HARMONIA

System for Improved Resilience and Sustainable Urban areas to cope with Climate Change and Extreme Events based on GEOSS and Advanced Modelling Tools

Prof. Julia (Nerantzia) Tzortzi

Politecnico di Milano, Italy
EUROGEO WORKSHOP 2023

HARMONIA
Development of a Support System for Improved Resilience and Sustainable Urban areas to cope with Climate Change and Extreme Events based on GEOSS and Advanced Modelling Tools

LC-CLA-19-2020: Integrated GEOSS climate applications to support adaptation and mitigation measures of the Paris Agreement

22 PARTNERS
4 Academias
9 Companies
4 Research institutes
1 NGO
4 Municipalities

4 PILOT CITIES
Milan (Italy)
Sofia (Bulgaria)
Piraeus (Greece)
Ixelles (Belgium)

J.N. Tzortzi, C.A.Castiglioni, R.M.C. Musacchio_Politecnico di Milano, Italy
HARMONIA capitalises on a wealth of existing Earth Observation (EO) datasets and services – including GEOSS, Copernicus, ESA TEPs services and other ESA data and services, as well as National Data Cubes – with ensemble modelling, socio-economic and in-situ data at the spatial and temporal scales relevant for the urban environment...
to deliver an Integrated Resilience Assessment Platform (IRAP)

a system that allows stakeholders to model a range of planning options against a number of CC scenarios towards targeted applications in order to mitigate CC effect in urban areas, helping deliver resilient cities for current and future generations.
CC FRAMEWORK

CC effects

Natural and man-made hazards intensified by CC

“man-induced” hazards

Urban flash floodings

Soil degradation

Geo-hazards

Urban Heat Island (UHI) and heat fluxes

Air quality and gas emissions

T5.5 FMI

T4.3 ASSIMILA

T4.4 POLIMI

T5.6 INGV

T5.3 FORTH

T3.3 POLIMI

T4.5 HUMANITAS

T5.2 ASSIMILA

J.N. Tzortzi, C.A. Castiglioni, R.M.C. Musacchio_Politecnico di Milano, Italy
HARMONIA’s main objective is to reorganise and integrate the huge amount of data already available and to make the best use of existing monitoring technologies and geospatial services for urban hazard assessment and disaster risk management.
HARMONIA APPROACH

DATA SOURCES

- **Quantitative**
  - EO data
  - In-situ data
  - RISK ASSESSMENT (vulnerability, hazard, exposure)

- **Qualitative**
  - Citizens as Observatories
demonstration

PERCEIVED RISK INDICATORS

integration

post-project updating

J.N. Tzortzi, C.A. Castiglioni, R.M.C. Musacchio_Politecnico di Milano, Italy
Get in touch!

contact@harmonia-project.eu

http://harmonia-project.eu/
https://twitter.com/ProjectHarmonia
https://www.linkedin.com/in/harmonia-project/
https://www.instagram.com/harmonia.h2020/
https://www.facebook.com/HarmoniaProject2021