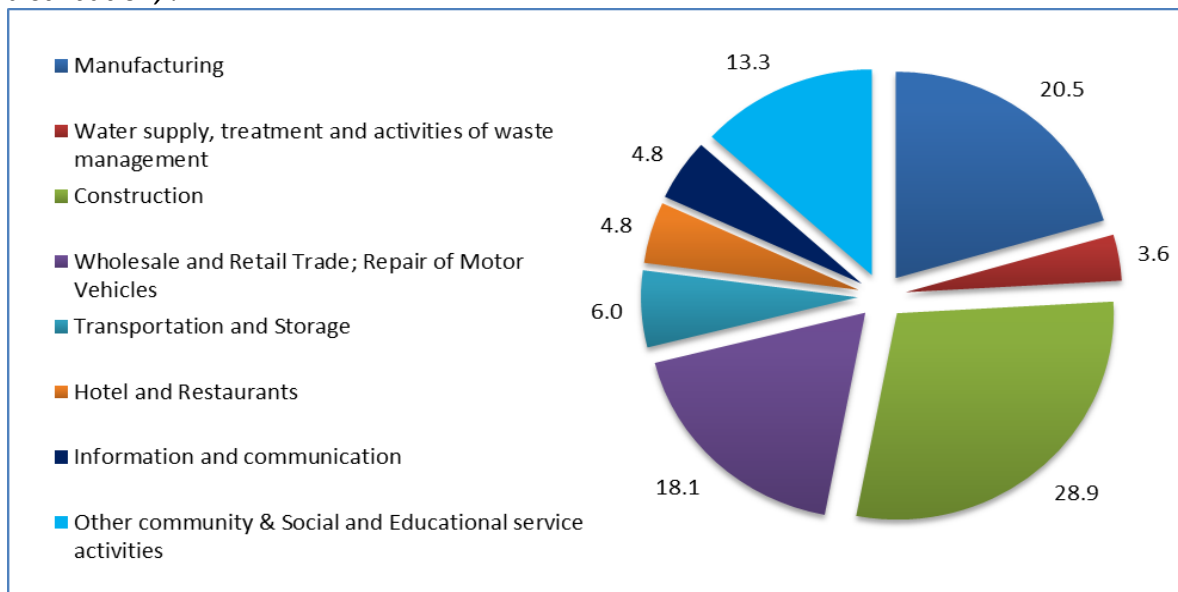
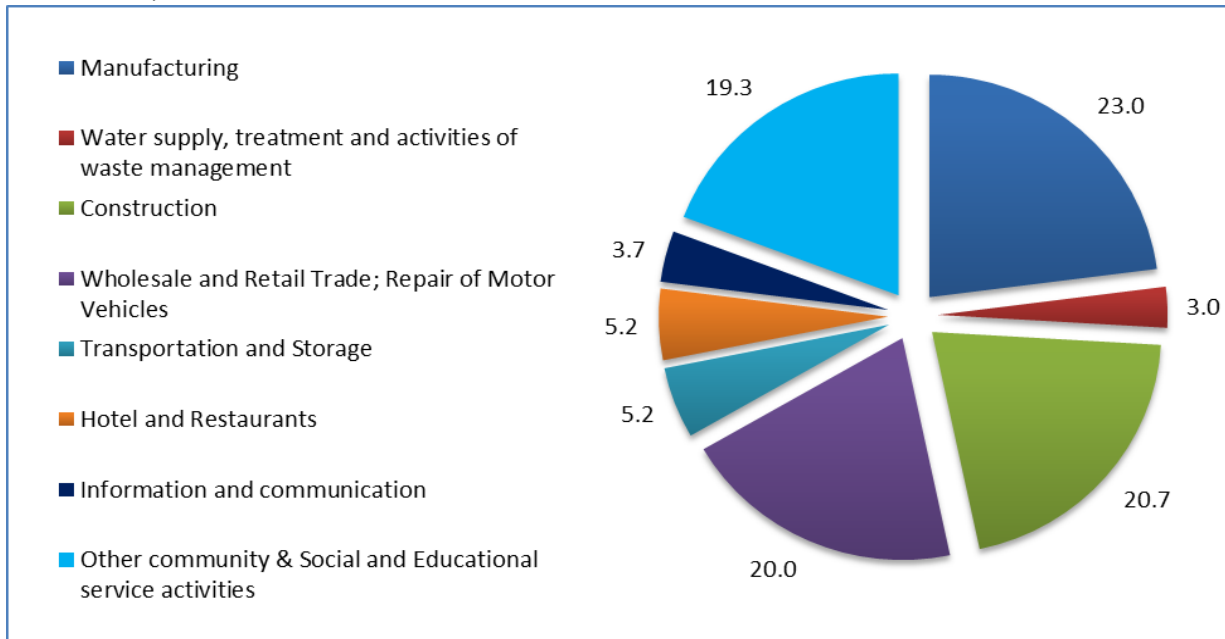


Chart 8: Establishments in non-agriculture that use environmental processes in production, distribution, %

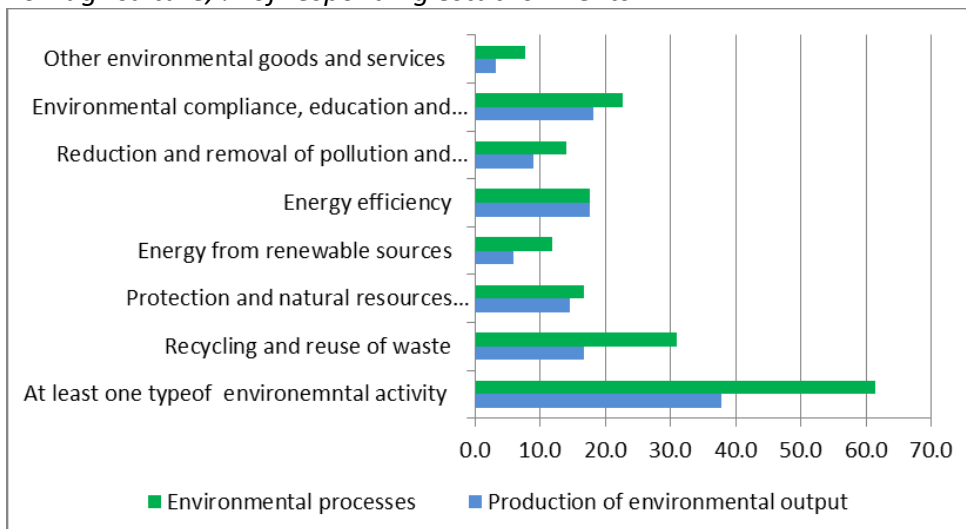


Establishments by type of environmental activity

Statistics on employment by type of technologies, processes and methods for restructuring organization and production processes and for reducing the environmental impact of production will provide important input for labour market planning and for an understanding of which technologies are likely to create employment opportunities.

In Albania, over 40 per cent of all establishments in non-agriculture are involved in recycling and about 18 per cent recycle or re-use the waste they produce.

Chart 9: Establishments active in the environmental sector by type of environmental activity in non-agriculture, % of responding establishments



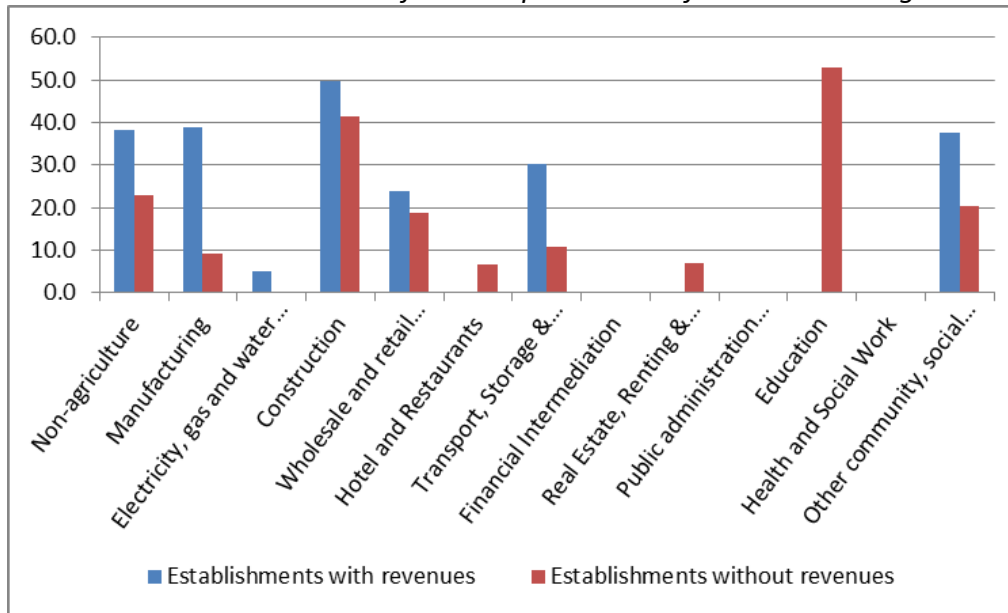
Revenues from sales of environmental goods and services

Only 42 per cent of all establishments involved in the production of environmental output, have revenues from the sales of environmental goods and services. 58 per cent of those that do produce some environmental goods and services do not have revenues from the sales of these goods and services. This latter category includes non-profit organizations, government agencies, research organizations and new businesses that produce environmental goods and/or services without generating income.

Employment in establishments producing environmental output

The percentage of employed who are involved in the production of environmental output is much higher in establishments that have revenues from the sales on environmental output than in those that do not have revenues (lose to 40 per cent for the former vs. just over 20 per cent for the later)

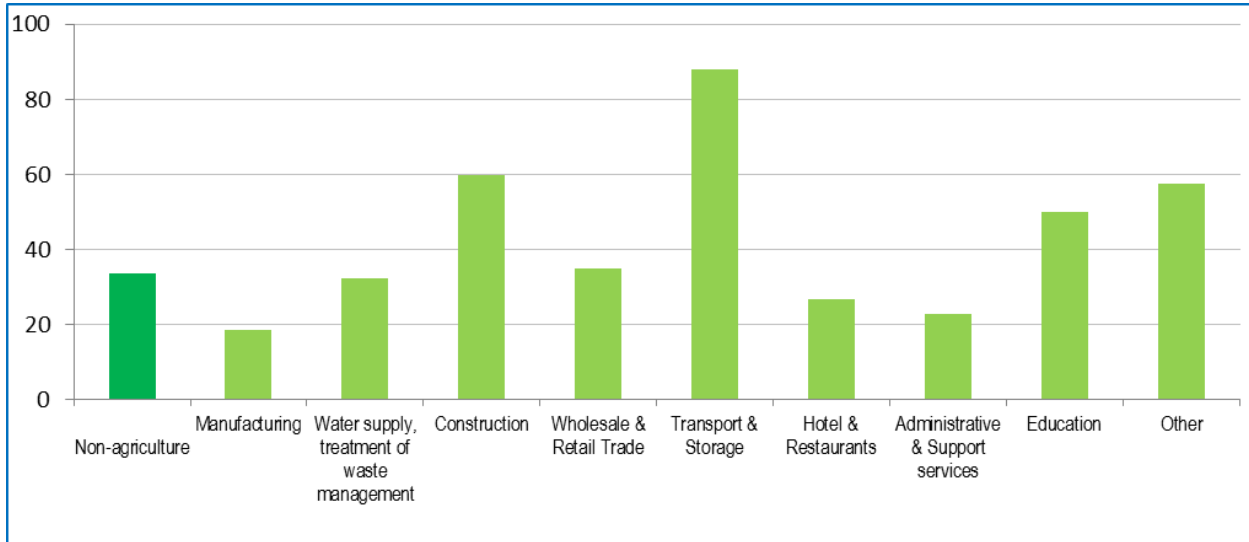
Chart 10: % of employed involved in the production of environmental output (in establishments WITH and WITHOUT revenues from the production of environmental goods and service)



Employment in establishments using environmental technologies

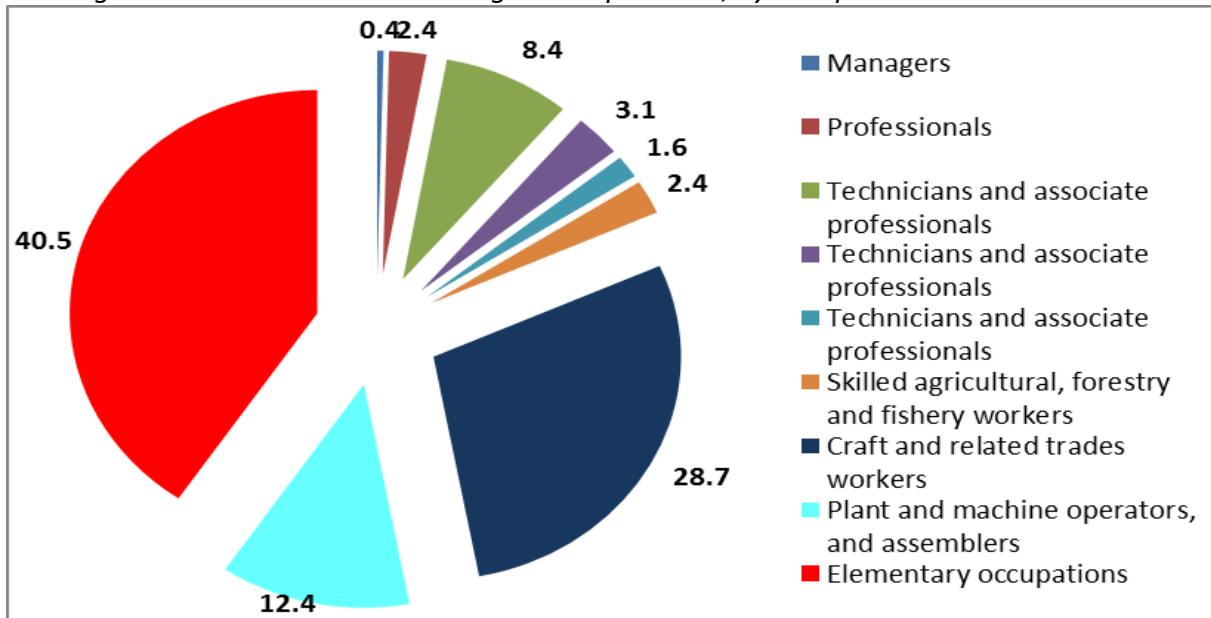
About 30 per cent of those employed in establishments using at least one environmental technology spend more than 50 per cent of their time working with environmental technologies and practices

Chart 11. % of employed in environmental processes that spend more than half of their working time working with environmental technologies and practices



The distribution of employment in environmental processes across specific occupations differs between the green economy and the overall economy and in key occupations. Elementary occupations and craft and trade related occupations are proportionately much more common in the green than in the overall economy. Close to 80 per cent of all employed in environmental processes have elementary occupations, craft and trade related occupations or are plant and machine operators. (See chart 11).

Chart 12: Employed in environmental processes that spend more than half of their working time working with environmental technologies and practices, by occupation



5.2. Household survey

In 2013, 50.7 per cent of all employed were involved in the production of at least one category of environmental output. However only 21.9 per cent of all employed spent more than half of their work time on the production of environmental output. Many of these jobs are jobs involved in production of goods and provide services that conserve natural resources or benefit the environment (recycling).

In 2013, the percentage of all employed that spend anytime using at least one environmental technology was 64.8 per cent. However only 18.8 per cent of all employed spend more than half of their work time using environmentally friendly technologies.

Chart 13: Employment in the environmental sector

	per cent
Total employed	100.0
Employed involved in the production of environmental output	50.7
-Employed involved in the production of environmental output and spend spent more than half of their working time	21.9
Employed in environmental processes	64.8
-Employed in environmental processes - full time equivalent	18.8

Chart 14: Employed engaged in the production of at least in one category of environmental output, %

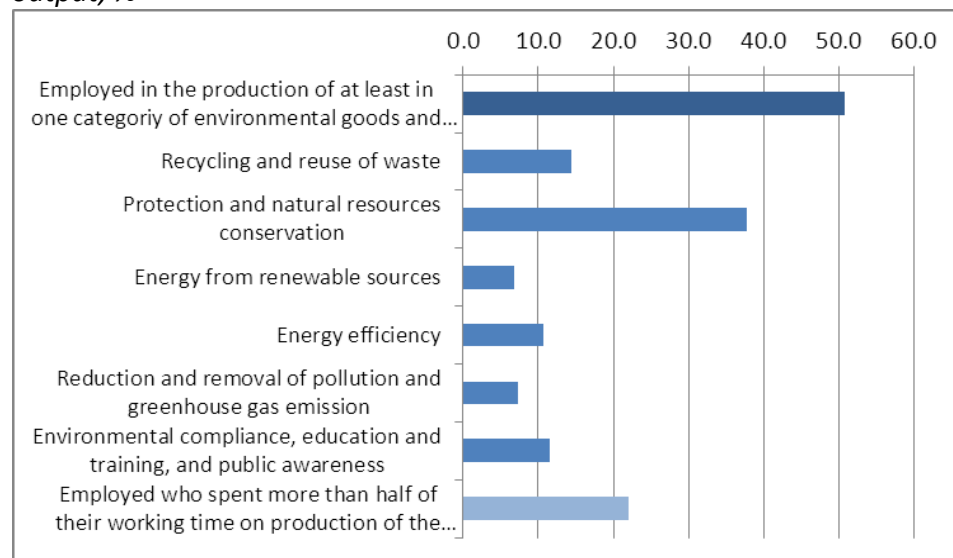
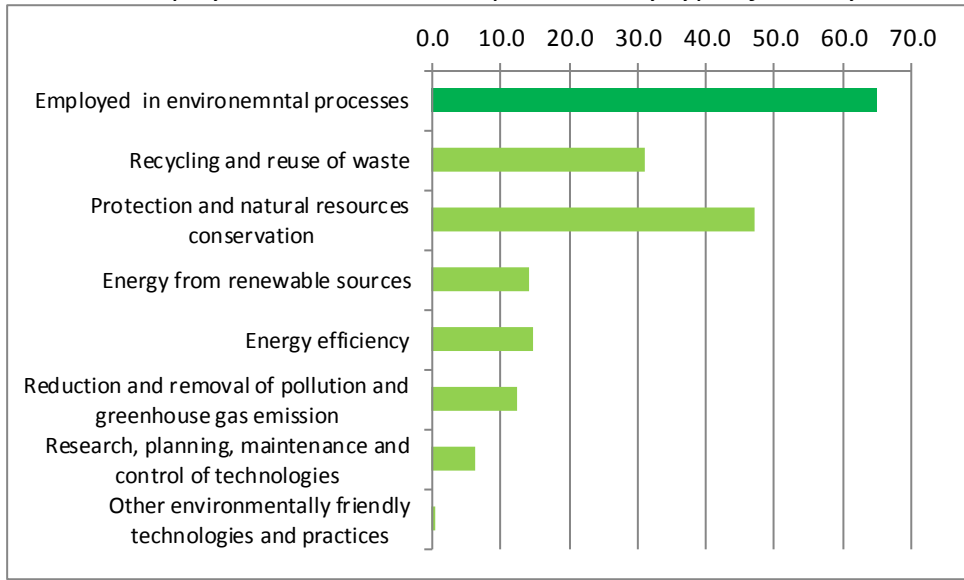


Chart 15: Employed in environmental processes, by type of activity, %

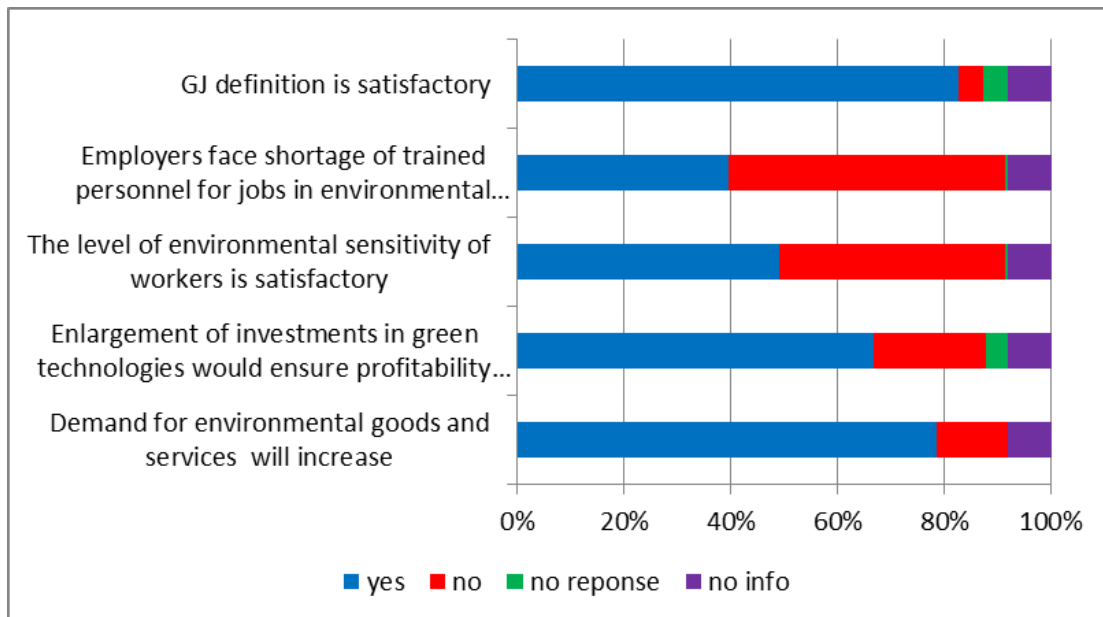


5.3. Establishments' perceptions and expectations

As part of the pilot establishment survey a number of optional questions were asked regarding skills mismatch in the environmental sector, environmental sensitivity of workers, financial constraints they face and expectations for increased demand for environmental goods and services. The results are the following:

- Almost 40 per cent of employers face shortage of trained personnel for jobs in the environmental sector.
- Only about half of the employers think that the level of environmental sensitivity is satisfactory.
- More than 65 per cent of employers believe that enlargements of investment in green technologies will ensure profitability in the medium and long term.
- Majority of employers also believe that the demand for environmental goods and services will increase.

Chart 16: Establishments' perceptions and expectations, %



Q1

What was the total employment at this establishment as of 30 Sept.2013? (Include paid employees, employers and contributing family works, both full- and part-time workers as well as temporary and seasonal workers)?

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Part 1: Environmental goods and services

Q2

During the last 12 months did your establishment produce any of the following categories of environmental goods and services intended for consumption outside your establishment (These goods and services include research and development, installation, and maintenance services)?

Q2.1

Recycling and reuse of waste

(a) Product and services that reuse, collect, sort, recycle, remanufacture waste material and/or compost solid waste (including treatment and disposal of hazardous waste). It includes manufacturing of containers for collection of recycled materials, waste bags, and equipment for waste collection and waste treatment and sale of second hand clothing, appliances, and vehicles.

1 Yes 2 No

Q2.2

Protection and natural resources conservation

(b) Product and services that protect soil, ground water, aquatic resources and/or improve natural resources conservation (e.g. organic agriculture, sustainable forestry; trees for reforestation; planting trees; remediation of soil, sediment and sludge (biological, physical and thermal treatment); land management, conservation of soil, water, biodiversity and wildlife; control, containment and monitoring services (air, water, soil); protection and remediation of timber resources, protection and remediation of aquatic resources, etc.);

1 Yes 2 No

Q2.3

Energy from renewable sources

(c) Product and services that generate electricity, heat or fuel from non-fossil renewable sources and/or from waste (e.g. production of hydropower, solar power, geothermal power, wind power, ocean, landfill gas, solid waste power, biomass power, manufacturing of wind turbine equipment, solar heating equipment, photovoltaic energy equipment, biomass-fired industrial boilers, etc.)

1 Yes 2 No

If “yes” to at least one category of environmental goods and services in Q2 go to Q3, otherwise go to Part 2.

Q3

During the last 12 months did your establishment have any revenues from the sale (including market value of goods and services rendered for transfer within your company) of environmental goods and services checked “yes” in Q2?

1 Yes 2 No

Q4

If “Yes to Q3 what percentage of this establishment sales revenues during the last 12 months came from sales of environmental goods and services checked “Yes” in Q2?

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Q5

If “No” to Q3 what percentage of employed in this establishment works on production of environmental goods and services checked “Yes” in Q2?

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Part 2: Environmental processes

Q6

In the last 12 months, did your enterprise use any environmental goods and services for consumption within your establishment or technologies and practices aiming at reducing or eliminating pressures of your establishment on the environment or to make more efficient use of natural resources?

1 Yes 2 No

If “Yes” please mark one or more of the following environmental technologies and practices used at your workplace and indicate the number of workers at your workplace that spent any of their time during the month of September involved in:

- researching, developing, maintaining, using or installing technologies and practices to reduce the environmental impact of their establishment, or
- training the establishment’s workers or contractors in these technologies or practices.

Q6.1**Recycling and reuse of resources**

(a) Use technologies or practices to reduce or eliminate the creation of waste material as a result of your operations (e.g. collecting and reusing or recycling waste (glass, metals, paper, rubber, textiles) and waste water; composting solid waste, remanufacturing, etc.).

1 Yes 2 No

If Yes, how many of the workers were involved

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Q6.2**Protection and natural resources conservation**

(b) Use technologies or practices in your operations to conserve natural resources (e.g. Protection and remediation of soil (includes implementing organic farming), groundwater and surface water; using storm water; protection of biodiversity and landscapes; protection and remediation of timber resources (includes sustainable forestry practices); protection and remediation of aquatic resources; etc.).

1 Yes 2 No

If Yes, how many of the workers were involved

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Q6.3**Energy from renewable sources**

(c) Generate electricity, heat or fuel from renewable sources for use within your establishment (e.g. hydropower, solar, geothermal, wind, ocean, landfill gas, solid waste, biomass, etc.)?

1 Yes 2 No

If Yes, how many of the workers were involved

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Q6.4**Energy efficiency**

(d) Use technologies and practices to increase energy efficiency within your establishment? (e.g. use energy efficient appliances, energy efficient manufacturing equipment, energy efficient lighting, energy efficient buildings, use of alternative fuel vehicles (Fuel cells/advanced batteries, hybrid vehicles, etc.)

1 Yes 2 No

If Yes, how many of the workers were involved

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Q6.5**Reduction and removal of pollution**

(e) Use technologies or practices to reduce or eliminate the creation or release of pollutants or toxic components as a result of your operations and/or to remove hazardous waste from environment (e.g. carbon monoxide, sulphur dioxide, nitrogen oxides, herbicides and pesticides, heavy metals, radioactive contamination, etc.).

1 Yes 2 No

If Yes, how many of the workers were involved

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Q6.6**Research, planning, maintenance and control of technologies**

(f) Research and development of processes to conserve energy or natural resources or to reduce pollution; planning, implementing, and monitoring of these processes; maintaining or installing equipment or infrastructure associated with the processes; measuring and controlling outputs of the process.

1 Yes 2 No

If Yes, how many of the workers were involved

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GREEN JOB PILOT SURVEY 2013
QUESTIONNAIRE FOR HOUSEHOLDS

All the data in questionnaire are protected by law and shall be used only for statistical purposes.
Thank you for your cooperation!

F1 Please complete the data requested below

1. District

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2. Municipality or Commune

--	--	--

3. EA number

--	--	--	--	--

4. City or village

--	--	--	--	--	--	--	--	--	--

5. PSU

--	--	--	--	--

6. Household number

--	--	--

7. Name and Surname of the household head

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8. Phone number

--	--	--	--	--	--	--	--	--	--

F2 Response indicator

1 Completed

2 No contact

3 Refuse

Here should settle all family members 15 years and over.

Code	Name / Surname	Sex 1. Male 2. Female	Age in years	Employment status 1. Employed 2. Unemployed
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

District

Municipality /
Commune

EA number

PSU

HH number

Code of the
respondent

Part 1: Environmental goods and services

Q1

During the last 12 months did your produce any of the following categories of environmental goods and services intended for consumption outside your worksite? These goods and services include research and development, installation, and maintenance services.

(Internal green practices, such as recycling programs, use of renewable energy, use of green office products or cleaning materials, use of energy-efficient or pollution-reducing equipment or practices at the worksite, etc. are to be reported in Q3)

Q1.1

Recycling and reuse of waste

(a) Goods and services that reuse, collect, sort, recycle, remanufacture waste material and/or compost solid waste (including treatment and disposal of hazardous waste). It includes manufacturing of containers for collection of recycled materials, waste bags, equipment for waste collection and waste treatment, and sale of second hand clothing, appliances, and vehicles.

1 Yes 2 No

Q1.2

Protection and natural resources conservation

(b) Product and services that protect soil, ground water, aquatic resources and/or improve natural resources conservation (e.g. organic agriculture, sustainable forestry; trees for reforestation; planting trees; remediation of soil, sediment and sludge (biological, physical and thermal treatment); land management, conservation of soil, water, biodiversity and wildlife; control, containment and monitoring services (air, water, soil); protection and remediation of timber resources, protection and remediation of aquatic resources, etc.).

1 Yes 2 No

Q1.3**Energy from renewable sources**

c) Product and services that generate electricity, heat or fuel from non-fossil renewable sources and/or from waste (e.g. production of hydropower, solar power, geothermal power, wind power, ocean, landfill gas, solid waste power, biomass power, manufacturing of wind turbine equipment, solar heating equipment, photovoltaic energy equipment, biomass-fired industrial boilers, etc.).

1 Yes 2 No

Q1.4**Energy efficiency**

d) Goods and services that are energy efficient (e.g. energy efficient manufacturing equipment, appliances, buildings and vehicles; energy efficient lighting; products and services that improve the energy efficiency of buildings and the efficiency of energy storage and distribution, such as Smart Grid technologies, etc.).

1 Yes 2 No

Q1.5**Reduction and removal of pollution and greenhouse gas emission**

(e) Goods and services that reduce or eliminate the creation of pollutants, toxic components, hazardous materials, or waste materials (e.g. water and sewage treatment plants, equipment for treatment of industrial waste water and sewage, waste-to-energy facilities, manufacture of waste gas absorbers, waste gas flare/incinerator, catalytic converters, pollutant recovery condensers, filters, absorbers, more-efficient wood-burning stoves, manufacturing of rechargeable batteries, etc.

1 Yes 2 No

Q1.6**Environmental compliance, education and training, and public awareness**

(f) Goods and services that enforce environmental regulations and standards, provide education and training related to green technologies and practices, increase public awareness of environmental issues.

1 Yes 2 No

Q3.1

Recycling and reuse of resources

(a) Use technologies or practices to reduce or eliminate the creation of waste material as a result of your operations (e.g. collecting and reusing or recycling waste (glass, metals, paper, rubber, textiles) and waste water; composting solid waste, remanufacturing, etc.)

1 Yes 2 No

If YES, what percentage of your time?

Q3.2

Protection and natural resources conservation

(b) Use technologies or practices in your operations to conserve natural resources (e.g. protection and remediation of soil (includes implementing organic farming), groundwater and surface water; using storm water; protection of biodiversity and landscapes; protection and remediation of timber resources (includes sustainable forestry practices); protection and remediation of aquatic resources; etc.).

1 Yes 2 No

If YES, what percentage of your time?

Q3.3

Energy from renewable sources

(c) Generate electricity, heat or fuel from renewable sources for use within your establishment? (e.g. hydropower, solar, geothermal, wind, ocean, landfill gas, solid waste, biomass, etc.).

1 Yes 2 No

If YES, what percentage of your time?

Q3.4**Energy efficiency**

(d) Use technologies and practices to increase energy efficiency within your establishment? (e.g. use energy efficient appliances, energy efficient manufacturing equipment, energy efficient lighting, energy efficient buildings, use of alternative fuel vehicles (Fuel cells/advanced batteries, hybrid vehicles, etc.)

1 Yes 2 No

If YES, what percentage of your time?

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Q3.5**Reduction and removal of pollution**

(e) Use technologies or practices to reduce or eliminate the creation or release of pollutants or toxic components as a result of your operations and/or to remove hazardous waste from environment (e.g. carbon monoxide, sulphur dioxide, nitrogen oxides, herbicides and pesticides, heavy metals, radioactive contamination, etc.).

1 Yes 2 No

If YES, what percentage of your time?

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Q3.6**Research, planning, maintenance and control of technologies**

(f) Research and development of processes to conserve energy or natural resources or to reduce pollution; planning, implementing, and monitoring of these processes; maintaining or installing equipment or infrastructure associated with the processes; measuring and controlling outputs of the process?

1 Yes 2 No

If YES, what percentage of your time?

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