proGIreg

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Database

Deliverable 4.7

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Dissemination level: PU

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Partner organisations

No.	Name	Short name	Country
1	Rheinisch-Westfaelische Technische Hochschule Aachen	RWTH	Germany
2	Stadt Dortmund	DORTMUND	Germany
3	Comune di Torino	COTO	Italy
4	Grad Zagreb	ZAGREB	Croatia
20	Fundacion Privada Instituto de Salud Global Barcelona	ISGLOBAL	Spain
21	Università degli Studi di Torino	UNITO	Italy
22	Consiglio Nazionale delle Ricerche	CNR	Italy
24	Università degli Studi di Bari Aldo Moro	UNIBA	Italy
25	Fachhochschule Suedwestfalen	SWUAS	Germany
33	The Forestry Bureau of Ningbo City (FBNC), City	FBNC	China (People's Republic of)
34	Institute of Urban Environment, Chinese Academy of Sciences	IUE-CAS	China (People's Republic of)

Abbreviations

CMS: Content Management System

DMP: Data Management Platform

DVP: Data Visualization Platform

GIS: Geographic Information System

KPI: Key Performance Indicator

LL: Living Lab

NBS: Nature-Based Solutions

NDVI: Normalized Difference Vegetation Index

PM: Particulate matter

ProGIreg: productive Green Infrastructure for post-industrial urban regeneration

SOPARC: System for Observing Play and Recreation in Communities

WP: Work Package

Executive Summary

The benefits produced by the nature-based solutions (NSB) implemented during the project "productive Green Infrastructure for post-industrial urban regeneration" (proGIreg) has been assessed in the framework of the Work Package 4 (WP4). Data has been collected all along the project and analysed to provide readable and useful indicators. The collected data and the produced indicators are made available through the data platform. This document highlights the updating of the proGIreg platform by showing the various thematic sections also through the use of images.

1.   Introduction

1.1. Introduction to the project

Productive Green Infrastructure for post-industrial urban regeneration (proGIreg) is developing and testing nature-based solutions (NBS) co-creatively with public authorities, civil society, researchers and businesses. Eight type of nature-based solutions, which will support the regeneration of urban areas affected by deindustrialisation, have been deployed in Dortmund (Germany), Turin (Italy), Zagreb (Croatia) and Ningbo (China). The cities of Cascais (Portugal), Cluj-Napoca (Romania), Piraeus (Greece) and Zenica (Bosnia and Herzegovina) receive support in developing their strategies for embedding nature-based solutions at local level through co-design processes.

1.2. Introduction to the deliverable

The proGIreg data visualization platform (DVP), reachable from https://www.progiregdata.eu, was developed to allow a rapid consultation of the data collected by the project. This deliverable intends to provide an explanation regarding the updating of the data collected by the project and therefore an overview of the data type currently present on the data visualization platform.

The platform was released in December 2020, a description of the architecture is given in the deliverable Database[1]. It was constantly updated during the project as new data were available and will be updated also in the future as long as new data or documents will be available to be published. The planned lifetime of the data platform after project end is at least three years. The new datasets published on the proGIreg data platform will also be uploaded to zenodo.org by the end of the project in order to make them available in a long-term repository. The keyword to use to quickly locate all the project data in zenodo is progireg.

2.   Updated sections of the data visualization platform

From the home page (Figure 1) the users can select the data type that they want to consult, by clicking on the corresponding box. The update data are divided into nine sections, listed below. The corresponding data source is reported, according to the Deliverable 4.1 "**Monitoring and Assessment Plan**"[2]. Data are classified as

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[1] Mattioni, M. et al. (2020): Database, Deliverable No. 4.4, proGIreg. Horizon 2020 Grant Agreement No. 776528, European Commission.

[2] Baldacchini, C. et al. (2019): Monitoring and Assessment Plan, Deliverable No. 4.1, proGIreg. Horizon 2020 Grant Agreement No. 776528, European Commission.

- Spatial data (*Administrative data from existing databases*) at City and Living Lab district level
- General Population Survey at Living Lab Districts level (*General Questionnaire*)
- Spatial data (*GIS-derived data)* NDVI, Walkability indices at City and Living Lab district level
- Economic data at NBS level (*Economic and labour market questionnaire*)
- Social data at nature-based solution (NBS) level (*NBS-visitor questionnaires*)
- Health and well-being data at NBS level (*SOPARC*)
- Environmental and ecological data at NBS level (*Air Temperature, Air Humidity, Air Quality, PM biomonitoring, Environmental Footprint, Biodiversity monitoring, Water Quality*)
- Reports
- KPIs at NBS and Living Lab level

Figure 1. Platform home page.

By clicking on each box, a new page will open showing all the data for that section. To improve the navigability of the site, the data menu item has been introduced in the header of the platform. Through submenus it is possible to directly access all sections of the platform from any page.

2.1. Spatial data

Administrative data from existing databases for the cities of Dortmund, Ningbo, Turin and Zagreb, visualized as interacting tables Figure 2.

Spatial data

Figure 2. Spatial data example page.

2.2. General questionnaire

The General Questionnaire provides data visualization from the general population survey at the LL district level, for the cities of Dortmund, Turin and Zagreb. Performed before the NBS implementation and repeated after two years (pre-post design). Data are presented as tables and as charts (Figure 3).

Figure 3. General questionnaire example page.

2.3. Normalized Difference Vegetation Index (NDVI), walkability indices

Data derived from Geographic Information Systems (GIS) visualized as images and table Figure 4.

Figure 4. NDVI, walkability example page.

2.4. Economic data

The Economic data section provides data presented as tables and charts (Figure 5). Data derives from the analysis of the general population survey pre and post NBS implementation at the LL district level, for the cities of Dortmund, Turin and Zagreb (GQ pre, GQ post).

2.5. Social data

The social data section provides data presented as tables and charts (Figure 6). Data derives from the analysis of the general population survey pre and post NBS implementation at the LL district level, for the cities of Dortmund, Turin and Zagreb (GQ pre, GQ post).
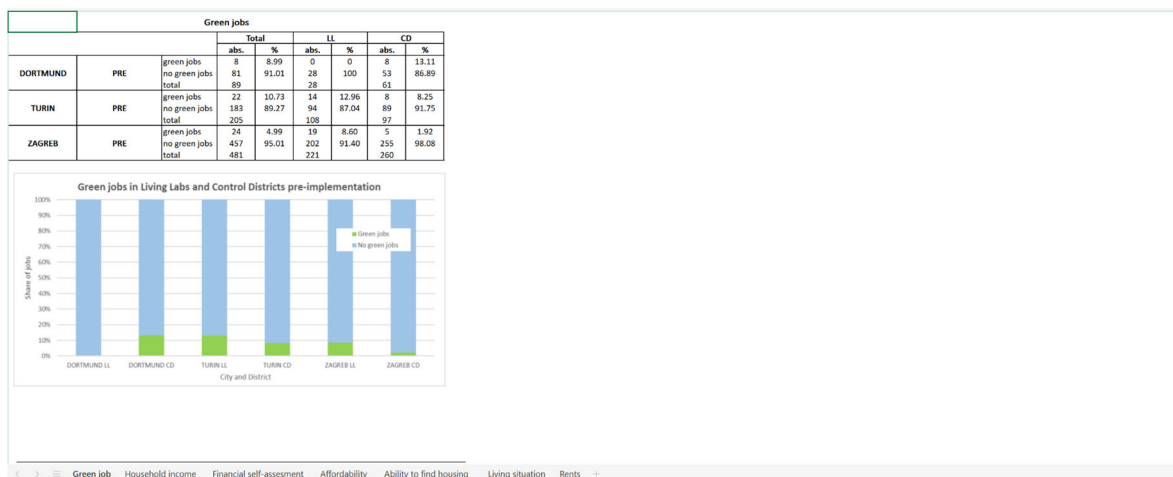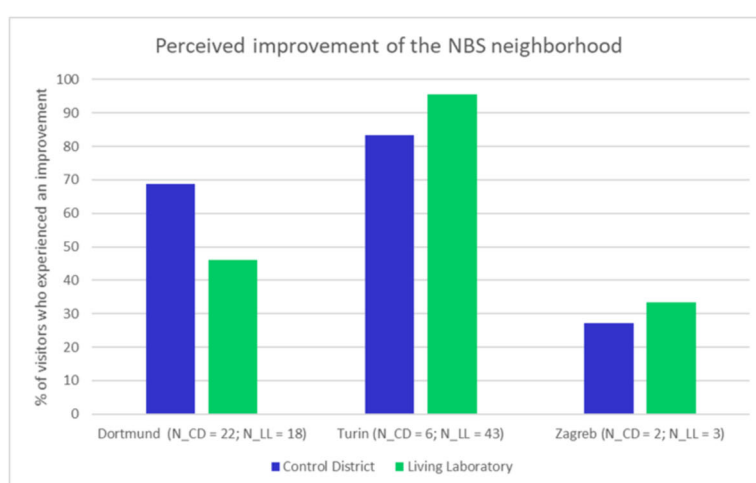
Social data

	Dortmund		Turin		Zagreb	
	Coefficient F	p	Coefficient F	p	Coefficient F	p
16.3/22.11 - Mindfulness	0.057	0.813	0.041	0.839	0.041	0.297
20.2 - Perceived Social Interaction	0.607	0.440	0.201	0.654	0.655	0.419
20.4.2/22.14 - Perceived Social Support	0.258	0.614	**5.264**	**0.024***	1.497	0.223
20.5 - Perceived Social Cohesion	1.963	0.168	3.562	0.062	0.590	0.443

Figure 6. Social data example page.

2.6. Health and well-being data

In this section the data are presented through charts (Figure 7). The data are obtained from the processing of NBS visitor questionnaires and from the analysis of the System for Observing Play and Recreation in Communities (SOPARC).
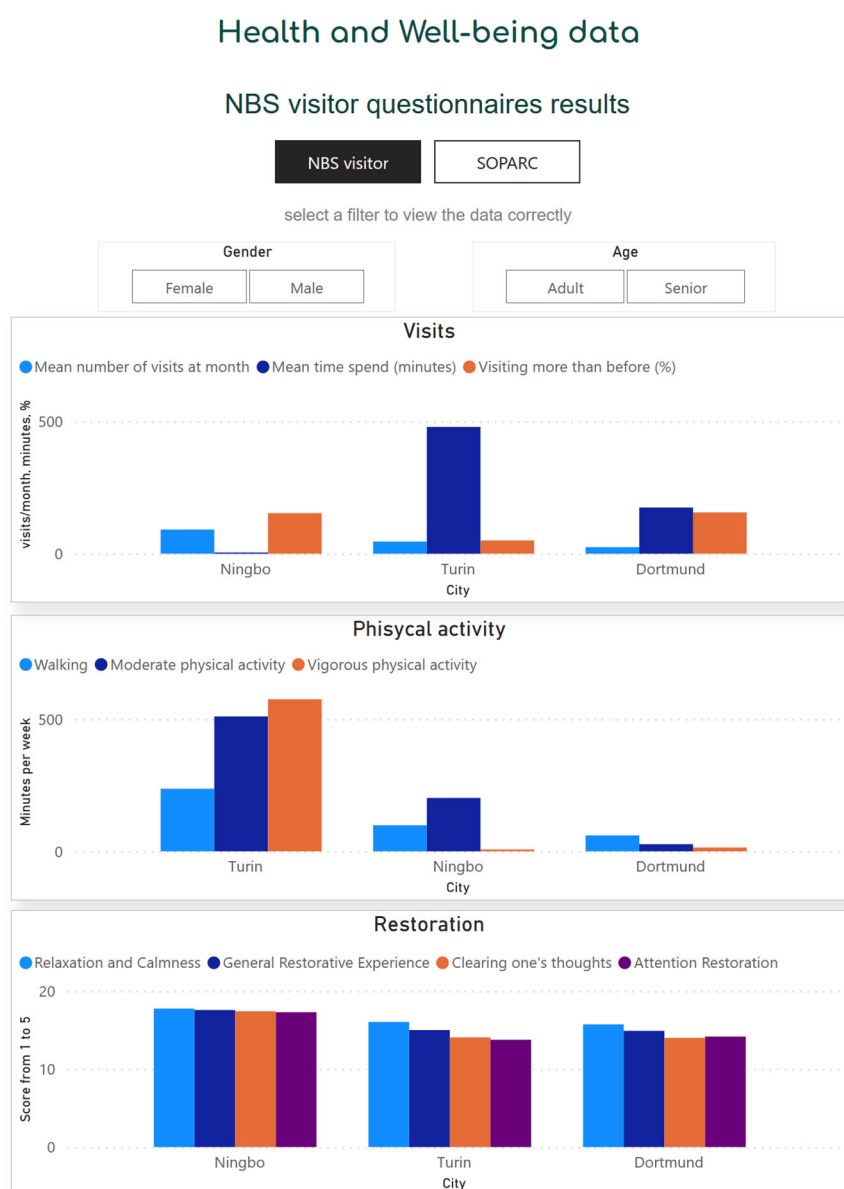

Figure 7. Health and Well-being example page.

2.7. Environmental and ecological data

Figure 8 shows an example of the visualization of the weight of PM removed from the sampled plant species, its elemental composition and density. In this section data are presented as interactive charts and tables.
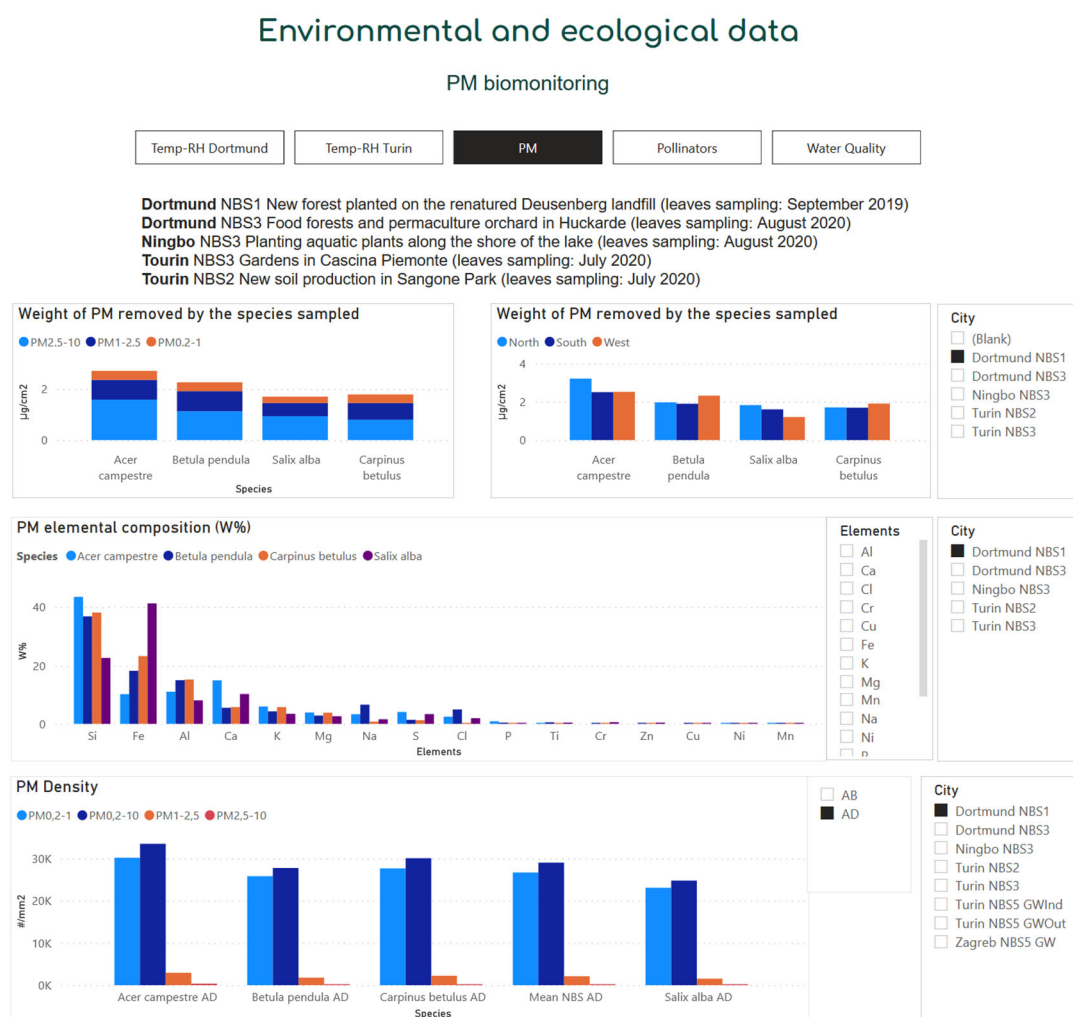

Figure 8. Environmental and ecological data example page.

2.8. Reports

This section contains downloadable pdf documents.

2.9. Key Performance Indicators

In this section the Key Performance Indicators (KPIs) are presented as interactive table (Figure 9).

KPIs

City	NBS type	Title	Societal challange	KPIs	Values	Units	Comment
Dortmund	NBS1.1	Integrating solar energy production on Deusenberg landfill	1. Climate Resilience	Avoided greenhouse gas emissions from renewable energy production	2246	tonnes/y of saved CO₂	Calculated from indicator 24.35
Dortmund	NBS1.1	Integrating solar energy production on Deusenberg landfill	12. New Economic Opportunities and Green Jobs	23.3 Direct economic activity: Number of new jobs created (R)	20	persons in co-design and implementation	Low job for maintenance since mainly self-sustaining system
Dortmund	NBS1.1	Integrating solar energy production on Deusenberg landfill	12. New Economic Opportunities and Green Jobs	24.5 NBS cost/benefit analysis: Initial costs	2.6	M€	Implementation costs
Dortmund	NBS1.1	Integrating solar energy production on Deusenberg landfill	12. New Economic Opportunities and Green Jobs	24.6 NBS cost/benefit analysis: Maintenance costs	5,000	€/year	
Dortmund	NBS1.1	Integrating solar energy production on Deusenberg landfill	12. New Economic Opportunities and Green Jobs	24.35 Renewable energy produced in NBS	3700000	kWh/y of electrical energy	

Figure 9. KPIs example page.