WATCHING THE RISK FACTORS
WARIFA
ARTIFICIAL INTELLIGENCE AND THE PERSONALIZED PREVENTION AND MANAGEMENT OF CHRONIC CONDITIONS

Project title	Artificial intelligence and the personalized prevention and management of chronic conditions		
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D2.6 – WEB PAGE ON COMMUNITY HEALTH RISK PROFILES

Due date	M36	**Delivery date**	M36
Work package	WP2 – User and stakeholders needs		
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Version	V1		

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VERSION AND AMENDMENTS HISTORY

Version	Date (MM/DD/YYYY)	Created/Amended by	Changes
0.1	11/12/2023	SCS	Initial draft.
0.2	13/12/2023	Roald Nystad – Melanomforeningen Thomas Schopf – NSE	Drafted reviewed.
1	18/12/2023	SCS	Final version for submission.

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LIST OF ABBREVIATIONS

Abbreviation	Significance
AI	Artificial Intelligence
APP	Application
CVD	Cardiovascular diseases
COPD	Chronic Obstructive Pulmonary Disease
D	Deliverable
GA	Grant Agreement
M	Month
NCD	Non-Communicable Disease
NO	Norway
ES	Spain
RO	Romania
WP	Work Package

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1 INTRODUCTION

1.1 PURPOSE AND SCOPE

Deliverable D2.6 within the WARIFA project relates to a webpage connected to the WARIFA official website and containing a prototype map display of the community health risk profiles for pilot municipalities in Romania, Spain, and Norway. In this sense, D2.6 reports on the development and integration of a web-based site that displays community health risk profiles of four pilot municipalities across the three project countries.

Task 2.6 and its associated D2.6 aim at creating a comprehensive model based on Norway's successful implementation of municipality health profiles in Romania and Spain, focusing on identifying and analysing prevalence and environmental risk factors associated with non-communicable diseases (NCDs).

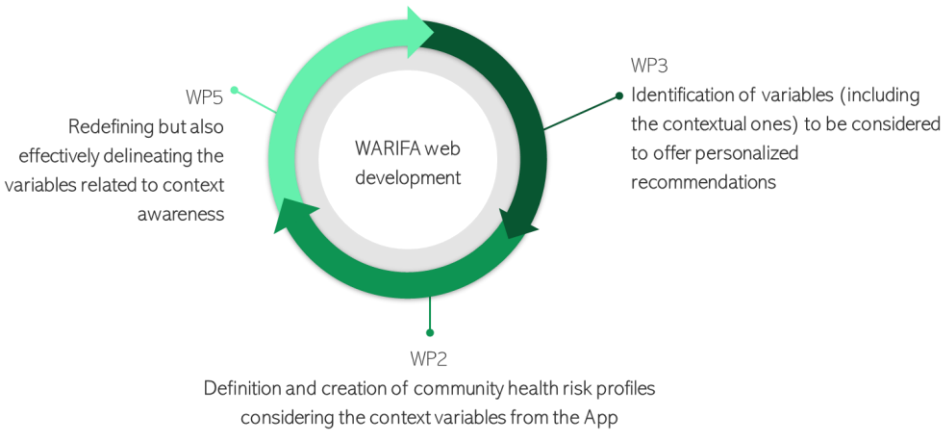
D2.6 is led by the WP2 Leader SCS and has entailed direct collaboration with project partners including NSE, NETSUN, UiT, UiO, and ULPGC and a representative of a Patient Organization. The outcome of the work conducted in Task 2.6 has resulted in an interactive prototype website connected with the WARIFA website, displaying pilot community risk profiles in Romania, Spain, and Norway.

The purpose of these profiles is to allow policy makers, professionals, and other stakeholders to analyse how contextual and environmental factors can lead to health risks and tailor prevention strategies. In addition, it is hoped that this website can complement the information provided to users of the Warifa app by providing data about their communities. The developed website is therefore a crucial tool for analysing and interpreting health data tailored to community profiles, thereby enhancing individual health prevention strategies.

1.2 RELATIONSHIP WITH OTHER WORK PACKAGES

Feedback from WP3 and WP5 has ensured a comprehensive deliverable reflecting the project's broader objectives. Contextual risk factors and variables considered for the community profiles' work conducted in Task 2.6 were agreed based on the progress and outcomes from WP3 and WP5.

Figure 1. Interrelations between WP2 and other WPs



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2 COMMUNITY HEALTH RISK PROFILES

2.1 SCOPE AND TARGET GROUPS

The **WARIFA Community Health Risk Profiles website** supports the WARIFA project by providing health profiles with contextual and environmental risk factors for communities in four selected pilot municipalities of Norway, Romania, and Spain. It is a resource for **policy makers and health professionals** to develop NCDs' prevention strategies and for **citizens** to make informed health decisions. The platform offers both static and real-time data on environmental risk factors like UV index and air quality, helping users to understand local health risks and adopt healthier lifestyles.

2.2 TECHNICAL DEVELOPMENT

The WARIFA Community Health Risk Profiles website is accessible at this **link**:

https://warifa-communityhealthprofiles.eu/

The platform is **linked with the WARIFA project's own website**. A banner on the homepage of the WARIFA project's website has been added to easily attract the user's attention on the community profiles' platform. In addition, a dedicated web page has been added, which re-directs users to the community profiles platform.

Figure 2. Webpage on WARIFA official website

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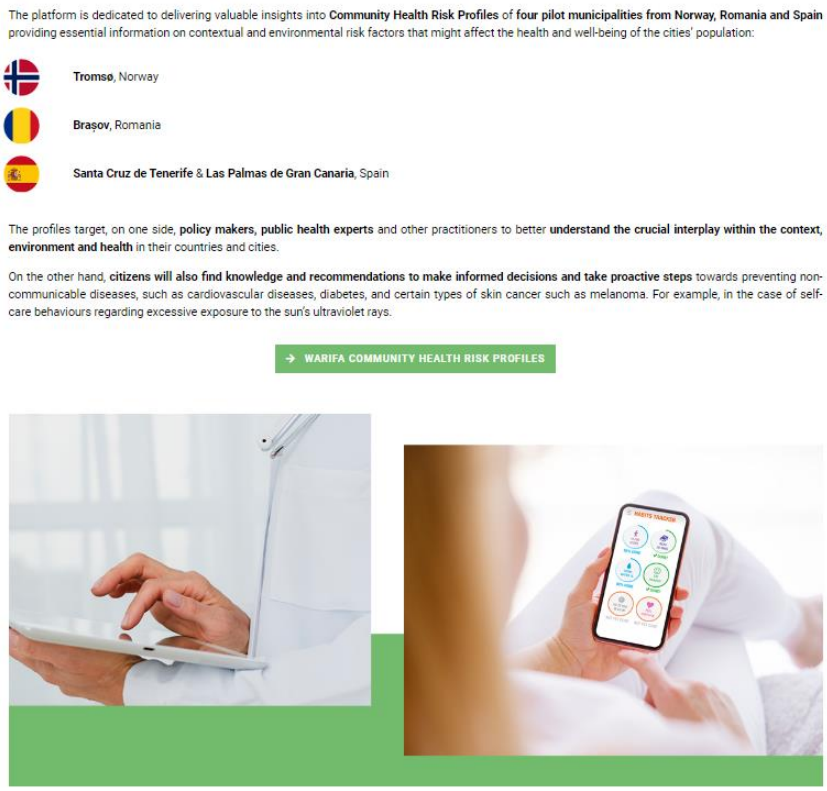

Figure 3. Homepage banner on WARIFA official website

Furthermore, it is planned to **link the community health risk profiles website with the WARIFA App**, as a complementary means to attract users.

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2.3 SELECTED PILOT CITIES

Four municipalities have been selected for the pilot community health risk profiles. The creation of the municipalities' profiles is based on the successful experience and model of municipality health profiles already existing in Norway. The chosen municipalities are the following:

Brașov, Romania: Brașov municipality, Romania, has a population of 284,691. The area is predominantly urban, with an average age of 37.4 years and a diverse economy. Industries include machine-building, metal processing, pharmaceuticals, food, and wood processing. Despite a slight unemployment increase, the city ranks rather high in national salary rankings.

Brașov municipality faces significant health challenges, with cardiovascular diseases being the leading cause of death. The area has seen a surge in respiratory disease-related mortality, with increasing concerns over COPD, cancer, and asthma incidences among its relatively young population.

Tromsø, Norway: Tromsø, located in Northern Norway, is the 9th largest municipality in Norway and the largest in the north. It has a diverse population of 78,372 people, including ethnic Norwegians, Sami, Kven, and immigrants from 138 countries.

The economy is driven by the Arctic University and the University Hospital, as well as fishing & fish trade, aquaculture, and growing tourism attracted by the phenomenon of the Northern Lights. Education levels are high, and university completion is increasing. Tromsø enjoys a low unemployment rate of 1.1%, reflecting a robust job market.

Circulatory and respiratory diseases, along with cancer, are the main causes of death in Tromsø. Interestingly, melanoma cases are also high in the municipality and, overall, in Norway. On the other hand, positive trends have emerged, such as decreased blood pressure levels across all age groups and a reduction in diabetes prevalence among adults from 2007 to 2016, suggesting effective health management strategies.

Santa Cruz de Tenerife, Canary Islands, Spain: Santa Cruz de Tenerife is the capital of Tenerife Island and co-capital of the Canary Islands. It is a diverse city with a stable climate, diverse districts, and a significant natural area.

Despite a recovering labour market post-COVID-19, unemployment remains high, particularly among older adults and lower education.

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High diabetes risk characterises Santa Cruz de Tenerife, with urban areas showing a higher prevalence. Cardiovascular diseases, cancer, and respiratory conditions are also leading causes of death, indicating a need for targeted health interventions.

Las Palmas de Gran Canaria, Canary Islands, Spain: Las Palmas de Gran Canaria is the ninth-most populous city in Spain, has a strong tourism sector and has been experiencing positive advancements in labour market post-COVID-19 with an employment rate growing by 9.4% since 2019.

However, the city still faces socio-economic inequality, with a significant portion of its population at risk of poverty. Like Santa Cruz de Tenerife, Las Palmas de Gran Canaria reports a high risk of diabetes and related metabolic disorders. The Canary Islands have a comprehensive health network, with numerous health centres and hospitals focused on addressing the primary causes of death: circulatory system diseases, cancers, and respiratory system diseases.

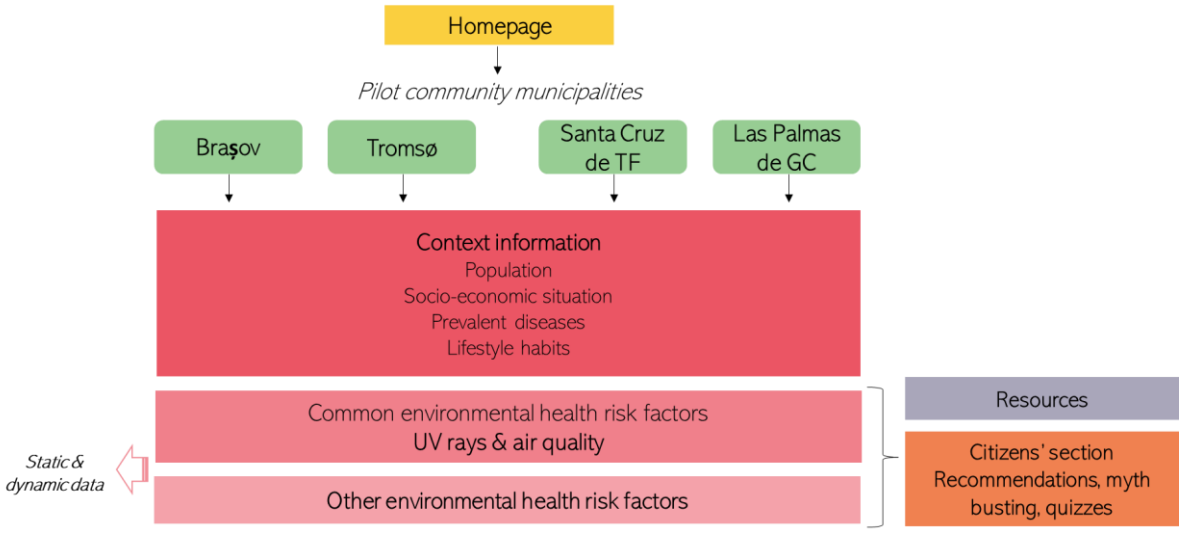
These profiles will guide the WARIFA project's efforts in the establishment of public health profiles to strengthen prevention of NCDs in the project countries and beyond.

2.4 ARCHITECTURE AND CONTENT

2.4.1 Content structure

The WARIFA Community Health Risk Profiles web platform features a **homepage** plus a **dedicated page for each pilot municipality**, all following a uniform structure with certain unique elements tailored to the specific characteristics of each location.

Figure 4. Overall platform's architecture



The municipality pages feature a core common structure, complemented by other differentiating sections defined thanks to the feedback and inputs coming from WP2, WP3, and WP5.

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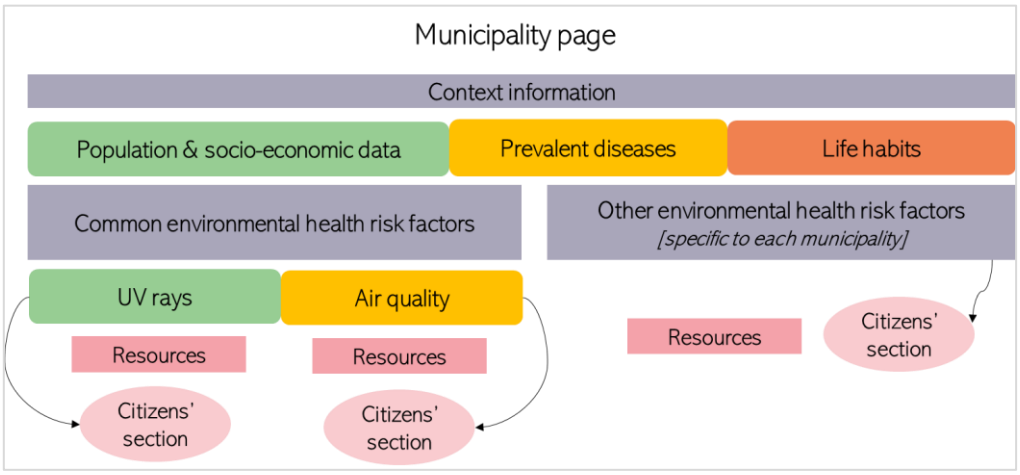
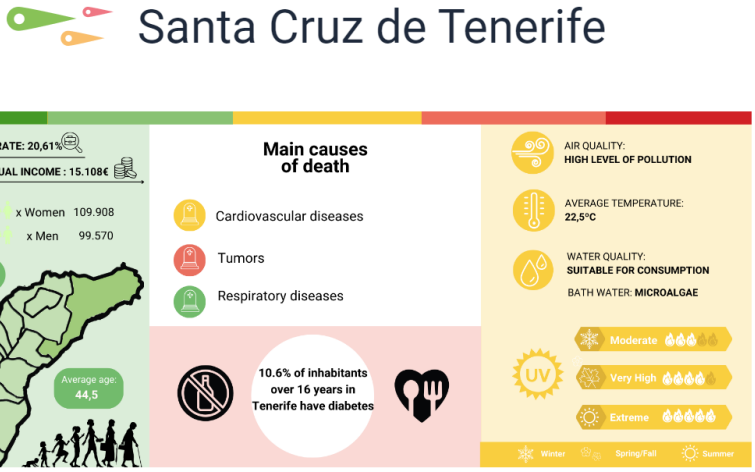
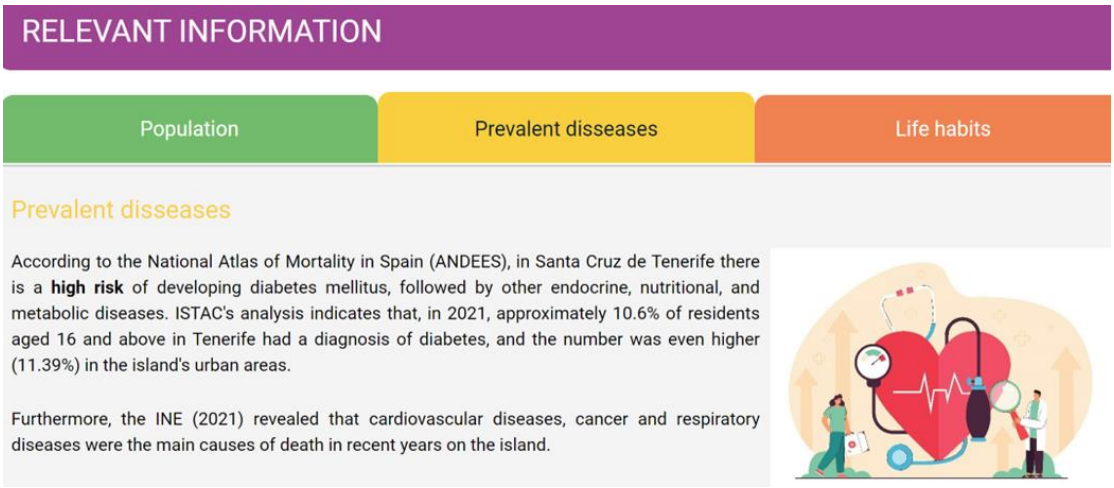
Figure 5. Architecture of municipality page



All municipality profiles begin with an **introductory section** showcasing **an infographic and general context information** on the municipality location, population, socio-economic context, prevalent diseases, and life habits.

Figure 6. Example of 'Relevant information' content





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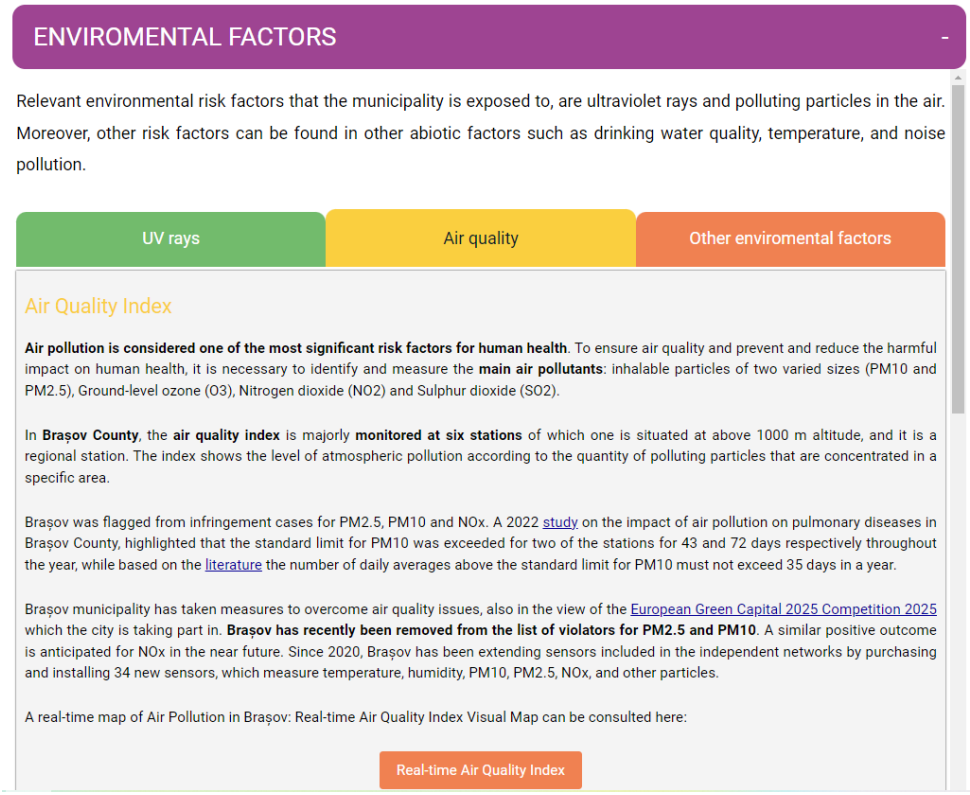
This is followed by two sections focused on the two-core **environmental health risk factors** chosen for all the pilot communities – **UV rays and air quality**. These sections provide information on the potential health risks associated respectively with UV rays and air quality. Background knowledge is common to all municipalities; moreover, adapted information on UV rays and air quality in each of the municipalities has been added, reflecting the diversity of the selected communities.

Figure 7. Example of 'Environmental factors' content



Beyond the two common environmental health risk factors, there is another section providing information and dynamic data on additional **environmental factors specific to each municipality**. For example, the pages for Santa Cruz de Tenerife and Las Palmas de Gran Canaria include up-to-date, dynamic information about hot temperatures and bath water quality conditions, pertinent to cities known for their beaches and their warm weather all year long.

On the other hand, Tromsø provides details on extreme cold temperatures and other environmental phenomena unique to the municipality such as summer midnight sun.

As for Brașov, there is dedicated information on noise pollution and its potential effects on health, since it is characterised by high levels of traffics and industrial activity, which lead to significant noise pollution in certain times of the day.

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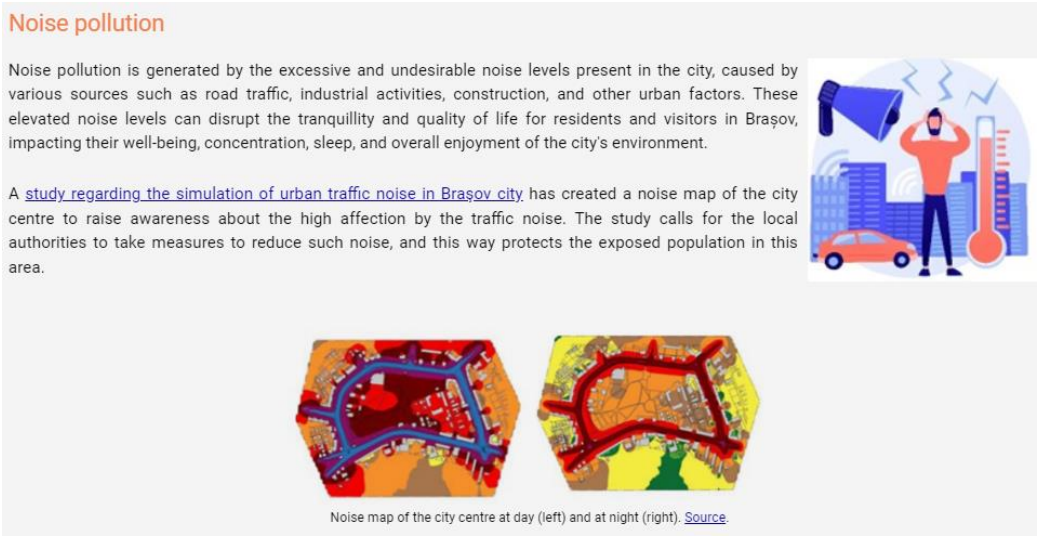
Figure 8. Example of additional environmental factors



Every section of environmental health risk factors (both common and specific) features a sub-section named "**Resources**" where the users can consult or download additional information available in the form of external URLs, videos, or downloadable PDFs.

Figure 9. Example of downloadable resources

Additionally, for each environmental health risk factor of the four municipalities, there is a separate **section dedicated to citizens** which provides **practical recommendations** for maintaining health, **debunking common health myths**, and engaging with **interactive quizzes** designed to inform and educate the public on health-related matters associated with the tackled environmental health risk factors. This section - adapted to each municipality's environmental and contextual conditions - is aimed at empowering citizens with knowledge and tools to improve their health and well-being.

Figure 10. Banner for citizens' section

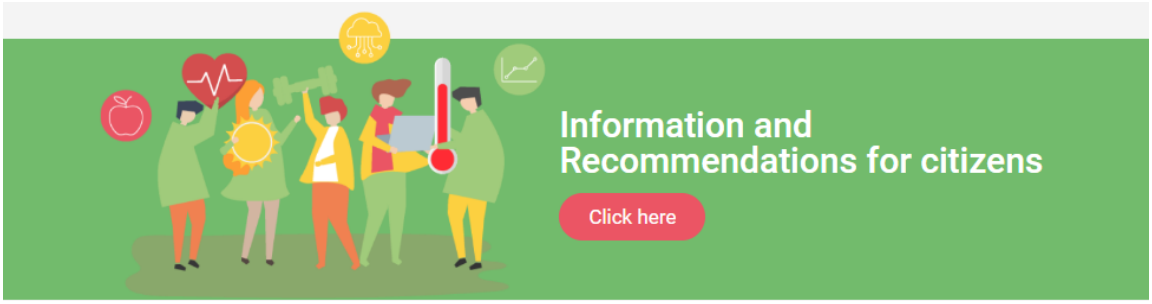


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Table 1. Municipality's content structure summary

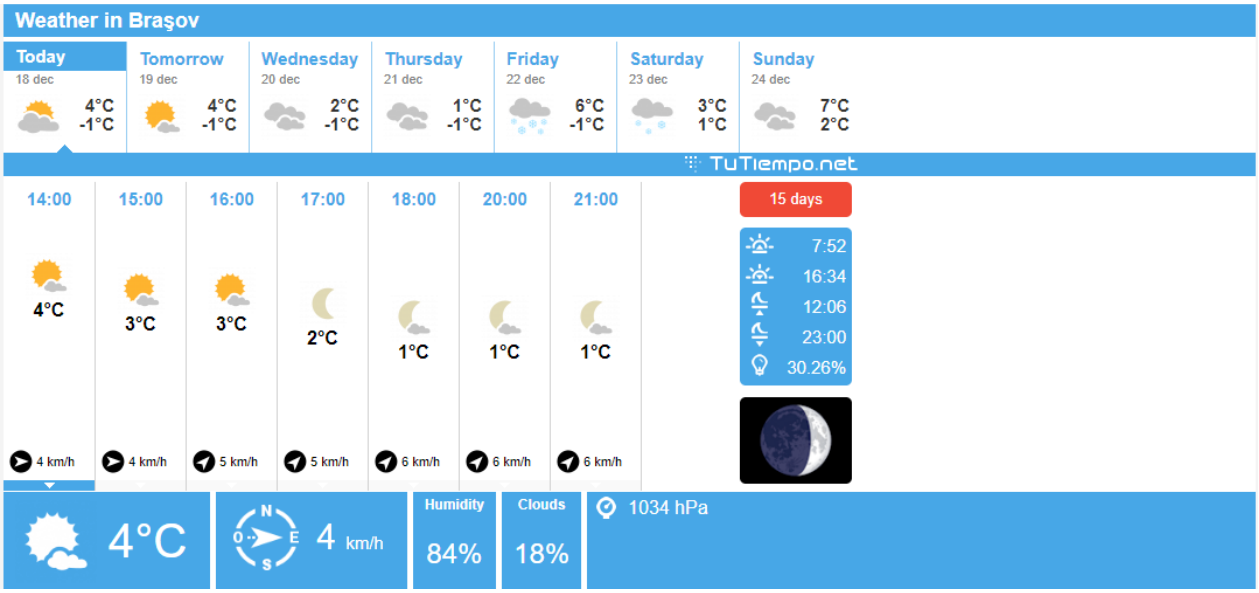
Section	Description
Context Information	Crucial details about its population size, socio-economic indicators, prevalent health conditions, and common lifestyle habits of its residents.
Common Environmental Health Risk Factors	Common environmental health risks that are relevant to all municipalities, that is exposure to UV rays and air quality.
Differentiating Details	Along with the shared elements, specific factors unique to each city's environmental context are addressed.
Resources	A repository of external resources under each environmental health risk factor where users can find additional information for further consultation.
Citizens' Section	A section dedicated to the public to: • Consult tailored recommendations on healthy behaviours to prevent NCDs against potentially harmful environmental risk factors, • Debunk common health myths, and • Test acquired knowledge through interactive quizzes designed to inform and educate the public.

2.4.2 Types of data

The WARIFA Community Health Profiles platform offers a comprehensive overview of pilot municipalities, including **state-of-the-art information** related to demographics, health statistics, and socio-economic information. It also provides a snapshot of prevailing conditions and trends within each municipality. All data have been retrieved from official public reports and statistics at EU and national level.

The website also features **dynamic, interactive data**, such as temperature, UV index levels, and bath water quality maps, which are updated regularly. This **real-time data** is crucial for immediate health advisories and decision-making by residents and visitors.

Figure 11. Example of temperature interactive data for Santa Cruz de Tenerife



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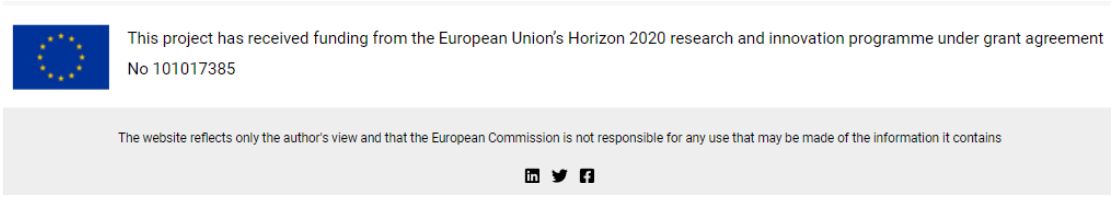
The data is collected to support policy makers and health experts who require reliable statistics for informed decision-making and strategy formulation. It also serves the broader public by providing accessible information to help individuals understand and act upon health risks in their communities.

2.4.3 Branding

The community health risk profiles platform has been designed considering the WARIFA style guide and the visual elements of the official project's website. The platform also showcases the EU funding and re-directs to the project's social media.

Figure 12. EU funding disclaimer



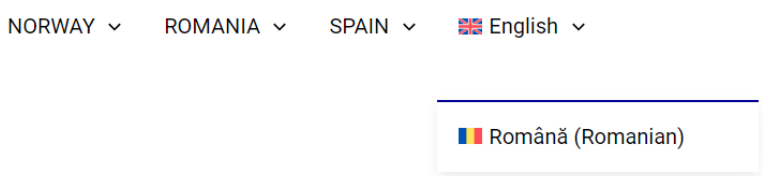
2.4.4 Language

The community profiles' texts are available in both English and national languages with the aim to facilitate access and use at community level. The homepage has been embedded with an automatic translation feature, and the user can select their preferred homepage language.

Figure 13. Automatic translation on the homepage

On the other hand, on the web page of each municipality, the user can select the preferred language, opting for either English or the national language associated with the municipality in question.

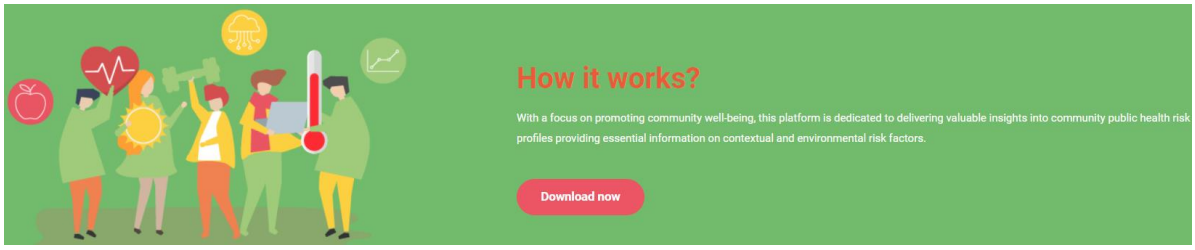
Figure 14. Example of manual language selection for the municipalities



2.4.5 Usability

The website has been designed to be straightforward and easy to use by any users, with different digital skills. To facilitate its use, a dedicated manual has also been developed and it is available to download from the homepage.

Figure 15. Banner with downloadable user manual



The community health risk profiles platform is intended as a lively and dynamic tool of the WARIFA project, and it might be updated or fine-tuned upon the technical progress emerging from other WPs and the App development. It is also relevant to highlight that Las Palmas de Gran Canaria will be one of the pilot municipalities involved in the testing and evaluation of the WARIFA App. Therefore, during the testing phase of the App, users will be able to navigate on the community health risk profile website and provide feedback and suggestions to enhance usability.

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3 CONCLUSIONS

The present deliverable provides an overview of the work executed under Task 2.6 for the design and development of a web-based pilot platform on community health risk profiles for the three project countries (Norway, Romania, and Spain). The community health risk profiles platform is linked with the WARIFA project website and makes use of the same branding identity and visual elements.

The aim of this platform is to support policy makers, public health experts and other practitioners to better understand the crucial interplay within the context, environment and health in their countries and municipalities. This website is offered as a complement to the WARIFA App to empower citizens to gather new knowledge and recommendations to make informed decisions and take proactive steps towards preventing non-communicable diseases.

The developed website is based on the existing model of municipality community profiles from Norway, which has been adapted to the WARIFA project and extended to four pilot municipalities – Tromsø (NO), Brașov (RO), Santa Cruz de Tenerife, and Las Palmas de Gran Canaria (ES).

The platform seeks to raise awareness of the impacts that contextual and environmental factors may have on the onset of NCDs such as cardiovascular diseases, diabetes, and certain types of skin cancer such as melanoma, which pose significant challenges to people's health and well-being.

The emphasis on contextual and environmental information applied to public health will provide policy makers, practitioners, and other experts with the needed information background, tools, and resources to better plan and implement strategies & measures for enhanced non-communicable diseases prevention and healthier lifestyles of their communities. At the same time, community health risk profiles can provide citizens with the knowledge they need to make choices tailored to the characteristics of their municipality of residence and adopt healthier lifestyles.

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