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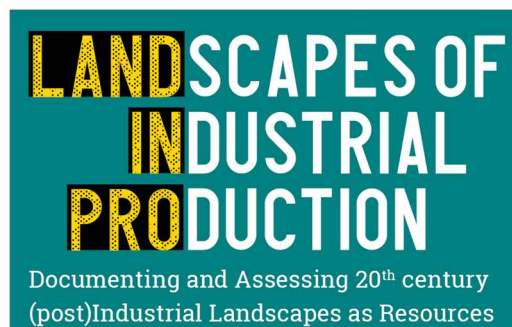
Land-In-Pro Assessment Tool

Project Acronym:

Land-In-Pro

Project Title:

**- Landscapes of Industrial Production –
Documenting and Assessing 20th century (post)Industrial Landscapes as Resources**

100027-2022-FP-PNRR-YR_MSCA_0000005

Start date of the project:
December 20, 2022

Duration:
36 months

Authors:
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Dr Sara Mauri, Postdoctoral Researcher

Dissemination Level:
PU – Public

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Authors: Dr Federica Pompejano, RTD-A (Principal Investigator); Dr Sara Mauri, Postdoctoral Researcher

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2022-FP-PNRR-YR_MSCA_0000005 – CUP No. D33C22001630001 – M4 – WP4

Document track details

PROJECT DATA SUMMARY	
Project title and acronym	Landscapes of Industrial Production: Documenting and Assessing 20th century (post)Industrial Landscapes as Resources (Land-In-Pro)
Call reference:	Next Generation EU - NRRP - Mission 4 "Education and Research" - Component 2 "From Research to Business" - Investment 1.2 "Funding projects presented by young researchers – MUR Public notice no. 247,19 August 2022
Project's code no.:	100027-2022-FP-PNRR-YR_MSCA_0000005
Associated CUP No.:	D33C22001630001
Project website:	landinpro.unige.it
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Host Institution:	University of Genoa Department of Architecture and Design – DAD Stradone Sant'Agostino 37 16123 Genova (GE) Tel: +39 010 209 5904.
Start Date:	December 20, 2022	**End date:**	December 19, 2025

DELIVERABLE INFORMATION	
Milestone title:	Land-In-Pro Assessment Tool
Milestone No.:	M4
Milestone nature:	Report – Open Access
Dissemination level	PU - Public
Work Package No.:	WP4
Author(s)	Federica Pompejano (Principal Investigator) – **FP** Sara Mauri (Postdoctoral Researcher) – **SM**
Due date:	30 November 2025 (month 35)
Actual submission date:	No submission required – to be kept on file by the PI
Brief description	This report is a formal output of the Land-In-Pro project and constitute a technical-scientific document that describes the Land-In-Pro's Assessment Tool. It includes original unpublished work except where clearly indicated otherwise. Previously published material and the contributions of others have been duly recognized through suitable citation, quotation, or both.
Copyright notice	Land-In-Pro Assessment Tool © 2025 by Land-In-Pro Project - Federica Pompejano and Sara Mauri, Department Architecture and Design (DAD), Università di Genova (UniGe) is licensed under Attribution-NonCommercial 4.0 International (CC BY-NC 4.0).

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1. Introduction

This technical scientific report meets the requirements set out in the Public Notice no. 247, August 19, 2022, Art. 13, comma 3, letter f) corresponding to promoting the exploitation of research results and ensuring wide open access to research results and related data according to the principles of "Open science" and "FAIR Data". It presents the main outcome of Work Package 4 (WP4): the Land-In-Pro Assessment Tool (AT), a structured and replicable protocol conceived to document, characterise and critically assess 20th century (post)industrial landscapes as heritage assets. The Land-In-Pro AT was developed through an iterative process of pilot testing on the Ferrania case study (Municipality of Cairo Montenotte, Savona), within the broader territorial context of the Bormida Valley (north-western Liguria), using the pilot results to refine the general methodology. The Land-In-Pro AT builds on the integrated evidence base produced across previous milestones and deliverables. The report describes the Land-In-Pro AT workflow, its intermediate outputs, and its contribution to supporting informed strategies for conservation, reuse and change management in historic industrial landscapes.

2. Land-In-Pro Assessment Tool

The Land-In-Pro project is committed to identifying, investigating, interpreting and assessing (post)industrial landscapes and heritage as resources, critically unfolding new perspectives on conservation and reuse strategies. The Land-In-Pro Assessment Tool is a formal output of the research activities envisaged in *Work Package 4 - Interpretation and Evaluation: Development of the Assessment Tool* (WP4[1]).

The Land-In-Pro AT draws on and consolidates evidence developed across the project Work Packages, including: (i) documentary and archival research developed in WP1[2]; (ii) fieldwork activities carried out in WP2[3]; (iii) the GIS-based spatial and landscape analysis developed in WP3[4] (including the definition of the Land-In-Pro Historic Industrial Landscape Classification); and (iv) qualitative material produced through ethnographic campaigns conducted during WP2 fieldwork and subsequently analysed in WP4.

The Land-In-Pro AT was developed through an iterative process of testing on the Ferrania pilot site, using the pilot application to calibrate the general methodology and to define intermediate outputs transferable to other contexts.

2.1. Purposes of the Land-In-Pro Assessment Tool

The objective of the Land-In-Pro AT is to provide a replicable procedure supporting the recognition of Historic Industrial Landscapes as heritage assets, by integrating expert-led investigations with community-based qualitative evidence within a transparent and comparable assessment setting. Figure 1 summarises the methodological workflow underpinning the Land-In-Pro AT, from desk-based research and fieldwork data collection and processing to the project's main outputs, including the Assessment Tool.

The main characteristics of the Land-In-Pro AT are the following:

- It represents one of the **main outcomes of the Land-In-Pro project**, providing a structured and reproducible six-step protocol for documenting and characterising Historic Industrial Landscapes.
- It enables **diachronic reading across reference years** to identify dynamics related to industrialisation and deindustrialisation processes.

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[1] Details on WP4 research activities are contained in the deliverables D4.1 and D4.2.
[2] *Work Package 1 – Inventorying the tangible: investigating, identifying and mapping.*
[3] *Work Package 2 – In-depth investigation in a representative pilot case study.*
[4] *Work Package 3 – Processing and harmonization of collected data: webGIS and GIS project.*

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- It **combines quantitative** spatial outputs (datasets, maps, classifications) with **qualitative** materials (e.g., interviews).
- It is designed to **support planners, technicians and decision-makers** in developing informed approaches to conservation, reuse and change management.
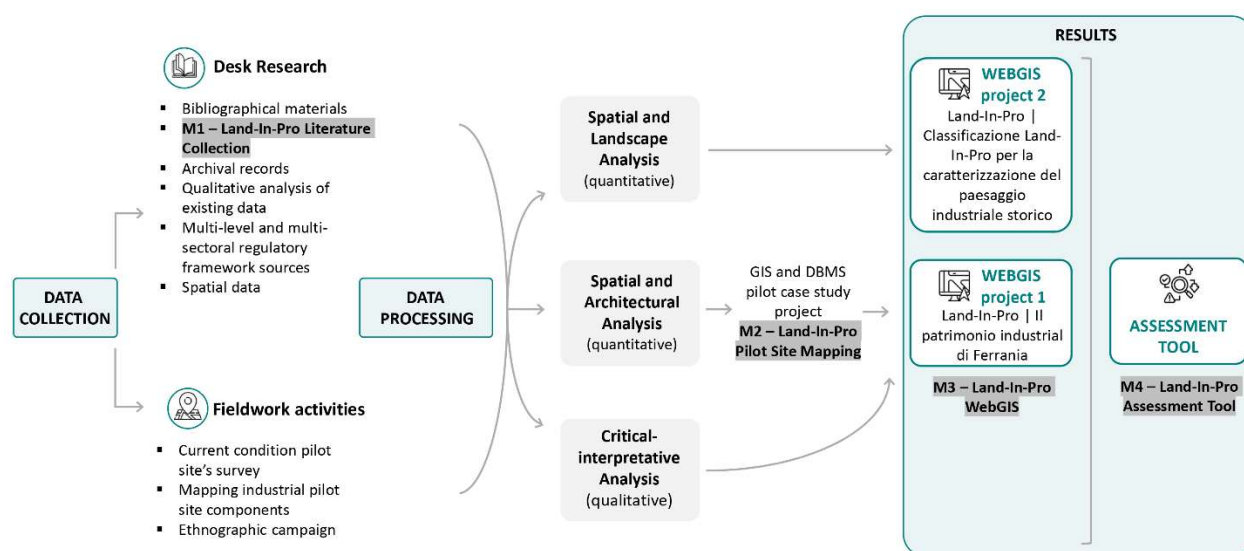

Figure 1 - Land-In-Pro methodological workflow © Land-In-Pro, 2022-2025.

2.2. Description of the Land-In-Pro Assessment Tool

The Land-In-Pro AT provides a structured protocol to support the recognition of Historic Industrial Landscapes as heritage assets. It adopts a heterarchical perspective, assuming that landscape character and value emerge from the interaction of multiple components and actors – material traces, spatial relations, practices and memories – rather than from a single dominant element. For this reason, the Land-In-Pro AT combines evidence-based spatial analysis with interpretative and socio-cultural investigations, in order to produce an assessment that is transparent, reproducible and comparable across sites.

Methodologically, the Land-In-Pro AT is grounded in a critical review of two consolidated GIS-based approaches for investigating the historical dimension of landscapes – Historic Landscape Characterisation (HLC)[5] and Valutazione Storico Ambientale (VASA)[6] – selectively integrating their most effective aspects into an *ad hoc* framework for historic industrial landscapes. From HLC, Land-In-Pro derives an operational emphasis on integrating heterogeneous sources within a GIS environment, and the use of a hierarchical legend structure that supports multi-scalar mapping and progressive levels of detail. From VASA, it adopts the logic of fixed, comparable temporal thresholds to enable diachronic land cover/use mapping and the explicit reading of transformation dynamics, re-calibrating this approach to the key phases of industrialisation and deindustrialisation.

The methodology is articulated into six sequential steps. Steps 1-4 are fully specified, while Steps 5 and 6 are

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[5] More information are available at: https://historicengland.org.uk/research/methods/characterisation/historic-landscape-characterisation/ (accessed, December 10, 2025).

[6] More information are available at:
https://www.reterurale.it/downloads/All_2_VASA_metodologia_per_la__valutazione__integrit___.pdf (accessed, December 10, 2025).

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presented in provisional form. Each step produces intermediate outputs that become inputs for subsequent phases. The workflow is articulated as follows:

- **Step 1 - Data collection: Desk and Fieldwork Research Activities:** integrates documentary research and field survey to build a structured knowledge base organised in a GIS geodatabase.
- **Step 2 - Identification of the Land-In-Pro HILC Mapping Area:** defines the Land-In-Pro HILC Mapping Area through visibility-based analysis, delimiting the perimeter for the subsequent Land-In-Pro Classification.
- **Step 3 - Land-In-Pro Historic Industrial Landscape Classification (Land-In-Pro HILC):** reconstructs land cover/use change over time and classifies the components of the Historic Industrial Settlement System through Land-In-Pro Classes and Macro-classes, providing a structured characterisation of the historic industrial landscape.
- **Step 4 - Land-In-Pro Industrial Heritage and Landscape Values Assessment:** complements the quantitative and expert-led analysis with a more qualitative reading by identifying and interpreting values recognised by local communities.
- **Step 5 - Landscape Metrics for the Historic Industrial Landscape Assessment:** translates these inputs into qualitative and quantitative metrics to compare different reference years and highlight dominant dynamics of change.
- **Step 6 - Critical Evaluation of the Historic Industrial Landscape:** synthesises the results into a critical evaluation of significance, integrity, vulnerability and resilience, supporting more informed conservation and change management strategies.

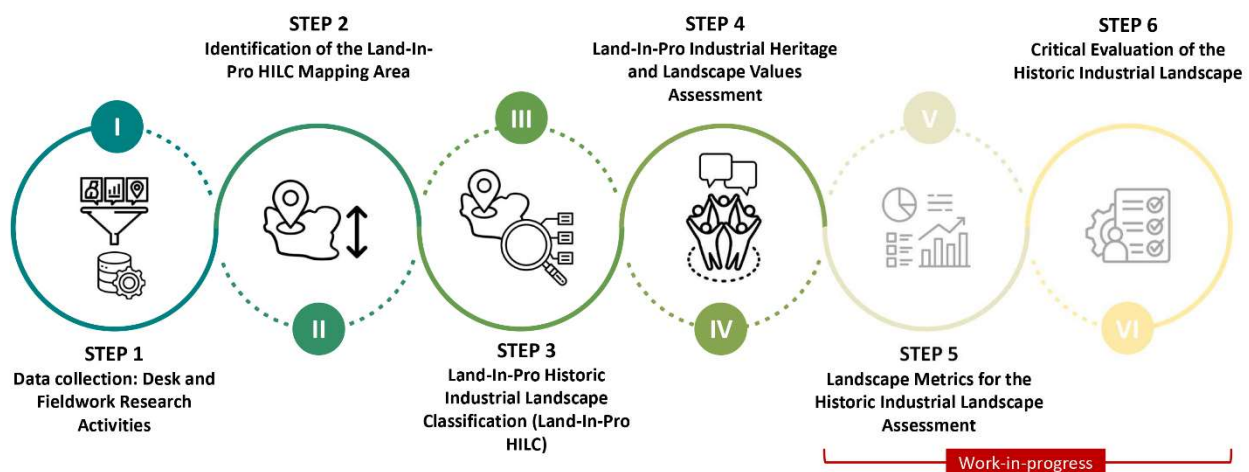*Figure 2* – Step-by-step workflow of the Land-In-Pro Assessment Tool © Land-In-Pro, 2022-2025.

2.2.1. STEP 1 – Data collection: Desk and Fieldwork Research Activities

Step 1 establishes the knowledge baseline for the entire assessment workflow. It integrates desk-based research and fieldwork activities to produce a GIS-structured dataset that supports all subsequent steps.

Objectives:

- Reconstruct the history of the industrial site and its spatial development within the territorial and regulatory context, in order to build an **integrated knowledge framework**.
- **Identify and map the main components** of the site-landscape system by cross-reading documentary sources and field evidence.
- Document **current conditions** and the **state of conservation** of both the industrial site and its landscape setting.

Overall workflow:
1. **Documentary research**: collection and systematisation of bibliographical materials, archival records and spatial data.
2. **Fieldwork activities**: targeted survey campaigns supported by mobile GIS and mapping app to collect in situ geospatial data, complemented by photographic/video documentation and, where relevant, ethnographic campaigns (e.g., interviews, participatory mapping, focus groups).
3. **Data integration**: harmonisation and integration of desk- and field-derived information into a single GIS project.

Results: A **GIS dataset** of site and landscape components, georeferenced and described through a minimum set of shared attributes, serving as the main information source and common reference base for all subsequent steps.

2.2.2. STEP 2 – Identification of the Land-In-Pro HILC Mapping Area
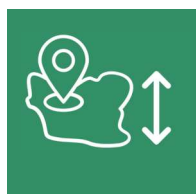
Step 2 defines the Land-In-Pro HILC Mapping Area through a visibility analysis that reconstructs the reciprocal visual relations between the industrial site, its industrial landscape components, and its wider setting. The Land-In-Pro HILC Mapping Area is the reference perimeter within which the Historic Industrial Landscape Classification (Step 3) is applied.

Objectives:
- Reconstruct the **visual relations** between the industrial site, the components of the historic industrial landscape, and the broader territorial context.
- Define the **Land-In-Pro HILC Mapping Area** to be used as the reference perimeter for the subsequent classification phase (Step 3).

Overall workflow:
1. **Selection and georeferencing viewpoints**: identification of significant viewpoints (e.g., belvederes, panoramic points and routes), based on panoramic photographs, historical visual materials and ethnographic inputs; subsequent georeferencing within a GIS environment.
2. **Visibility analysis**: use of observation points and elevation/surface models (DSM) to compute viewsheds and produce a visual sensitivity map.
3. **Definition of the Land-In-Pro HILC Mapping Area**: tracing of the Land-In-Pro mapping perimeter by combining the visual sensitivity map with key morphological/settlement features and, where available, inputs emerging from ethnographic activities.

Results:
- A GIS-based **visual sensitivity map**.
- A **polygon GIS layer** representing the **Land-In-Pro HILC Mapping Area**, accompanied by a short technical note documenting the delimitation criteria.

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2.2.3. STEP 3 – Land-In-Pro Historic Industrial Landscape Classification (HILC)

Step 3 constitutes the core analytical phase of the Assessment Tool. It builds on (i) the knowledge base and GIS dataset produced in Step 1, (ii) the Land-In-Pro HILC Mapping Area defined in Step 2, in order to map land cover/use change in different reference years and to classify the components of the Historic Industrial Settlement System (HISS) through the Land-In-Pro Classes and Macro-classes.

Objectives:
▪ Reconstruct the **evolution of land cover/use** across multiple reference years (min. two), selected to represent key phases of industrialisation (e.g., 1940–1960), deindustrialisation (from the 1970s onwards), and the present-day configuration.
▪ **Map and classify the components** of the HISS and its surrounding context using the Land-In-Pro Classes and Macro-classes, in order to provide a structured characterisation of the historic industrial landscape.

Overall workflow:
1. **Defining reference years and cartographic framework**: selection of reference years based on historical relevance (i.e., the need to document key phases of industrialisation/deindustrialisation) and on the availability and quality of spatial data (i.e., the existence of historical cartography, aerial imagery and orthophotos suitable for detailed mapping). Where required, orthorectification and georeferencing are carried out, and a dedicated GIS project is prepared for each reference year.
2. **Mapping land cover/use**: iterative process for reconstructing land cover/use through a workflow combining an initial semi-automatic classification with subsequent cycles of manual editing and photo-interpretation to correct and refine polygon boundaries, producing – per year – a vector map of land cover/use macro-categories.
3. **Classifying the historical industrial landscape**: attribution of the corresponding Land-In-Pro Classes and Macro-classes to the polygons of the land cover/use macro-categories, thereby producing a consistent Historic Industrial Landscape Classification (HILC) for each reference year within the Land-In-Pro HILC Mapping Area.

Results: A **polygon GIS layer for each reference year**, covering the entire Land-In-Pro HILC Mapping Area, in which each polygon is attributed with the corresponding Land-In-Pro Class and related Macro-class, enabling diachronic comparison and structured interpretation of landscape change.

Table 1 reports the Land-In-Pro HILC Macro-classes and Classes.

LAND-IN-PRO HILC MACRO-CLASSES CODE AND NAME	LAND-IN-PRO HILC CLASSES
LIP.MC1 – EN: Historic industrial buildings and facilities/IT: Edifici e strutture industriali storiche.	LIP.C1 - EN: Industrial buildings - Production facilities/IT: Edifici industriali – Stabilimenti produttivi. LIP.C2 – EN: Industrial buildings - Storage and logistics/IT: Edifici industriali – Magazzini e logistica. LIP.C3 - EN: Industrial buildings - Energy and utilities/IT: Edifici industriali – Energia e servizi. LIP.C4 - EN: Industrial buildings - Administrative and support services/IT: Edifici industriali – Servizi amministrativi e di supporto.

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LAND-IN-PRO HILC MACRO-CLASSES CODE AND NAME	LAND-IN-PRO HILC CLASSES
	LIP.C5 - EN: Industrial buildings - Research, innovation, and development/IT: Edifici industriali – Ricerca, innovazione, sviluppo.
LIP.MC2 – EN: Residential buildings and accessory structures associated with the industry/IT: Edifici residenziali e strutture accessorie a servizio dell'industria.	LIP.C6 - EN: Residential buildings - executives, employees, workers housing and company guesthouse/IT: Edifici residenziali – Alloggi per dirigenti, dipendenti e operai e foresteria aziendale. LIP.C7 – EN: Residential buildings historically associated with the industry/IT: Edifici residenziali storicamente a servizio dell'industria. LIP.C8 - EN: Residential accessory structures/IT: Strutture accessorie residenziali.
LIP.MC3 – EN: Reuse of existing buildings and facilities for residential purposes/IT: Riutilizzo di edifici e strutture esistenti a fini residenziali.	LIP.C9 - EN: Reuse of existing buildings and facilities for residential purposes/IT: Riutilizzo di edifici e strutture esistenti a fini residenziali. LIP.C10 - EN: Residential buildings and accessory structures historically associated with the reuse of existing facilities by the industry/IT: Edifici residenziali e strutture accessorie storicamente associati al riuso di strutture esistenti da parte dell'industria.
LIP.MC4 – EN: Reuse of existing buildings and facilities for industrial purposes/IT: Riutilizzo di edifici e strutture esistenti a fini industriali.	LIP.C11 – EN: Reuse of existing buildings and facilities for industrial purposes/IT: Riutilizzo di edifici e strutture esistenti a fini industriali. LIP.C12 - EN: Industrial buildings historically associated with the reuse of existing facilities by the industry/IT: Edifici industriali storicamente associati al riuso di strutture esistenti da parte dell'industria.
LIP.MC5 – EN: Reuse of existing buildings and facilities for leisure, sport, educational, cultural and health purposes/IT: Riutilizzo di edifici e strutture esistenti a fini ricreativi, sportivi, educativi, culturali e sanitari.	LIP.C13 - EN: Reuse of existing buildings and facilities for leisure, sport, cultural, commercial, educational, health, and agricultural purposes/IT: Riutilizzo di edifici e strutture esistenti a fini ricreativi, sportivi, culturali, commerciali, educativi, sanitari e agrari LIP.C14 - EN: Buildings for leisure, sport, cultural, commercial, educational and health purposes historically associated with the reuse of existing facilities by the industry/IT: Edifici a fini ricreativi, sportivi, culturali, commerciali, educativi e sanitari storicamente associati al riuso di strutture esistenti da parte dell'industria.
LIP.MC6 – EN: Worship, commercial, leisure, sport, educational, cultural buildings and health and public facilities associated with the industry/IT: Luoghi di culto, strutture commerciali, ricreative, sportive, educative e culturali, e servizi/attrezzature sanitarie e pubbliche a servizio dell'industria.	LIP.C15 – EN: Worship facilities/IT: Luoghi di culto LIP.C16 - EN: Educational and health services/IT: Attrezzature educative e sanitarie. LIP.C17 - EN: Leisure and cultural facilities/IT: Attrezzature ricreative e culturali. LIP.C18 - EN: Sport facilities/IT: Attrezzature sportive LIP.C19 - EN: Commercial facilities/IT: Strutture commerciali

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LAND-IN-PRO HILC MACRO-CLASSES CODE AND NAME	LAND-IN-PRO HILC CLASSES
	LIP.C20 - EN: Public services and facilities – e.g. local police, carabinieri, offices, post offices/IT: Servizi e attrezzature pubbliche – es. polizia locale, carabinieri, uffici, uffici postali
LIP.MC7 – EN: Road, rail networks, greenery and vegetation in the setting of industrial areas/IT: Reti stradali e ferroviarie e verde pubblico nell'intorno delle aree industriali.	LIP.C21 – EN: Public greenery in the setting of industrial areas /IT: Verde pubblico nell'intorno delle aree industriali. LIP.C23 - EN: Road and rail networks in the setting of industrial areas – including parking areas, stations and related service buildings and areas/IT: Reti stradali e ferroviarie nell'intorno delle aree industriali – comprese aree di parcheggio, stazioni e aree/edifici di servizio connessi.
LIP.MC8 – EN: Road, rail networks, greenery and vegetation within the industrial areas/IT: Reti stradali e ferroviarie e aree verdi interne alle aree industriali.	LIP.C22 - EN: Vegetation and greenery within industrial areas/IT: Verde interno alle aree industriali. LIP.C24 - EN: Road and rail networks within industrial areas – including parking areas, stations and related service buildings and areas/IT: Reti stradali e ferroviarie interne alle aree industriali – comprese aree di parcheggio, stazioni e aree/edifici di servizio connessi.
LIP.MC9 – EN: Forest and semi natural areas (CLC 2018)/IT: Territori boscati e ambienti semi-naturali (CLC 2018).	LIP.C25 - EN: Forest/IT: Boschi. LIP.C26 - EN: Shrub and/or herbaceous vegetation associations/IT: Ambienti con vegetazione arbustiva e/o erbacea. LIP.C27 - EN: Open spaces with little or no vegetation IT: Spazi aperti con/senza vegetazione.
LIP.MC10 – EN : Artificial surfaces (CLC 2018)/IT : Superfici artificiali (CLC 2018).	LIP.C28 - EN: Road and rail networks and associated land/IT: Reti stradali e ferroviarie e spazi accessori LIP.C29 - EN: Industrial or commercial units/IT: Aree industriali o commerciali. LIP.C30 - EN: Discontinuous urban fabric/IT: Tessuto urbano discontinuo LIP.C31 - EN: Green urban areas/IT: Aree Verdi urbane LIP.C32 - EN: Sport and leisure facilities/IT: Aree sportive e ricreative LIP.C35 - EN: Dump sites/IT: Discariche.
LIP.MC11 – EN: Water bodies (CLC 2018)/IT: Corpi idrici (CLC 2018).	LIP.C33 - EN: Water courses/IT: Corsi d'acqua LIP.C34 - EN: Water bodies/IT: Bacini d'acqua
LIP.MC12 – EN: Unclassified/IT: Non classificato.	LIP.C36 - EN: Unclassified/IT: Non classificato

Table 1 – EN: Macro-classes and Classes of the Land-In-Pro Historical Industrial Landscape Classification (HILC).

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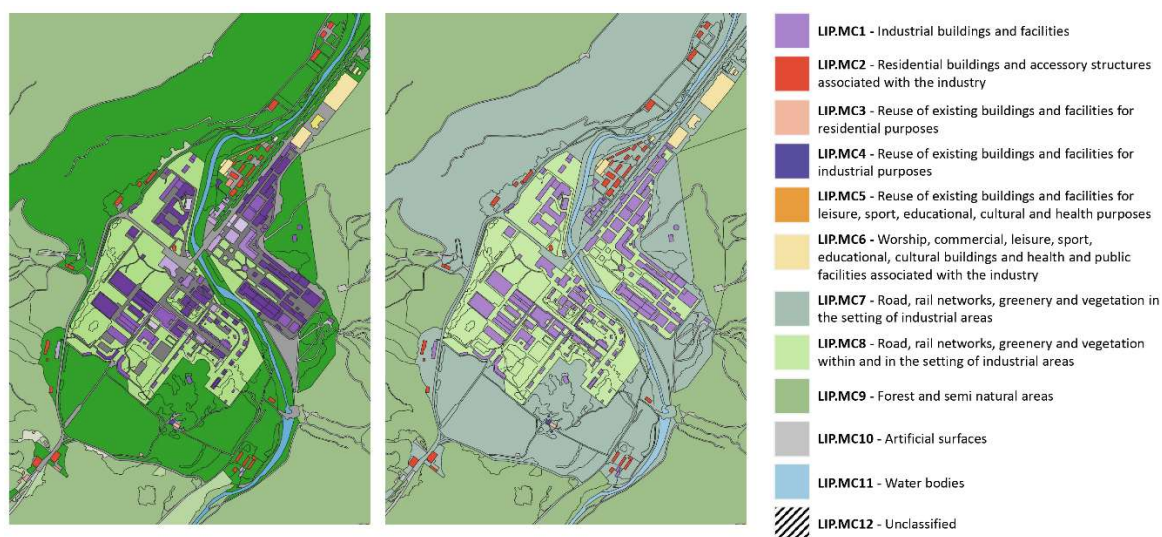
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Figure 3 – Example of Land-In-Pro Classes and Macro-classes applied to a portion of the 1944 reference-year vector map © Land-In-Pro, 2022-2025.

2.2.4. STEP 4 – Land-In-Pro industrial Heritage and Landscape Values Assessment
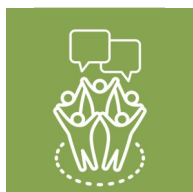
Step 4 integrates community perspectives into the Land-In-Pro AT in a structured way. It complements the expert-led and GIS-based analysis developed in Steps 1-3 with a systematic qualitative assessment based on ethnographic materials collected during Step 1 fieldwork.

Objectives:
- **Identify the main Land-In-Pro heritage and landscape values** that local communities associate with the Historic Industrial Settlement System and its wider context, considering both tangible and intangible dimensions.
- Analyse **how** recognised **values articulate across three temporal dimensions** (past, present and future).
- **Support conservation, reuse and management strategies** highlighting which values communities perceive as significant, contested or under-recognised, to be considered alongside technical and expert evaluations.

Overall workflow:
1. **Preparation and structuring of the qualitative data corpus**: transcription, anonymisation and organisation (with essential metadata) of ethnographic materials collected during Step 1 fieldwork activities.
2. **Coding Land-In-Pro Industrial Heritage and Landscape Values**: systematic qualitative Content Analysis applied to the interview corpus. Relevant excerpts are assigned to the Land-In-Pro Industrial Heritage and Landscape Values Categories and linked to the corresponding temporal dimension (past/present/future).
3. **Interpretation phase and formulation of key questions**: synthesis of emerging patterns (recurring values, convergences, tensions, perceptual gaps) into (i) a critical interpretative report and (ii) a set of guiding questions to support planners, technicians and decision-makers in explicitly considering

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community perspectives.

Results:
- A **synthetic qualitative-interpretative report** describing how heritage and landscape values emerge across different participant groups and temporal dimensions, highlighting convergences, tensions and potential "blind spots" (e.g., values or places that area scarcely mentioned).
- A **set of guiding questions** that help decision-makers take community perspectives into account when formulating value-aware conservation and change management strategies, while recognising that these perspectives complement the expert-based assessment.

2.2.5. STEP 5 – Landscape metrics for the Historic Industrial Landscape Assessment

Step 5 calculates qualitative and quantitative landscape metrics to evaluate the composition of the historic industrial landscape, enabling comparison across different reference years and supporting the interpretation of the main dynamics of change.

At present, Step 5 is work in progress and is presented in a provisional form. The ongoing development builds on a series of landscape metrics, originally conceived for analysing extended land-use mosaic units, evaluating the adaptation to the specific mixed-scale nature of historic industrial landscapes, where "components" are often punctual or small-to-medium areal units (e.g., buildings, plants, yards, infrastructures etc.) whose relevance emerges at the architectural and settlement-system scale. Accordingly, the current emphasis is on reconstructing and comparing the diachronic dynamics of components across the selected reference years, using Land-In-Pro HILC Classes and Macro-classes. In practical terms, this approach is intended to support the comparative reading of:
- **Changes in consistency** (e.g., variation in the number of components per Macro-class).
- **Use/function changes** (e.g., industrial to residential; industrial to services/leisure).
- **Persistence and substitution patterns** (e.g., continuity/discontinuity of footprint and, where data allow, volumetric continuity/discontinuity).

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LIP.MC1 - Industrial buildings and facilities

LIP.MC2 - Residential buildings and accessory structures associated with the industry

LIP.MC3 - Reuse of existing buildings and facilities for residential purposes

LIP.MC4 - Reuse of existing buildings and facilities for industrial purposes

LIP.MC5 - Reuse of existing buildings and facilities for leisure, sport, educational, cultural and health purposes

LIP.MC6 - Worship, commercial, leisure, sport, educational, cultural buildings and health and public facilities associated with the industry
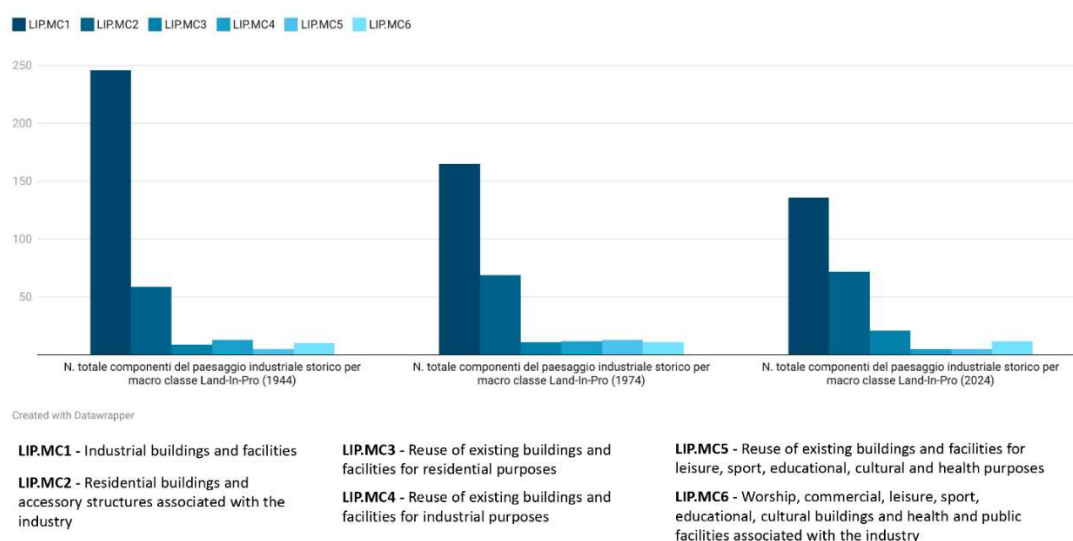
Figure 4 – Variation in the number of architectural components of the historic industrial landscape (LIP.MC1-LIP.MC6). Source:

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National Recovery and Resilience Plan (NRRP) - Mission 4 "Education and Research" - Component 2 "From Research to Business" - Investment 1.2 "Funding projects presented by young researchers" and the European Union - NextGenerationEU — Land-In-Pro | Landscapes of Industrial Production - Documenting and Assessing 20th century (post)Industrial Landscapes as Resources – 100027-2022-FP-PNRR-YR_MSCA_0000005 – CUP No. D33C22001630001 – M4 – WP4

authors' elaboration; bar chart created with Datawrapper[7].

2.2.6. STEP 6 – Critical Evaluation of the Historic industrial Landscape

Step 6 builds on the critical evaluation of the previous steps and supports the identification of the Historic Industrial Landscape's historical-cultural significance, integrity, vulnerability and resilience.

At present, Step 6 is work in progress and is presented in a provisional form. Its aim is to systematise the evidence produced so far into a critical, decision-oriented reading structured around four dimensions:

- **Historical-cultural significance**: the degree to which the Historic Industrial Settlement System and its components are recognisable as a heritage asset because they make legible industrialisation and deindustrialisation processes and production-settlement-territory relations.
- **Integrity**: the completeness and legibility of the HISS as a coherent system (components and relations) within the Land-In-Pro HILC Mapping Area, interpreted through diachronic classification, transitions and change dynamics.
- **Vulnerability**: the propensity of the system to lose significance and/or integrity under post-industrial pressures (e.g., abandonment, demolition, incongruent change), considering exposure, sensitivity and response capacity.
- **Resilience**: the capacity to absorb disturbance and adapt through compatible management and reuse, maintaining the legibility of structural relations and recognised heritage and landscape values.

The underlying assumption is that the **Historic Industrial Landscape** becomes analytically explicit at the intersection of these four readings, where priorities, criticalities and potentials can be identified to orient conservation and change management strategies.
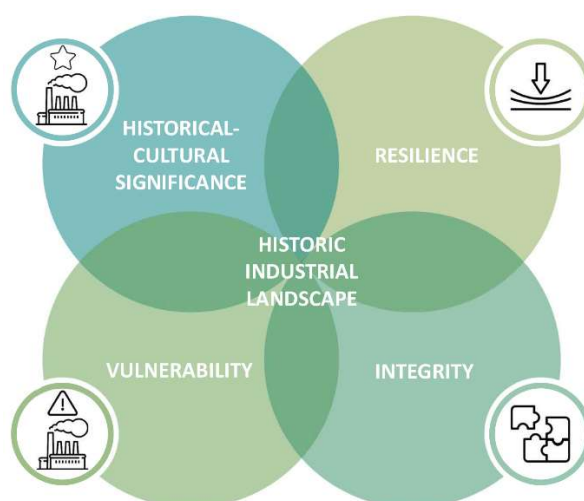

Figure 5 – Four-dimensional framework for the critical evaluation of the Historic Industrial Landscape: significance, integrity, vulnerability and resilience © Land-In-Pro, 2022-2025.

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[7] See: https://www.datawrapper.de/ (accessed, December 10, 2025).

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3. Land-In-Pro Assessment Tool dataset information

Land-In-Pro project pursues a FAIR (findable, accessible, interoperable, and reusable) management of data following EU guidelines.

The following table describes the information compiled for the Land-In-Pro Assessment Tool dataset deposited in the Land-In-Pro's Zenodo Community[8] and it is identified by DOI 10.5281/zenodo.17985687.

Dataset identifier	100027-2022-FP-PNRR-YR_MSCA_0000005_Land-In-Pro_WP4-M4_ Land-In-Pro_Assessment-Tool _1.0
DOI	10.5281/zenodo.17985687
Dataset name	WP4-M4_Land-In-Pro_Assessment-Tool
Dataset description	The Land-In-Pro Assessment Tool (Land-In-Pro AT) is a formal output of the research activities envisaged in Work Package 4 - Interpretation and Evaluation: Development of the Assessment Tool (WP4).
The Land-In-Pro AT draws on and consolidates evidence developed across the project Work Packages, including: (i) documentary and archival research developed in WP1 (Milestone M1); (ii) fieldwork activities carried out in WP2 (Milestone M2); (iii) the GIS-based spatial and landscape analysis developed in WP3 (including the definition of the Land-In-Pro Historic Industrial Landscape Classification); and (iv) qualitative material produced through ethnographic campaigns conducted during WP2 fieldwork and subsequently analysed in WP4.
The Land-In-Pro AT contains the description of the Land-In-Pro Historic Industrial Landscape Classification (Land-In-Pro HILC) that reconstructs land cover/use change over time and classifies the components of the Historic Industrial Settlement System through Land-In-Pro Classes and Macro-classes, providing a structured characterisation of the historic industrial landscape. The Land-In-Pro AT is articulated into six sequential steps. Steps 1-4 are fully specified, while Steps 5 and 6 are presented in provisional form in this published version. Each step produces intermediate outputs that become inputs for subsequent phases.
The Land-In-Pro AT was developed through an iterative process of testing on the Ferrania pilot site, using the pilot application to calibrate the general methodology and to define intermediate outputs transferable to other contexts.
This project milestone has been written by Dr Federica Pompejano and Dr Sara Mauri. It relates to:
- WP4   - Version 1.0; created on November 30, 2025; published on December 19, 2025.   - Federica Pompejano, Principal Investigator, RTD-A, Department ofArchitecture and Design (DAD), Università di Genova (UniGe), federica.pompejano@unige.it (creator and depositor).   - Sara Mauri, Postdoctoral researcher, Department Architecture and Design (DAD), Università di Genova (UniGe), sara.mauri@edu.unige.it (depositor)   - Data originates from the processing of data acquired throughout the Land-In-Pro work packages implementation.

Milestone M4 – WP4
Authors: Dr Federica Pompejano, RTD-A (Principal Investigator); Dr Sara Mauri, Postdoctoral Researcher

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	- Keywords: NextGenerationEU, NextGenEu, Ministero dell'Università e della Ricerca, MUR, PNRR, UniGe, DAD, MSCA_0000005, Land-In-Pro, Post-industrial landscape, Industrial heritage, Landscape studies, Architectural conservation, Heritage studies, Land-In-Pro Assessment Tool, Landscape Characterisation, Landscape Classification; Historic Industrial Landscape, Architetture, Strutture, Paesaggio. Architecture, Landscape, Structures - Link: https://landinpro.unige.it/Land-In-Pro_Assessment-Tool - The Land-In-Pro Assessment Tool is part of the Land-In-Pro project, which has received funding from the Ministry of University and Research, General Directorate for Internationalisation and Communication – National Recovery and Resilience Plan (PNRR) - Mission 4 "Education and Research" - Component 2 "From Research to Business" - Investment 1.2 "Funding projects presented by young researchers" and the European Union – Next Generation EU. - The content of this project milestone reflects only the authors' views. The authors, Host Institution, Ministry of University and Research and the European Commission are not responsible for any use that may be made of the information it contains.
Metadata	The metadata are contained in a markdown README file (.txt). Metadata are compiled using the online tool DataCite Metadata Generator - Kernel 4.4 provided by DataCite Metadata Working Group. (2021). DataCite Metadata Schema Documentation for the Publication and Citation of Research Data and Other Research Outputs. Version 4.4. DataCite e.V. https://doi.org/10.14454/3w3z-sa82.
File format(s)	This dataset contain the PDFs (.pdf), text (.txt), and XML metadata
Data sharing	Land-In-Pro Assessment Tool © 2025 by Land-In-Pro Project - Federica Pompejano and Sara Mauri, Department Architecture and Design (DAD), Università di Genova (UniGe) is licensed under Attribution-NonCommercial 4.0 International (CC BY-NC 4.0).
Archiving and Preservation	The storage and preservation of data contained in this dataset is ensured and guarantee during and after the project implementation by the server facility provided by the Lab. MARSC at the Department of Architecture and Design (DAD), University of Genoa and in the PI's institutional external SSD. A copy is stored in the Open Access repository Zenodo, Land-In-Pro Community: https://zenodo.org/communities/landinpro-unige?q=&l=list&p=1&s=10&sort=newest

Table 2 - Land-In-Pro Assessment Tool - Dataset description

Milestone M4 – WP4
Authors: Dr Federica Pompejano, RTD-A (Principal Investigator); Dr Sara Mauri, Postdoctoral Researcher

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