External evaluation report - part 1.1

BU.G.S Workpackage 2: The green skills bottlenecks identification model

Synoptic report on:

Analysis of EU legislation

Guidelines to set up the green skills gap identification

The tuning process, tools adopted and the data mining analysis method

General

The evaluated **Synoptic report is a deliverable of BUGS WP2 »**The green skills bottlenecks identification model«. The evaluation refers to a pdf document from 9 Dec. 2015.

The document contains 42 pages, it is written in English, and it contains the project logo, the EU logo and the information on the EU Programme for Employment and Social Solidarity - PROGRESS (2007-2013), by which BUGS project was co-funded.

The authors of the report and the participating project partners are not indicated.

The content of the document is structured in 3 paragraphs (Introduction, Guidelines for the bottlenecks identification process, Training gaps data-mining) and 3 annexes. The report also contains 17 figures.

The Introduction **chapter 1** describes the methodology for elaboration of the report, it describes the type of the stakeholders involved in overview of the situation, Eurostat as an important source of data used in data-mining and the methodological approach itself. The BUGS data-mining process contains 9 steps that lead to identification of green skills gaps in the construction sector.

The **chapter 2** describes the guidelines for the bottlenecks identification process. For the design of the data-mining analysis software four steps process is reported; starting from the study of EU legislation in EE and RES in building sector, and from identification of green skills gaps, to the tuning of sample of collected data (questionnaires for associations and companies) and finalization of the data-mining software and finally to development of data-mining analysis software. The analysis software is aiming at identification of green skills gaps and training needs (SMEs); definition of the appropriate training path for removing the bottlenecks (trainers), definition of necessary upskilling measures (public bodies).

The **chapter 3** is dedicated to training gaps data-mining. Several figures in this chapter represent the relation between the statistical indicators for particular clusters of data in order to identify the country or company gaps.

Annex 1 _Summarizes EU legislation: Directive RES (2009/28/EC) with a focus on requirements for energy efficiency and RES related training.

Annex 2 refers to clustering method theory

Annexes a, b, c describe in detail the questionnaire fields: general data, data for SMEs and public bodies, respectively.

The description of BUGS WP2 "Green skills bottlenecks identification model" in the application covers deliverables scheduled for the particular activity, deliverable specifications and the necessary activity description.

The following deliverable specifications were listed in BUGS application for the WP2 Synoptic report: a. An analysis of the European legislation about employment, skills and green policies will be carried out; b. Set up of a standard methodology for data collection, a kit of questions/interviews will be created for green skills gap company evaluation and guidelines to identify main available institutional data in each Country; c. A tuning process of the methodology will be implemented based on a sample of collected data and the data mining analysis method will be finalized; d. The data mining analysis software will be created and shared by partners.

Below, this project output is evaluated against the four main criteria:

- relevance,
- usability,
- transferability and territorial awareness.

Relevance

BUGS project is based on the fact that renewable energies and energy efficiency in construction have a high potential for green jobs. The project overall objective of the BUGS project is to contribute to the removal of "bugs", namely green skills gaps, which cause an incorrect result in the economic development and professional growth in the Construction Sector.

The main objectives and the targets of the BU.G.S project, as presented on the project web site (http://www.bugsproject.eu/), are:

- to foster partnership between public and private sector on the labour market to **boost the job creation potential of green skills**;
- **to fill in the gap** between labour market **demand and supply of green Construction skills**, namely green skills for energy efficiency, renewable energies, energy performance of buildings, energy diagnosis, eco-design, lifecycle analysis, energy management systems;
- to disseminate and **exploit, throughout the EU,** tools and methods to manage and **detect green skills bottlenecks, that can be identified as "bugs" in the Construction field**.

Sub-elements of criterion	Evaluation
- appropriateness to the objectives and the target of the BU.G.S.project	The synoptic reports corresponds to the defined objectives and targets of BUGS project
- consistence with goals and policies with reference to the transition towards a green, low carbon and resource efficient economy	The synoptic report describes the methodology for identification of the green skill gaps, which is a link between the EUROSTAT data and the information collected from relevant stakeholders.
- Provision of competitive advantage for SMEs and job potential for workers	The application of data-mining tool in practice, can lead to the identification of green skills needs, provision of trainings and finally upskilling, and consequently to a competitive advantage for SMEs
- consistence with the labour market green skill needs in the Construction sector	The methodology described in the synoptic report is consistent with the labour market green skills needs in construction, above all in terms of the preselected activity fields in EE and structure of statistical data used for analysis.
Overall evaluation: Relevance	**Very good**

Usability

Sub-elements of criterion	Evaluation
- adaptable, feasible and user friendly for trainers and SMEs	It can be concluded that the presented methodology in the synoptic report can be further adapted for more detailed investigation of the gaps (if necessary) or the focus could be adjusted (to other sectors). The requested data from stakeholders can be collected in acceptable time (statistical data, balance data, personnel data). Trainers may opt for the more detailed expression of training needs (which is possible, but left to the companies to take additional effort in more detailed entries in the tool).
Overall evaluation: Usability	**Good**

Transferability and Territorial Awareness

Sub-elements of criterion	Evaluation
- adaptive to changes in the Construction environment	The methodology presented in synoptic report allows the necessary adaptations in case of changes detected in the construction environment.
- sustainable of added value	The presented approach and the analytical tool for data mining presentation will help to identify and structure the training needs and green skills gaps. It is sustainable in its' added value as it saves time of stakeholder for data-collection and researchers for analyses and on the other hand draws attention to green skills.
- useful for exploitation and transfer actions: Potential for transferring and applying the project results and materials in other regions, countries or in other contexts (such as construction products, building material industry)	Definitively useful also for other regions, countries and in other contexts. Also the upgrades are possible. The synoptic report itself can be transferred across EU and at the same time keep its guidance function.
Overall evaluation: **Transferability**	**Excellent**

Evaluation Summary

Minor comments:

Comment: Page 11: Different data quality is reported to be observed during the analysis of EU legislation. Please specify to what kind of legislative data the deficiencies refer to, as this is not clear.

Comment: Figure 6 - the description of the axis is missing

Comment: Annex B and Annex C are missing in the index on the page 2.

Recommendations:

Annex I – Only RES directive articles are presented, please add also EED directive (2012/27/EU) and EPBD directive (2010/31/EU) paragraphs related to trainings and better skilled / qualified workers in energy efficiency and RES.

Annex A – Part E. Specific activities defined in the Table E of the methodology for data collection questionnaire seems sometimes too general for identification of green skills gaps. The methodology enables a stakeholder to add additional (also more detailed specific activities in the field of energy efficiency), however, due to potential variety of entries there is a risk of losing the effective structure of the information on the green skills gaps. More detailed structure of the missing activities can be inspired by list of skills from professional standards (like Build up Skills - Pillar I)

Add the authors of the report and the participating project partners in the deliverable text.

Conclusion:

The structure and the content of the **BUGS WP2 Synoptic report** correspond to the title and aims defined in WP2 deliverable specification and related activity description. **The WP2 Synoptic report complies with the deliverable specifications listed in BUGS application.**

Detailed evaluation of the report against the objectives of BUGS project was done along the four main criteria: the report **showed, very good relevance to the project targets, good usability and excellent transferability potentials as well as territorial awareness.**

Prepared by: Date and time:

Dr. Marjana Šijanec Zavrl   Ljubljana 28 January 2016

Building and Civil Engineering Institute ZRMK