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ADAPTIVE REGENERATION

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An East-Central European Framework for Postindustrial Transformation

A methodological guide for working with postindustrial landscapes and territories

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Executive Summary

Adaptive Regeneration introduces a practical framework for understanding and transforming postindustrial landscapes in East-Central Europe. Developed by the PAD Foundation in collaboration with partners in Slovakia, Poland, Czechia and with case contributions from Ukraine, the publication brings together comparative research, design-led methods, and field-tested insights from thirteen sites across the region.

East-Central Europe is shaped by dense layers of industrial development, socialist planning, rapid deindustrialisation after 1990, and ongoing structural transformation. These processes have produced hundreds of sites—steelworks, quarries, chemical plants, rail yards, workers' colonies—that today combine environmental degradation, social vulnerability, and underused economic potential. **At the same time, these places hold some of the region's strongest opportunities for green transition, circular economy development, and cultural revitalisation.**

The framework presented in this guide is built around **four interconnected transformation clusters** that describe the key dynamics of postindustrial territories:

- **Green Development & Environmental Assessment**
  Soil remediation, water management, circular land use, and ecological regeneration.
- **Public Space & Housing**
  Neighbourhood improvement, community infrastructure, inclusion, and micro-regeneration.
- **Heritage & City Image**
  Industrial memory, adaptive reuse, identity, and the role of culture.
- **Economy & Reuse**
  Circular production, small enterprise ecosystems, industrial transition, and new economic models.

By combining spatial analysis, environmental and social indicators, participatory tools, and design thinking, **the framework supports municipalities, professionals, and civic actors in navigating the complexity of postindustrial regeneration.** It helps identify leverage points, compare different types of sites, and design integrated, multi-functional strategies.

Thirteen **case studies demonstrate how postindustrial transformation unfolds across different contexts**—urban and rural, active and abandoned, heavily contaminated or heritage-based. They highlight emerging practices in green infrastructure, community-led adaptation, circular material flows, cultural reuse, and cross-sectoral collaboration.

The publication concludes with actionable recommendations for local governments, regional agencies, NGOs, and European policymakers. These emphasise the need for integrated planning, data-informed decision-making, participatory governance, capacity-building, and adaptive, low-threshold interventions that can be scaled over time.

Adaptive Regeneration positions East-Central Europe not as a disadvantaged periphery, but as a laboratory for just and green transformation. It shows how constraints can become drivers of innovation, and how postindustrial landscapes—once seen as burdens—can become key assets for ecological resilience, social cohesion, and sustainable development.

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1. Introduction – Why Adaptive Regeneration Matters

Across East-Central Europe, thousands of **postindustrial sites** (see Annex 3.1) stretch along the edges of cities and towns—traces of the region's former industrial power that now stand **underused and environmentally burdened**. These **postindustrial peripheries** once anchored employment, infrastructure, and everyday life. Today, they represent both the deepest legacies of the industrial age and some of its greatest untapped resources.

Across the European Union, around 2.8 million contaminated sites are recorded, yet only a quarter has been inventoried (European Environment Agency, 2020). In the Visegrad region, there is still no unified mapping or evaluation system that reflects the specific legacies of East-Central European industrialisation—its company towns, socialist factories, and extractive infrastructures woven into the urban-rural fabric. (see Annex 3.1) Without **shared knowledge**, redevelopment remains fragmented across municipalities, investors, and communities.

At the same time, these landscapes embody a living record of adaptation and resilience. They connect historical layers—from Habsburg mining economies and socialist heavy industry to post-1990 privatisation and contemporary logistics corridors. Beneath their structures lies a complex socio-ecological story of resource extraction, social mobility, migration, and environmental change. According to the OECD's Regions in Industrial Transition publication (2023), **postindustrial transformation** is shaped by intertwined environmental and social path dependencies—precisely the kind of complexity that demands regional cooperation.

Most European regeneration models assume strong markets and robust municipal capacity. In East-Central Europe, however, **adaptive regeneration** (see Annex 3.2) emerges from **constraint**, **informality**, and **hybrid governance** (see Annex 3.2). This publication therefore fills a gap in EU-level knowledge by articulating a method grounded in the realities of **postsocialist urban landscapes**.

The challenge today is not only to clean or rebuild, but to reframe these territories. **Brownfields** (see Annex 3.2) are not empty land—they are **archives of knowledge**, **materials**, **and social relations**. Their regeneration requires new alliances across **ecology**, **urban planning**, **heritage**, and **local economies**, supported by design, policy, and community practice.

The Revitalizing Postindustrial Peripheries project brings together partners from Hungary, Poland, Slovakia, and Czechia to respond to this challenge. By developing a **regional framework**, comparative case studies, and a knowledge-sharing platform, the project aims to make postindustrial regeneration more coordinated, evidence-based, and inclusive.

Postindustrial peripheries can be understood as strategic buffers—spaces where cities meet ecological and social limits, but also where innovation can emerge. These territories offer potential for:

- **environmental renewal** through multifunctional land use (see Annex 3.2), soil restoration, and blue-green infrastructure
- **economic regeneration** through circular material flows (see Annex 3.2), adaptive reuse, and local enterprise networks
- **social inclusion** through accessible public spaces, housing, and participatory governance
- **cultural continuity** through reinterpretation of industrial heritage and community narratives

Regenerating these areas means working with complexity rather than erasing it. The transition from extraction to regeneration is not only technical—it is ecological, social, political, and cultural. The peripheries of East-Central Europe thus become laboratories for the **just green transition** (see Annex 3.2), where sustainability, equity, and identity intersect.

This booklet synthesises the project's insights and tools. It outlines the regional context, methodology, and clustered findings, and concludes with recommendations for decision-makers, investors, NGOs, and local actors. Its aim is to translate research into actionable guidance—to show that while postindustrial regeneration is complex, it is achievable through cooperation and **regional learning.**

Regeneration begins when postindustrial spaces are recognised as working parts of the landscape rather than voids.

For full case studies for all sites, see the companion document:
Case Studies: A Comparative Assessment of 13 Sites Across the Region.

→ Quick Guide – How to Use This Framework

A practical orientation for municipalities, planners, NGOs, and researchers

This framework helps different actors understand, compare, and strategically transform **postindustrial territories** across East-Central Europe. It brings together a shared methodology, **six evaluation dimensions** (see Annex 1.1), four **transformation clusters**, and a set of **reference matrices** (see Annex 1.1-Annex 1.5). Use this guide to navigate and apply the tools in the booklet.

1. Identify the Type of Postindustrial Site

Each site belongs to one or more **postindustrial typologies** (see Annex 3.1) such as industrial complexes, extractive landscapes, transport areas, heritage sites, or housing districts. Identifying the type helps anticipate **likely challenges and relevant transformation clusters**.

2. Determine Which Clusters Apply

Most sites involve more than one thematic dimension. The four clusters serve as **analytical lenses:**

- Green Development & Environmental Assessment
- Public Space & Housing
- Heritage & City Image
- Economy & Reuse

They highlight how environmental, social, cultural, and economic factors intersect in specific contexts.

3. Use the Evaluation Dimensions

Across all clusters, six shared **evaluation dimensions** (see Annex 1.1) help diagnose current conditions and support comparison:

- Land Use
- Environment
- Governance
- Functional Intensity
- Social Accessibility

- **Strategic Outlook**

These dimensions provide a structured way to assess complexity and identify which aspects require intervention.

4. Consult the Annex Matrices When Needed

The Annex contains five reference matrices:

- Annex 1.1 – General Evaluation Matrix
- Annex 1.2 – Green Development Matrix
- Annex 1.3 – Public Space & Housing Matrix
- Annex 1.4 – Heritage & City Image Matrix
- Annex 1.5 – Economy & Reuse Matrix

These tables summarise typical **conditions, barriers, opportunities,** and key indicators. Use them to validate your observations or to support planning documents, feasibility studies, and funding applications.

5. Identify Leverage Points

Leverage points are **small, targeted interventions** (see Annex 1.1) that can unlock larger change, particularly in contexts of limited capacity. Examples include:

- opening **public access routes**
- acknowledging and supporting **informal or temporary uses**
- clarifying **ownership**
- improving **ecological connectivity**
- supporting **local enterprises**

They help prioritise actions that have the greatest systemic impact.

6. Use Incremental Steps Only When Large-Scale Action Cannot Yet Begin

Many postindustrial areas face financial, legal, or administrative barriers to immediate large-scale regeneration. In such cases, **incremental actions** are a productive way to begin—but only when linked to a **clear long-term strategy.**

Pilot interventions—such as **temporary uses** (see Annex 3.2), small retrofits, or opening fenced edges—should be defined as **time-bound phases** with explicit follow-up obligations. Incrementality must not be used to postpone necessary structural transformation. Instead, it helps **maintain momentum**, generate evidence, and build support **while preparing for larger interventions** that municipalities and developers remain responsible for delivering.

7. Build Partnerships Early

No single actor can transform postindustrial sites alone. Effective regeneration involves cooperation between:

- municipalities and planning departments
- universities and technical experts
- SMEs and local enterprises
- NGOs, cultural actors, and community groups

Use the framework to identify **shared goals**, coordinate responsibilities, and develop mutually reinforcing actions.

8. Align Local Actions With Broader Policies

Link site-based initiatives to wider frameworks such as the:

- **EU Green Deal & Just Transition Mechanism**
- **New European Bauhaus**
- **EU Soil and Biodiversity Strategies**
- EU and national-level housing, heritage, or climate policies

This alignment strengthens funding applications and ensures local interventions support **long-term territorial resilience**.

9. Combine Ecological, Social, Cultural, and Economic Approaches

Regeneration is most effective when multiple dimensions reinforce each other:

- **ecological restoration** + public space
- **heritage reuse** + creative economy
- **housing renewal** + green infrastructure
- **SME development** + circular material flows (see Annex 3.2)

This integrated thinking is central to adaptive regeneration in East-Central Europe.

10. Treat the Booklet as a Working Toolkit

This publication provides:

- **context** (Section 2)
- **methodology** (Section 3)

- cluster analysis (Section 4)
- regional lessons (Section 5)
- policy recommendations (Section 6)
- reference matrices (Annex 1)

Use the Quick Guide as a map to navigate the resources most relevant to your site and context.

FIGURE 1. **Adaptive Regeneration Workflow**

This diagram summarises the project's step-by-step method: understanding site conditions, selecting relevant clusters, applying shared evaluation dimensions, consulting the reference matrices (see Annex 1.1-Annex 1.5), identifying leverage points, and developing actions and recommendations.

2. The East-Central European Context – Shared Patterns, Diverse Realities

Postindustrial transformation in East-Central Europe unfolds within a landscape that is both shared and deeply diverse. The four Visegrad countries—Poland, Czechia, Slovakia, and Hungary—together with neighbouring Ukraine, inherited extensive **industrial corridors and postindustrial site types** (see Annex 3.1) whose legacies extend into housing, ecology, mobility systems, and collective identity.

Across the region, the industrial era reshaped the relationship between settlements and their hinterlands. Agricultural valleys and forested ridges became infrastructures of extraction, production, and transport. Model industrial neighbourhoods such as Košice-Šaca or Miskolc-Diósgyőr, and quarries and mills in Tatabánya, Veľký Šariš, or Józefów, transformed entire landscapes. After 1990, privatisation, disinvestment, and fragmented ownership left thousands of hectares of land underused, contaminated, or structurally isolated.

Today, these territories face a threefold transition:

- from mass production to more diversified and small-scale production and services,
- from state to more fragmented ownership structures,
- and from centralised planning to uneven, market-driven governance.
- Despite these shifts, they contain significant reserves for ecological and economic renewal.

2.1 Common Challenges

Environmental burdens

Decades of industry left persistent **environmental burdens:** polluted soils and water, waste deposits, and degraded habitats. Sites such as Bratislava's Istrochem or the steelworks of Košice-Šaca illustrate the enduring consequences of chemical and heavy industrial activity. Yet many landscapes also show signs of **spontaneous regreening and ecological succession** (see Annex 3.2), where natural recovery and informal care practices initiate environmental renewal.

Social fragmentation

Deindustrialisation has contributed to **social fragmentation** in former workers' neighbourhoods such as Mésztelep (Tatabánya) and Jónástelep (Salgótarján). These areas often face degraded housing, low employment, limited services, and persistent stigma. Without deliberate, inclusive planning, regeneration risks deepening inequalities.

Economic vulnerability

Many postindustrial areas struggle with economic vulnerability. Global market shifts, privatisation, and uneven investment have left sites like Liberty Steel Ostrava or Rzeszów's rail facilities in states of limbo. Meanwhile, opportunities for **circular economy practices** (see Annex 3.2)—repair industries, material reuse, local production—remain undersupported.

Governance gaps

Complex land ownership, unclear responsibility, and limited municipal capacity contribute to persistent governance gaps. These gaps slow decision-making, complicate remediation, and inhibit long-term planning. Regional cooperation, shared frameworks, and cross-border learning can help fill these structural voids.

2.2 Regional Opportunities

Despite shared challenges, each country brings distinct strengths:

Czechia - advanced planning instruments and participatory design approaches in cities like Ostrava support strategic, multi-scalar regeneration.

Poland - strong heritage-led revitalisation, exemplified by Ustrzyki Dolne's refinery and Józefów's quarry, integrates culture, ecology, and education.

Slovakia - community and ecology-driven adaptation in sites such as Veľký Šariš or Žabí Majer demonstrates the potential of civic stewardship.

Hungary - socio-ecological justice concerns in Tatabánya, Salgótarján, and Miskolc highlight the need to align housing, environment, and social policy.

Ukraine - Drohobych's saltworks illustrate cultural resilience and adaptive capacity amid crisis.

2.3 From Shared Heritage to Shared Futures

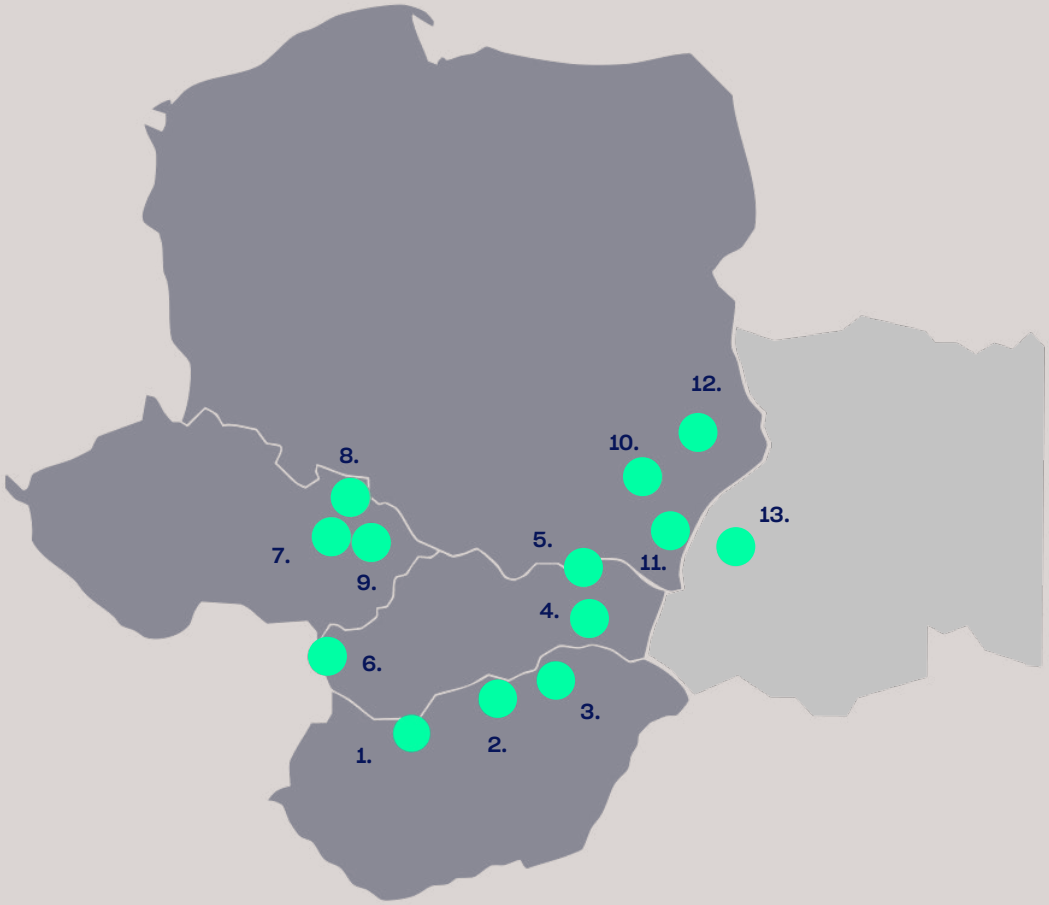
Postindustrial sites are not blank spaces awaiting investment—they are **living archives of industrial heritage, memory, and landscape transformation** (see Annex 3.1). Their layered histories reveal how industrialisation generated both environmental damage and social solidarity, technical ingenuity and cultural identity. Understanding these places requires recognising informal care, ecological succession, **and multifunctional land-use patterns** (see Annex 3.2) already emerging on the ground.

The uniqueness of the Visegrad region lies in its postsocialist trajectory, where rapid economic transition, fragmented ownership, and uneven planning capacity intersect with powerful industrial legacies. Innovation often arises from **informal practices and adaptive, low-threshold reuse** (see Annex 3.2) rather than from strong markets.

As Europe advances toward climate neutrality and the circular economy, the V4 countries stand at a crossroads. Their postindustrial territories can remain marginal, or they can become laboratories for **context-specific adaptive regeneration** (see Annex 3.2)—testing new forms of governance, ecological restoration, and place-based economic renewal.

These places share not decline, but the conditions for **context-specific regeneration shaped by environmental, social, and institutional realities.**

FIGURE 2. **Locations of the 13 Case Study Sites in East-Central Europe**



1. Tatabánya: Stone Quarry & Mésztelep Neighbourhood
2. Salgótarján: Steelworks, Acélgyári út & Jónástelep
3. Miskolc: Diósgyőr Ironworks
4. Košice-Šaca: Steel District Transformation
5. Veľký Šariš: Steam Mill Regeneration
6. Bratislava: Istrochem Plant & Žabí Majer Garden Community
7. Ostrava: Ostrčilova Street High-Rise
8. Ostrava: Ostravice Riverfront Regeneration
9. Ostrava: Liberty Steelworks – former ArcelorMittal
10. Rzeszów: Railway Facilities & Main Station
11. Ustrzyki Dolne: Fanto Oil Refinery & Cultural Heritage Centre
12. Józefów: Women's Valley Stone Mine & Geopark
13. Drohobych: Saltworks

3. Methodology – Framework Development

The Revitalizing Postindustrial Peripheries project set out not only to collect examples, but to build a **shared regional method.** Across the Visegrad region, brownfield regeneration has long been fragmented, with municipalities, developers, and researchers working within separate data systems, legal frameworks, and planning cultures. The objective was to create a **comparative framework** (see Annex 1.1) flexible enough for local realities yet structured enough to support regional learning.

FIGURE 3. **Methodological Process Overview**

3.1 Approach and Principles

Four partners—the PAD Foundation (HU), Spolka (SK), the University of Rzeszów (PL), and the University of Ostrava (CZ)—collaborated to map and analyse **postindustrial peripheries and site typologies** (see Annex 3.1) in their respective contexts. Each team selected case studies representing different scales and sectors, from large steelworks to small-town mills.

To ensure **comparability across diverse conditions, all partners used a shared analytical template** examining land-use legacies, public-space dynamics, accessibility, narratives of identity and exclusion, and ecological and governance conditions. This allowed each site to retain its local specificity while still enabling meaningful cross-case and **cross-country comparison.**

Evidence was gathered through field visits, archival materials, municipal strategies, and insights from local actors. Stakeholders—including residents, NGOs, municipal staff, and entrepreneurs—contributed to interpreting findings, grounding technical analysis in lived

experience. Preliminary results were refined through partner workshops, where a shared set of **evaluation dimensions** (see Annex 1.1) was developed for the final synthesis.

3.2 Method Development

The framework created within the project is not only a research tool, but a **replicable method for strategic regeneration**. Its **conceptual design and coordination** were led by the PAD Foundation, drawing on experience in heritage-driven and socio-ecological regeneration.

A shared method with regional roots and wider relevance – developed by PAD and collaboratively tested and validated by the partner institutions.

This combination of **conceptual leadership** and **distributed field testing** ensures that the method captures regional commonalities while accommodating diverse local planning and governance contexts.

3.3 Database and Case Typology

The project produced a 13-site regional database spanning heavy industry, extractive landscapes, transport infrastructure, chemical zones, cultural-industrial heritage, and postindustrial housing. Summaries of all 13 case studies are provided in **Annex 2.** The database integrates both **quantitative data**—such as site size, ownership structures, contamination types and major legacies—and **qualitative insights** on historical development, social perceptions, and the roles of local actors. This dual approach brings the **material and social dimensions** of transformation into a single comparative framework.

Typological categories include (see Annex 3.1):

- **Heavy Industrial Complexes** - steel, chemical and machinery plants (Košice-Šaca, Miskolc Ironworks, Liberty Steel Ostrava, Istrochem Bratislava)
- **Extractive Landscapes** - quarries and mines evolving toward ecological or recreational uses (Tatabánya, Józefów)
- **Industrial Heritage Sites** - mills, refineries, saltworks repurposed for civic or educational use (Veľký Šariš, Ustrzyki Dolne, Drohobych)
- **Transport & Logistics Zones** - rail and logistics areas or corridors with adaptive potential (Rzeszów Main Station)
- **Workers' Neighbourhoods & Socialist Housing** - residential areas shaped by industrial employment and postsocialist-transition legacies

3.4 The Cluster Model

To synthesise the findings, all cases were organised into **four thematic clusters** representing key dimensions of postindustrial transformation:

- **Green Development & Environmental Assessment**
- **Public Space & Housing**
- **Heritage & City Image**
- **Economy & Reuse**

Each cluster was analysed using **six shared dimensions of the evaluation framework** (see Annex 1.1): land use, environment, governance, functional intensity, social accessibility, and strategic outlook. These dimensions provide a common language for comparing sites and identifying where conditions reinforce or hinder regeneration.

3.5 Indicators and Evaluation Framework

The assessment framework integrates **quantitative and qualitative indicators** (see Annex 1.1) across the six dimensions:

- **Land Use** - proportions of reused vs. vacant land; functional diversity
- **Environment** - soil and water remediation efforts; biodiversity indicators
- **Governance** - degree of ownership fragmentation; presence of integrated plans
- **Functional Intensity** (see Annex 3.2) - mix of uses; employment density
- **Accessibility** - public access, mobility connections
- **Strategic Outlook** (see Annex 3.2) - existence of long-term regeneration visions; alignment with just transition objectives

Rather than ranking sites, the framework identifies **leverage points** (see Annex 3.2)—specific conditions where targeted interventions can unlock broader change, such as improving public access, legitimising informal use, clarifying ownership, or coordinating fragmented governance structures.

3.6 Why This Matters

European assessment tools often overlook East-Central Europe's specific conditions: layered industrial heritage, limited municipal capacity, fragmented ownership, and the combined legacies of socialism and rapid market transition.

This method responds to these realities by showing how regional knowledge emerges from constraint—through cooperation, adaptation, and **informal practices** (see Annex 3.2).

As **both a research framework and a policy tool,** it supports municipalities in assessing brownfields, helps NGOs advocate for more inclusive regeneration, and enables cross-border learning through comparable data. It is a living method, expanding with each new case and contributing to a **regional knowledge commons for adaptive regeneration** (see Annex 3.2) in East-Central Europe.

4. Transformation Clusters – Four Lenses for Understanding Postindustrial Change

The 13 case studies show that postindustrial regeneration in East-Central Europe cannot be understood through a single perspective. Each site combines **environmental, social, cultural, and economic** conditions that intersect in different ways. To make these complex realities comparable, the cases were synthesised into **four thematic clusters**. These clusters are not fixed categories but analytical lenses that help identify recurring patterns and the **leverage points** (see Annex 3.2) where targeted action can support wider transformation.

The clusters highlight several dimensions shaping postindustrial peripheries today:

- how land is reused and reconnected to **ecological systems,**
- how people inhabit and negotiate **public space,**
- how **industrial heritage** shapes identity, and
- how **local economies** adapt through new forms of production and reuse.

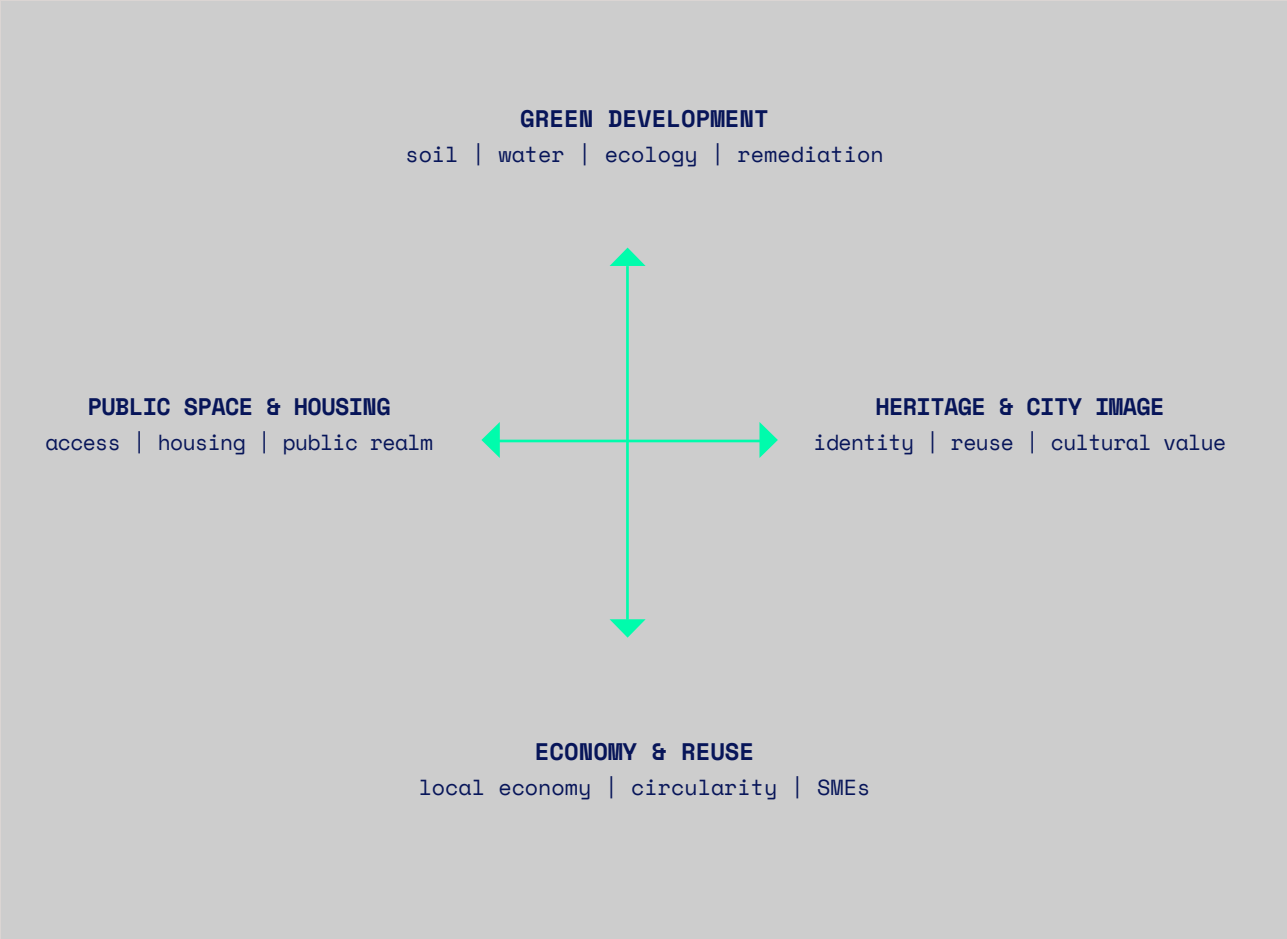
No site belongs to only one cluster. Most combine multiple dynamics, demonstrating how environmental, social, cultural, and economic factors are interdependent. Together, the clusters form a practical framework for identifying where transformation is emerging, where obstacles persist, and how **adaptive regeneration** (see Annex 3.2) can be supported across the region.

Each cluster outlines:

- recurring conditions and barriers,
- opportunities and emerging practices,
- examples drawn from the 13 cases,
- insights for policy, planning, and design.

For the full evaluation matrix summarising the six assessment dimensions, see Annex 1.1

FIGURE 4. **The Four Lenses of Adaptive Regeneration**



4.1 Green Development & Environmental Assessment

Postindustrial landscapes in East-Central Europe bear long legacies of extraction, contamination, and environmental degradation, but they also contain some of the region's strongest opportunities for **ecological renewal.** Quarries, steelworks, chemical plants, and rail zones can function as future **ecological infrastructures** capable of strengthening regional resilience.

Green development begins when these places are understood as **active components** of soil, water, and biodiversity systems rather than as fenced-off remnants of the past.

See Annex 1.2 for the complete Green Development Matrix.

Present Condition

Many sites across the region face significant environmental burdens. Heavy-industrial zones such as Košice-Šaca or Miskolc continue to affect soil and water quality, while chemical facilities like Bratislava's Istrochem remain among the most polluted sites due to complex ownership and liability structures. Extractive landscapes such as Tatabánya and Józefów reveal how decades of resource extraction reshaped entire ecosystems.

Despite these challenges, natural processes often initiate recovery before formal planning begins. **Spontaneous regreening and ecological succession** (see Annex 3.2), informal uses, and community gardening demonstrate how natural processes can create new habitats and opportunities for low-cost environmental regeneration.

Barriers to Regeneration

Key obstacles include:

- **contamination and unclear liability,**
- **fragmented ownership,**
- a lack of **ecological vision** within planning,
- reliance on **technical-first remediation**, and
- short political cycles that hinder **long-term restoration.**

Emerging Opportunities

Several cases illustrate how environmental renewal and adaptive reuse can coexist:

- Tatabánya's quarry shows the potential of spontaneous vegetation and habitat formation.
- Ostrava's riverfront regeneration demonstrates the value of blue-green infrastructure.
- Košice-Šaca highlights opportunities to create ecological buffers and multifunctional open spaces.

These examples reveal that **nature-based solutions, circular soil strategies**, and incremental reuse can be more cost-effective and sustainable than conventional engineering-led remediation.

Governance and Policy Context

Environmental regeneration is shaped by national remediation policies and EU frameworks such as the **Soil Strategy, Biodiversity Strategy, and Just Transition Mechanism**. Many municipalities lack environmental expertise or stable financing, but promising practices emerge where local governments collaborate with **regional agencies, NGOs, universities**, and **community groups** to combine scientific knowledge with local stewardship.

Strategic Outlook

Green development reframes postindustrial landscapes as ecological infrastructures, not liabilities. When remediation aligns with biodiversity, public access, and **multifunctional land use** (see Annex 3.2), sites can evolve into multifunctional landscapes that support both ecosystems and communities.

Ecological renewal becomes feasible when postindustrial land is recognised as part of a living landscape.

4.2 Public Space & Housing

Postindustrial transformation is not only environmental or economic—it is also deeply social. Workers' neighbourhoods, socialist housing estates, and peripheral districts once tied to industry often face degraded infrastructure, social stigma, and limited institutional support. Transforming these areas is essential to ensuring that the green transition is also a **just transition** (see Annex 3.2).

See Annex 1.3 for the complete Public Space & Housing Matrix.

Present Condition

In many postindustrial towns, public spaces and housing conditions reflect long-term disinvestment. Districts such as Košice-Šaca, Salgótarján's Jónástelep, and Tatabánya's Mésztelep were originally integrated with nearby factories, but following deindustrialisation, **public infrastructure deteriorated,** community facilities were lost, and maintenance capacity declined.

Residents frequently sustain courtyards, gardens, and shared spaces through **informal practices** (see Annex 3.2), demonstrating resilience despite limited formal support. In other locations, such as the Ostrčilova high-rise in Ostrava, unused modernist buildings have become focal points for potential adaptive reuse.

Barriers to Regeneration

Transformation is often constrained by:

- **spatial segregation** and physical disconnection,
- outdated **infrastructure,**
- limited municipal capacity and budgets,
- **stigma and exclusion,**
- governance fragmentation across housing, environment, and social services.

Emerging Opportunities

Despite these barriers, several cases demonstrate how **incremental, community-based,** and **participatory approaches** can reconnect housing and public space to broader regeneration efforts:

- In Košice-Šaca, informal gardening, cultural initiatives, and school-based activities maintain social cohesion.

- Ostrava's Ostrčilova tower illustrates how **modernist heritage** can be reinterpreted through adaptive housing and public amenities.
- Neighbourhoods in Tatabánya and Salgótarján show potential for **green retrofits, micro-regeneration, and co-designed improvements.**

These examples demonstrate that small, well-coordinated interventions can have significant cumulative impact.

Governance and Policy Context

In many East-Central European cities, housing, spatial planning, and social policy remain institutionally separated. EU initiatives such as **URBACT**, the **New European Bauhaus**, and the **Just Transition Mechanism** encourage integrated approaches linking social innovation, ecological design, and **community participation.**

Emerging **public-civic partnerships** show how municipalities, NGOs, and residents can share responsibilities for planning, maintenance, and programming. This hybrid governance model supports more continuous and resilient neighbourhood development.

Strategic Outlook

Regenerating postindustrial housing and public spaces requires rebuilding the **everyday infrastructure of collective life.** Inclusive housing policy, **participatory planning**, and climate-adaptive design together provide the basis for equitable, resilient neighbourhoods.

Neighbourhood resilience grows when public spaces and housing function again as accessible and shared environments.

4.3 Heritage & City Image

Industrial heritage is one of East-Central Europe's most significant cultural resources. Steelworks, mills, refineries, quarries, and saltworks not only shape the physical landscape but also influence how communities understand their past and imagine their future. Heritage is not simply a material asset – it is a **narrative tool** that affects identity, investment, and public perception.

Regenerating postindustrial territories requires working with these narratives, rather than against them.

See Annex 1.4 for the complete Heritage & City Image Matrix.

Present Condition

Across the region, industrial heritage stands at a crossroads. In many places, it remains underused, deteriorating, or subject to competing interests. In Ustrzyki Dolne, the former Fanto

Refinery remains a commanding presence but is only partially integrated into contemporary cultural life. The Józefów quarry, an example of an extractive landscape typology (see Annex 3.1), demonstrates how such sites can serve as educational and ecological assets when their histories are made visible. In Drohobych, the saltworks preserve a rare pre-industrial craft tradition, providing continuity amid ongoing uncertainty.

At the same time, disused factories and mills across Hungary, Slovakia, and Czechia face slow decay, unclear ownership structures, or limited investment interest. In some communities, industrial memory is contested or overshadowed by negative associations, shaping local attitudes toward redevelopment.

Barriers to Regeneration

Key challenges include:

- **selective or fragmented memory**, influencing how heritage is valued or ignored;
- **unclear ownership** and legal complexities surrounding historic buildings;
- risk of **gentrification,** where heritage-led investment displaces long-standing communities;
- institutional **separation of cultural heritage and planning,** which slows adaptive reuse;
- narrow interpretations of heritage as static monuments rather than **active, multifunctional spaces.**

Emerging Opportunities

Several cases illustrate how heritage can anchor forward-looking regeneration:

- **Ustrzyki Dolne** - Fanto Refinery: Increasingly used for cultural and educational activities, linking heritage with community identity and tourism.
- **Józefów - Women's Valley Quarry:** A landscape where geological heritage supports outdoor learning, arts programming, and ecological restoration.
- **Drohobych Saltworks:** A unique example of industrial continuity, blending craft production, cultural resilience, and sustainable local economy.

These examples demonstrate that heritage-led regeneration is most effective when material assets, **cultural practices, and community use** evolve together.

Governance and Policy Context

Many heritage sites are constrained by rigid conservation rules that do not align with the economic realities of postindustrial regions. More flexible frameworks – such as **adaptive reuse guidelines, temporary use strategies,** and **community stewardship models** – support incremental, context-sensitive regeneration. European programmes, including **Creative Europe, the New European Bauhaus,** and various cultural heritage initiatives, provide

opportunities for funding, visibility, and collaboration. Successful projects often depend on **hybrid governance,** where municipalities maintain strategic oversight while NGOs, cultural actors, and universities animate spaces through programming and partnerships.

Strategic Outlook

Industrial heritage is not only a remnant – it is a **resource for imagining inclusive futures.** When communities participate in shaping how heritage is interpreted and reused, they strengthen local identity, stimulate cultural economies, and reinforce social cohesion. Approached this way, heritage becomes a catalyst for broader transformation.

Heritage-led regeneration works when cultural identity, community use, and adaptive reuse strategies reinforce one another.

4.4 Economy & Reuse

Postindustrial areas across East-Central Europe often reflect the economic consequences of deindustrialisation: reduced employment, low investment, underused land, and weak local markets. Yet these landscapes also contain significant potential – from **circular material flows** (see Annex 3.2) and small-scale production to creative industries and community enterprises. Regeneration becomes meaningful when it fosters **new forms of value creation** grounded in local capacities.

See Annex 1.5 for the complete Economy & Reuse Matrix.

Present Condition

Across the region, disused factories, warehouses, and logistics areas sit idle or host low-value uses such as storage.

These activities generate limited benefit for local communities and often reinforce mono-functional development patterns. In some cities, sites remain inactive due to contamination, unclear ownership, or speculation.

However, economic reuse is already happening, often informally or in fragmented ways. In Ostrava, small manufacturing firms, cultural organisations, and leisure uses are emerging around former steel infrastructures. In Tatabánya and Miskolc, **informal repair economies and small-scale production networks** (see Annex 3.2) persist, demonstrating the ongoing relevance of local skills and low-threshold production.

Barriers to Regeneration

Economic renewal faces several structural obstacles:

- **weak local markets** and limited demand for major investment;
- dominance of short-term **logistics and storage uses** that bring little local value;

- high costs of remediation or renovation for adaptive reuse;
- limited municipal capacity for **economic development** or SME support;
- rigid regulatory frameworks that restrict **mixed-use or experimental activities.**

Emerging Opportunities

Despite these challenges, several cases demonstrate how small-scale, **place-based economic ecosystems** can support regeneration:

- **Ostrava - Liberty Plant and Riverfront**: Cultural institutions, small businesses, and public spaces together create a diversified local economy.
- **Ustrzyki Dolne - Fanto Refinery:** Cultural programming and educational activities open pathways for creative and community enterprises.
- **Drohobych Saltworks:** Local craft production shows how heritage can sustain niche economic models with strong identity value.

These examples highlight that economic reuse often begins with **incremental, experimental activities,** rather than large external investors.

Governance and Policy Context

Postindustrial economic renewal requires governance approaches that recognise **mixed-use development, circular practices, and SME ecosystems** as legitimate and valuable. EU policies – including the **Circular Economy Action Plan, the Just Transition Mechanism,** and regional innovation strategies – create openings for integrating productive, cultural, and green industries into regeneration efforts.

Municipalities can support these transitions by enabling **temporary use,** providing spaces or micro-grants for **experimental enterprises,** coordinating land tools, and fostering partnerships with universities, NGOs, and small businesses. Financing models that combine public investment with **community stewardship and small private ventures** are especially promising in weaker markets.

Strategic Outlook

Rebuilding economic capacity in postindustrial regions requires shifting from reliance on large external investors to strengthening **local value chains, circular material flows,** and **diverse small enterprises.** When repair cultures, creative economies, and micro-production are recognised as legitimate, they become drivers of long-term resilience and innovation.

Durable economic regeneration develops from local assets and capacities, not from short-term external investment cycles.

5. Cross-Cutting Aspects and Regional Lessons

While each thematic cluster—**Green Development, Public Space & Housing, Heritage & City Image, and Economy & Reuse**—captures a specific dimension of postindustrial transformation, their interconnections define the most meaningful innovations emerging across the Visegrad region. The case studies demonstrate that regeneration succeeds where **ecological, social, cultural, and economic systems** are approached together rather than as isolated sectors.

Multifunctionality

Across the cases, regeneration is most resilient when land supports **multiple functions**—combining public space, production, ecological systems, and community use. This multifunctional approach builds on the region's own history, where industrial districts often integrated workplaces, housing, and shared outdoor areas.

Examples include parks that also serve as water-retention areas, cultural centres that host both community and creative industries, or industrial halls adapted to accommodate SMEs alongside educational and cultural programmes. Multifunctionality increases land-use efficiency, expands funding opportunities, and generates **environmental, social, and economic benefits** simultaneously.

Connectivity

Postindustrial territories often lie between city and countryside or between infrastructure and natural systems. Strengthening **ecological connections**—green corridors, biodiversity networks, blue-green infrastructure—helps re-integrate these areas into regional landscapes.

Equally crucial is **social connectivity**: building cooperation between actors who rarely interact, such as planners and residents, engineers and artists, investors and community gardeners. Connectivity transforms isolated sites into active nodes within broader **urban ecosystems**.

Governance & Participation

A persistent challenge across the region is the **governance gap** (see Annex 3.2): limited municipal capacity confronted with complex industrial legacies. The cases show that when planning processes are opened to residents, NGOs, local businesses, and institutions, regeneration gains both legitimacy and durability.

Participatory mapping, neighbourhood workshops, and community-led initiatives—as seen in Košice and other sites—demonstrate that **inclusion is a precondition for effective transformation,** not a barrier to it. **Hybrid governance models** (see Annex 3.2) shift planning culture from control to coordination and co-production.

Climate Resilience

Environmental repair and climate adaptation converge uniquely in postindustrial settings. Sites such as Žabí Majer or Miskolc-Diósgyőr show how **soil remediation, water retention, and vegetation restoration** can reduce heat-island effects, increase biodiversity, and improve public health. Nature-based solutions embedded in regeneration bring measurable co-benefits: cooler microclimates, reduced runoff, and accessible ecological networks.

Cultural Continuity

Postindustrial transformation is also cultural. Industrial landscapes hold powerful memories of labour, migration, and community identity. The Fanto Refinery in Ustrzyki Dolne and the Drohobych Saltworks show how acknowledging local memory strengthens engagement and economic viability. Storytelling, education, and cultural programming help ensure that regeneration supports **continuity rather than erasure.**

Regional Specificities

The Visegrad region shares the legacies of **socialist industrialisation,** rapid deindustrialisation, privatisation, and institutional fragmentation. Unlike Western Europe—where strong markets and mature regulatory systems support brownfield redevelopment—Central Europe often operates with fewer incentives and weaker governance instruments.

Innovation in this context emerges from constraint: **informal practices and adaptive, low-threshold reuse** (see Annex 3.1), hybrid governance, and practical forms of reuse. The region's challenge—and opportunity—is to transform this adaptive capacity into a structured, shared knowledge base for policy and practice.

Postindustrial regeneration succeeds when ecological, social, cultural, and economic actions reinforce one another, rather than competing for priority.

6. Recommendations for Stakeholders

Regeneration requires coordinated action across local, regional, and European levels. The following recommendations translate the project's insights into **specific, actionable steps** for municipalities, developers, civic actors, national agencies, universities, and EU institutions.

Local Level – Municipalities, Developers, Civic Actors

→ Develop Integrated Regeneration Plans

Who: municipalities, planning departments, NGOs

What: replace single-sector interventions with cross-cutting regeneration strategies linking soil remediation, housing renewal, public space improvements, and ecological planning

How: use the project's framework and evaluation dimensions (see Annex 1.1) as a baseline

Result: more coordinated governance, better access to diverse funding sources

→ Establish Multifunctional Pilot Zones

Who: municipalities, developers

What: designate a pilot site for combined ecological, social, and economic uses

How: support low-threshold activation and phased redevelopment

Result: demonstration models that unlock wider potential across brownfield areas

→ Formalise Community Participation

Who: cities, NGOs, community groups

What: embed participatory mapping, co-design workshops, and micro-grant schemes in planning processes

How: establish clear procedures and delegated responsibilities

Result: socially accepted interventions and stronger long-term stewardship

→ Enable Temporary and Informal Uses

Who: landowners, planners, cultural and civic actors

What: allow temporary use for gardens, workshops, cultural events, and social services

How: light permitting, temporary leases, and risk-managed agreements

Result: early regeneration benefits, enhanced safety, and community ownership

→ Strengthen Data and Planning Capacity

Who: municipal staff, universities, regional experts

What: build capacity in GIS, environmental indicators, and land-use assessment

How: training partnerships, shared tools, and open-access data models

Result: more evidence-based decisions and stronger funding applications

Regional Level – National Agencies, Universities, Knowledge Networks

→ Create a V4 Brownfield Observatory

Who: national ministries, statistical offices, universities

What: a regional database aligned with EU Soil Strategy and Green Deal indicators

How: shared methodologies, harmonised datasets, common evaluation standards

Result: improved monitoring, comparable data, and more efficient funding coordination

→ Develop Cross-Border Pilot Corridors

Who: Interreg programmes, regional authorities, municipalities

What: joint blue-green infrastructure or industrial heritage corridors

How: coordinated planning and investment across borders

Result: stronger regional connectivity and shared innovation models

→ Support Regional Circular-Economy Clusters

Who: universities, SMEs, chambers of commerce, innovation hubs

What: develop clusters around repair economies, construction reuse, and creative industries

How: incubation programmes, micro-grants, shared facilities

Result: diversified local economies and strengthened value chains

European Level – EU Institutions and Funding Bodies

→ Adapt EU Funding Criteria to Postsocialist Realities

Who: EU institutions, specialised agencies and managing authorities

What: modify Green Deal and Just Transition criteria for towns with legacy contamination and limited municipal capacity

How: reduced co-financing rates, simplified monitoring, eligibility based on historical burdens

Result: more equitable access to EU funds and better alignment with on-the-ground conditions

→ Introduce Brownfield Circularity Incentives

Who: European Commission, national ministries

What: reward projects where 50%+ of materials are reused onsite or within local circular economies

How: dedicated scoring in EU funding evaluations

Result: reduced emissions, lower waste generation, measurable circular economy outcomes

→ Support Integrated Regeneration Frameworks

Who: EU funding bodies, European networks

What: promote calls that explicitly link environmental remediation, social inclusion, heritage reuse, and local economic development

How: cross-sector eligibility criteria and evaluation

Result: EU-supported projects that reflect the complex realities of postindustrial territories

Strategic Outlook

By turning postindustrial sites into spaces for **ecological restoration, social innovation, cultural continuity,** and **circular economic activity,** East-Central Europe can articulate a distinctive, context-sensitive model of adaptive regeneration. This model is grounded in **cooperation, pragmatism, and shared regional learning.**

ANNEXES

Annex 1
Evaluation Framework and Cluster Reference Matrices

(see Sections 3.4, Sections 3.5, Sections 4)

This annex compiles the analytical tools used in the Revitalizing Postindustrial Peripheries project. It provides a concise overview of the **evaluation dimensions** and the **four cluster matrices** that support the assessment of postindustrial sites across East-Central Europe. These tables serve as a reference for practitioners, municipalities, researchers, and policymakers engaged in brownfield regeneration.

Evaluation Dimensions

The assessment framework is built on six shared dimensions that apply across all case studies and thematic clusters:

- **Land Use** – reuse intensity, vacancy, functional diversity
- **Environment** – contamination, remediation, ecological value
- **Governance** – ownership structure, planning tools, institutional capacity
- **Functional Intensity** – mix of uses, job density, productive capacity
- **Social Accessibility** – public access, mobility connections, inclusivity
- **Strategic Outlook** – long-term planning, alignment with just and green transition objectives

These dimensions form the backbone of the comparative analysis and provide a common language for understanding transformation potential.

Cluster Reference Matrices

The following matrices summarise typical conditions, barriers, and opportunities across the four transformation clusters. They synthesize insights from the 13 case studies and offer a tool for comparative assessment, using the General Reference Matrix as a shared baseline across all clusters.

Annex 1.1
General Reference Matrix

(see Quick Guide; Sections 3.4 and Sections 3.5)

Dimension	Typical Situation in V4	Barriers	Potential / Good Practices	Key Indicators
Land Use	Large underused or fenced-off areas; slow reuse	Contamination; fragmented ownership	Circular land use strategies; mixed-use ecological redevelopment	% reused vs. vacant area
Environmental Condition	Polluted soils and water	High remediation costs; unclear liability	Nature-based remediation; circular soil reuse; ecological corridors	Number/type of remediation actions
Governance	Weak planning capacity; unclear responsibilities	Limited incentives; complex ownership	Integrated environmental and spatial planning; Just Transition tools	Ownership clarity; existence of integrated plans
Functional Intensity	Mono-functional redevelopment; logistics dominance	Low socio-economic return; lack of mixed use	Combining blue-green infrastructure with public/civic functions	Number of integrated uses per site
Social Accessibility	Many areas inaccessible or fenced	Safety concerns; liability; unclear ownership	Public routes, parks, community gardens, ecological corridors	% publicly accessible area
Strategic Outlook	Sites perceived as liabilities	Short political cycles; lack of long-term visions	Reframing sites as ecological or strategic assets	Presence of long-term regeneration vision

Annex 1.2
Cluster Matrix – Green Development & Environmental Assessment

(see Section 4.1)

Dimension	Typical Situation	Barriers	Potential / Good Practices	Indicators
Land Use	Large derelict or fenced industrial areas	Contamination; fragmented parcels	Ecological redevelopment; circular land use	% of land reused; area of ecological corridors
Environmental Condition	Polluted soils and groundwater; degraded habitats	High remediation costs; unclear liability	Nature-based solutions; phased remediation; biodiversity corridors	Number/type of remediation actions; biodiversity presence
Governance	Limited environmental expertise	Complex ownership; insufficient coordination	Integrated environmental planning; partnerships with NGOs/ universities	Environmental plan in place; # owners/ha
Functional Intensity	Predominantly mono-functional	Weak public benefit	Combining ecological, public, and productive uses	Mixed-use index; ecosystem services
Social Accessibility	Many sites inaccessible	Safety risks; liability	Eco-corridors, public access, community gardens	% publicly accessible area
Strategic Outlook	Seen largely as liabilities	No long-term vision	Framing sites as green infrastructure assets	Qualitative multi-functionality score

Annex 1.3
Cluster Matrix – Public Space & Housing

(see Section 4.2)

Dimension	Typical Situation	Barriers	Potential / Good Practices	Indicators
Housing Stock	Aging, energy-inefficient estates	Limited resources for renovation	Energy retrofitting; mixed-income housing	% units renovated; energy performance
Public Space	Fragmented, underused spaces	Neglect; lack of safety	Multifunctional green areas; small-scale improvements	Public space accessibility ratio
Governance	Siloed departments; weak coordination	Low capacity; short-term project logic	Integrated and participatory models	Number of participatory initiatives
Social Inclusion	Segregation and stigma	Exclusion from planning; weak services	Co-design processes; inclusive programmes	Social inclusion index; resident satisfaction surveys
Accessibility	Poor mobility links	Physical and symbolic disconnection	mproved public transport; walkability	Accessibility index
Strategic Outlook	Ad-hoc interventions	Lack of long-term planning	Integrated neighbourhood strategies	Existence of district-level plan

Annex 1.4
Cluster Matrix – Heritage & City Image

(see Section 4.3)

Dimension	Typical Situation	Barriers	Potential / Good Practices	Indicators
Heritage Assets	Deteriorating structures; unused cultural assets	High renovation cost; unclear ownership	Adaptive reuse; temporary use; phased renovation	% heritage reused; number of adaptive reuse projects
Cultural Identity	Fragmented or contested industrial narratives	Selective memory; weak civic engagement	Storytelling; cultural programming	Participation rates; cultural events/year
Governance	Cultural and planning sectors separated	Slow procedures; rigid regulations	Integrated heritage-planning frameworks	Adaptive reuse guidelines completed
Economic Use	Low viability for investment	Limited financing; poor market conditions	Mixed-use cultural-enterprise models	Number of SMEs/ cultural actors onsite
Accessibility	Many sites closed or fenced	Safety concerns; lack of public routes	Open days, cultural routes, public access zones	% publicly accessible heritage sites
Strategic Outlook	Heritage seen as burdens	Weak policy integration	Positioning heritage as regeneration anchor	Inclusion in local/regional strategies

Annex 1.5
Cluster Matrix – Economy & Reuse

(see Section 4.4)

Dimension	Typical Situation	Barriers	Potential / Good Practices	Indicators
Economic Use	Low-value logistics; idle buildings	High renovation cost; unclear ownership	Mixed-use productive clusters; circular reuse	Jobs/ha; SME count
Business Ecosystem	Weak local markets	Limited SME support	Repair economies; micro-enterprises; incubation	Number of SMEs; SME survival rate
Governance	Limited economic development capacity	Siloed decision-making	Integrated economic-spatial planning	Existence of SME/circular strategy
Infrastructure	Outdated utilities; derelict buildings	High renovation costs	Phased retrofitting; temporary use	m² activated/ year
Accessibility	Poor connections to workforce	Limited transport options	Multimodal access; improved services	Accessibility index
Strategic Outlook	Dependency on external investors	Short-term development pressure	Strengthening local value chains; circular hubs	Presence of long-term local economic plans

Annex 2
Case Study Overview

This annex presents concise summaries of 13 case studies from Hungary, Slovakia, Czechia, Poland, and Ukraine. The cases are situated within the broader regional context and thematic framework developed in Sections 2 and Sections 4.

Detailed, site-specific analyses, extended narratives, and visual documentation are provided in the companion publication:

POSTINDUSTRIAL REGENERATION IN EAST-CENTRAL EUROPE – Case Studies:
A Comparative Assessment of 13 Sites Across the Region

Annex 2.1
Hungary (Cases 1–3)

Case 1 — Tatabánya: Stone Quarry & Mésztelep Neighbourhood (HU)

A former limestone quarry and its adjacent workers' neighbourhood illustrate the intertwined environmental and social histories of industrial extraction. Ecological succession is visible on the quarry floor, suggesting potential for multifunctional green development. Mésztelep, shaped by social vulnerability and segregation, lacks adequate public spaces and services, while municipal capacity remains limited. The case highlights the need to integrate ecological restoration, public space renewal, and community-scale initiatives within a long-term regeneration strategy.

Case 2 — Salgótarján: Steelworks, Acélgyári út & Jónástelep (HU)

This case brings together heavy industrial legacies and the decline of a peripheral housing district. The closed Steelworks area remains structurally and environmentally burdened, while Jónástelep faces isolation, infrastructure degradation, and socio-economic challenges. Opportunities lie in micro-regeneration, reconnecting fragmented public spaces, and mobilising heritage as a cultural asset. Governance gaps and limited resources reinforce the importance of incremental, community-driven interventions.

Case 3 — Miskolc: Diósgyőr Ironworks (HU)

Once a major steelmaking centre, the site retains large but deteriorating industrial structures. The adjacent stream offers ecological potential, though remediation is required. Redevelopment has stalled due to ownership fragmentation and high environmental costs, and residents of the nearby workers' neighbourhood depend on informal networks amid limited public space quality. Still, the area holds potential as a heritage and innovation district where adaptive reuse, ecological restoration, and improved accessibility could converge. The case illustrates the challenge of balancing industrial memory with contemporary economic needs.

Annex 2.2
Slovakia (Cases 4–6)

Case 4 — Košice-Šaca: Steel District (SK)

A large peripheral industrial zone built around the Steelworks, with a workers' housing district now facing declining services and growing spatial disconnection. The site shows how industrial monofunctionality continues to influence mobility, air quality, and public space. Potential lies in integrating open land into ecological buffers and piloting mixed-use redevelopment. Community-led initiatives demonstrate possibilities for social reconnection despite structural constraints.

Case 5 — Veľký Šariš: Steam Mill (SK)

The former steam mill is a prominent heritage landmark near the town centre. Although it has strong identity value, reuse is hindered by deterioration and unstable investment conditions. The site holds potential for cultural programming, tourism, and community activities. It illustrates how smaller municipalities can leverage heritage for place-making even with limited technical capacity and infrastructure.

Case 6 — Bratislava: Istrochem Plant & Žabí Majer Garden Community (SK)

One of the region's most contaminated industrial sites, the Istrochem complex presents severe environmental burdens and highly fragmented ownership. Adjacent Žabí Majer, once a wetland, has evolved into a hybrid terrain where garden plots, informal practices, and spontaneous ecological processes coexist alongside the derelict plant. The contrast between toxic industrial legacy and everyday stewardship shows how bottom-up adaptation can generate ecological and social value under degraded conditions. The case also highlights opportunities for nature-based remediation, ecological connectivity, and strengthened governance for high-risk brownfields.

Annex 2.3
Czechia (Cases 7–9)

Case 7 — Ostrava: Ostrčilova Street High-Rise (CZ)

A modernist residential tower near the historic city core, valued architecturally but suffering from long-term vacancy and unclear redevelopment paths. The case reflects broader challenges of socialist-era housing in postindustrial cities, including spatial disconnection, maintenance deficits, and governance uncertainties. Opportunities include adaptive housing models, cultural reuse, and public-civic partnerships.

Case 8 – Ostrava: Ostravice Riverfront (CZ)

Where postindustrial structures meet the evolving river corridor, the Ostravice waterfront demonstrates how an industrial edge can reconnect with the city. After decades of channelisation and contamination, recent investments in blue-green infrastructure improved flood protection and public access, setting the stage for ecological restoration. Promenades, cycling routes, and cultural uses in reused industrial halls now link recreation with heritage. The case shows how multifunctional landscape design can guide long-term transformation.

Case 9 – Ostrava: Liberty Steelworks - former ArcelorMittal (CZ)

A still-active steel complex undergoing restructuring, Liberty Steelworks illustrates the region's transition from heavy industry toward low-carbon and circular production models. While the plant employs thousands, adjacent lands remain underused, with plans for logistics, innovation, and education facilities. Surrounding areas are beginning to attract creative and small-scale productive activities, suggesting potential for a more diversified economic landscape. Challenges include legacy contamination and infrastructural barriers, while long-term potential lies in expanding circular practices, improving urban connections, and diversifying land use.

Annex 2.4
Poland (Cases 10-12)

Case 10 – Rzeszów: Railway Facilities & Main Station (PL)

A central railway corridor with large underused parcels that shape mobility, noise levels, and urban fragmentation. Redevelopment opportunities lie in integrating transport infrastructure with mixed-use development and green corridors. Barriers include ownership fragmentation and technical constraints. The case shows how transport nodes can be reframed as urban connectors.

Case 11 – Ustrzyki Dolne: Fanto Oil Refinery & Cultural Heritage Centre (PL)

A historic refinery complex with strong cultural significance but limited maintenance. Recent community and cultural initiatives demonstrate alternative models of heritage activation. Environmental burdens and investment uncertainty remain obstacles, yet the site's identity value makes it a strong anchor for local storytelling, tourism, and economic diversification.

Case 12 – Józefów: Women's Valley Stone Mine & Geopark (PL)

A rehabilitated limestone quarry functioning as an educational, recreational, and ecological site. The case demonstrates multifunctional reuse and the potential of extractive landscapes for biodiversity, tourism, and cultural programming. It shows how natural and cultural values can reinforce each other to support local development.

Annex 2.5
Ukraine (Case 13)

Case 13 – Drohobych: Saltworks (UA)

One of Europe's oldest operating saltworks, combining industrial continuity with high symbolic value. The site carries potential for tourism, cultural education, and adaptive reuse, yet faces infrastructure deterioration and economic uncertainty. Several buildings require urgent restoration, but ongoing small-scale production and emerging cultural and eco-tourism activities demonstrate how heritage can remain socially and economically active under constrained conditions. The case highlights the resilience of collective stewardship and the importance of linking deep historical identity with future-oriented regeneration.

Annex 3
Typologies & Glossary

This annex provides a **shared reference framework for interpreting the postindustrial sites** and concepts used throughout the publication. It brings together two complementary components: a typology of **postindustrial site types identified across the Visegrad region**, and a **glossary of key concepts** that recur across the analysis, methodology, cluster assessments, and recommendations. The typologies help situate individual case studies within broader structural patterns, while the glossary clarifies how core terms are used consistently within the Adaptive Regeneration framework. Together, they **support comparability, methodological transparency, and a common language** for practitioners, researchers, and policymakers working with postindustrial transformation.

Annex 3.1
Postindustrial Typologies

(see Introduction; Sections 2, Sections 3.1, Sections 3.3, and Sections 4.3)

Heavy Industrial Complexes

Large-scale steel, chemical, mechanical, or energy facilities with extensive technical infrastructure (e.g., Košice-Šaca Steelworks; Bratislava Istrochem Chemical Plant). These sites are often marked by contamination, infrastructural isolation, and high governance complexity.

Extractive Landscapes

Quarries, mines, and pits shaped by long-term resource extraction (e.g., Tatabánya Stone Quarry; Józefów Quarry). They frequently exhibit ecological succession and distinctive geomorphology.

Industrial Heritage Sites

Former factories, mills, refineries, and technical infrastructures with cultural, architectural, or symbolic value (e.g., Fanto Refinery; Drohobych Saltworks; Veľký Šariš Steam Mill). These sites often anchor local identity but face deterioration and uncertain reuse pathways.

Transport & Logistics Zones

Railway yards, cargo districts, logistics hubs, and transportation corridors (e.g., Rzeszów Main Railway Station; Ostravice Riverfront). Characterised by infrastructural barriers as well as opportunities to create green corridors and improved connectivity.

Workers' Neighbourhoods & Socialist Housing Estates

Residential areas shaped by industrial employment and socialist-era housing (e.g., Mésztelep; Jónástelep; Ostrčilova High-Rise). They commonly feature ageing infrastructure, social vulnerability, and underused or fragmented public spaces.

Annex 3.2
Glossary of Key Concepts

(see Introduction; Quick Guide; Sections 3.5, Sections 4.1-4.4, Sections 5, and Sections 6)

Adaptive Regeneration

A place-based approach to transforming postindustrial sites by working with existing conditions, constraints, and informal practices. It foregrounds incremental interventions, hybrid governance arrangements, and multifunctional land-use outcomes.

Postindustrial Peripheries

Urban edges and transitional peri-urban or rural zones shaped by former industrial operations and extractive practices. These areas often combine infrastructure corridors, spontaneous ecological processes, and fragmented ownership.

Brownfield

Previously developed land for industrial purposes that is unused or underused, affected by real or perceived contamination, and constrained by fragmented ownership and outdated infrastructure.

Ecological Succession – Spontaneous Regreening

Natural regeneration processes in abandoned or derelict postindustrial landscapes, where vegetation, habitats, and biodiversity re-emerge without formal intervention, creating new ecological structures and niches over time.

Multifunctional Land Use

A planning and design approach in which ecological, social, and economic functions are intentionally co-located, enabling land to support restoration, public use, and productive activities simultaneously.

Circular Economy / Circularity

Economic models based on reuse, repair, recycling, and reduced waste. In postindustrial settings: reuse of materials, buildings, infrastructure, and land.

Hybrid Governance

Collaboration between municipalities, private landowners, NGOs, civic groups, and informal actors to manage or transform a site.

Informal Practices

Unofficial or community-based uses such as gardening, path-making, or temporary workshops that maintain or activate neglected spaces.

Strategic Outlook

A long-term vision for how a site contributes to wider ecological, social, and economic systems.

Functional Intensity

The degree to which a place supports diverse, layered uses (e.g., production + housing + ecology + public space).

Leverage Points

Small-scale interventions that enable larger systemic change (e.g., opening a fence line to create public access).

Temporary Use

Short-term activation of vacant buildings or land (e.g., cultural events, markets, community storage, pop-ups) that precedes long-term redevelopment.

Ecological Infrastructure

Systems of soils, water bodies, vegetation, and habitats that support ecological resilience.

Just Transition

The principle that environmental transformation must support social equity, economic inclusion, and community well-being.

Environmental Burden

Pollution, soil contamination, groundwater issues, and ecological degradation resulting from past industrial activity.

Governance Gap

A mismatch between the complexity of industrial legacies and the institutional capacity and responsibility available to address them.

Adaptive Reuse

Transforming existing industrial or heritage buildings for new purposes while retaining their structural or cultural value.

Social Accessibility

The degree to which public spaces and services are usable, welcoming, and reachable by diverse groups (e.g., low-income communities, elderly people, children).

Strategic Buffer Zone

Postindustrial landscapes situated between the urban fabric and broader ecological systems, providing space for adaptation, water retention, or multifunctional land use.

Adaptive Regeneration
An East-Central European Framework for Postindustrial Transformation

This publication presents a comparative framework for understanding and regenerating postindustrial landscapes in the Visegrad region. Built collaboratively by partners in Hungary, Slovakia, Poland, and Czechia, it offers practical tools for ecological renewal, social inclusion, heritage reuse, and circular economic development.

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