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Railways Heritage and Reuse in Sicily (Italy): Forms, Criteria, and Questions

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Abstract: This research aims to investigate recent developments in the reuse and valorization of railway infrastructure in Sicily, with particular attention to the different ways former lines, stations, and related elements have been incorporated into public projects or local initiatives. The project takes as a starting point a review of the existing literature on railway heritage.
The investigation will situate the Sicilian case within the broader Italian context, including the 2017 national law on tourist railways. It will focus on the three Sicilian lines designated under that law – Agrigento-Porto Empedocle, Alcantara-Randazzo, and Noto-Pachino – maintaining their original fuction in a limited form. These examples are considered alongside other types of intervention involving disused railway infrastructure in the region. The aim is to outline a range of recent experiences and to observe how former railway lines and related elements have been reused in different ways.

Keywords: Railway heritage; peripheral regions; tourist railways, local development, heritage policies

INTRODUCTION

The growing attention to industrial and infrastructural heritage has brought railways back into the focus of academic research and public policy (Alfrey and Putnam, 1992; Smith, 2007). Disused railway lines, stations, and ancillary infrastructures are increasingly interpreted as cultural and territorial assets capable of supporting new forms of use, mobility, and local development (Graham, Ashworth and Tunbridge, 2000; Xie, 2015).

Across Europe, these transformations have taken diverse forms, reflecting different institutional settings, territorial structures, and policy priorities, as well as different national traditions in railway policy and state intervention (Giuntini, 2007). A wide range of approaches has emerged, including the reactivation of lines for tourist purposes, the conversion of railway corridors into greenways, and the integration of former infrastructures into broader strategies of sustainable mobility and territorial development.

Within this context, Italy represents a particularly significant case. The scale of its disused railway network and the coexistence of multiple, only partially coordinated approaches to reuse highlight the complexity of current processes of infrastructural transformation. The approval of Law no. 128/2017 on tourist railways marked an important step towards the institutional recognition of railway heritage, establishing a national framework for the preservation and reactivation of selected lines. Its implementation, however, remains partial, due to limited financial resources and the lack of comprehensive implementing provisions. At the same time, some local or regional interventions have developed in ways that are not always consistent with the objectives of the law, and in certain cases have led to the transformation or loss of railway infrastructures.

This paper focuses on Sicily, where the extent of disused railway infrastructure (with 1,370 km currently in operation and a further 420 km disused) and the diversity of recent interventions make it a particularly relevant case. It examines how different forms of reuse - tourist reactivation, conversion into greenways, localized reuse of buildings, and continued abandonment - reflect distinct approaches to the role of railway infrastructure.

Our main questions, therefore, are: how is railway heritage currently reused in the region? which actors and policy frameworks shape these processes? and what are the implications of these choices for the future of rail-based mobility? More specifically, it explores whether current practices tend to preserve and reintegrate railway infrastructures, or instead contribute to their transformation into alternative uses that may limit future reactivation.

1. RAILWAY HERITAGE AND REUSE: A BRIEF THEORETICAL FRAMEWORK

The role of railways in shaping modern territories is well established (Maggi, 2017; Knowles, Shaw and Docherty, 2009). As highlighted by

historical studies, railways profoundly transformed spatial relations, compressing distances and redefining economic and social interactions across territories (Giuntini, 2003). In the nineteenth and early twentieth centuries, rail infrastructures structured markets, settlements, and accessibility, acting as a backbone of territorial integration. Their subsequent decline reflects a major reorientation of mobility systems in the post-war period.

From the 1950s onwards, the expansion of motorization and the prioritization of road investment led to the progressive marginalization of rail, especially on secondary and regional lines. This shift is closely linked to the broader rise of mass motorization during the post-war economic boom, which reoriented mobility systems toward private vehicles and reduced the role of collective transport (Belloni and Maggi, 2022; Maggi, 2021). In Italy this took the form of systematic closures, often justified on economic grounds (Stacchini, 2025) ("deadwood policy"), with lasting territorial effects: reduced accessibility and increased marginality of peripheral areas. This shift from collective to individual mobility was not simply technological, but the outcome of policy choices that privileged roads over rail (Knowles, Shaw and Docherty, 2009). In Italy, this transformation was particularly marked, with the rapid diffusion of private vehicles reshaping mobility habits and reinforcing the marginalization of rail-based transport (Belloni and Maggi, 2022).

In recent decades, the question of what to do with disused railway lines has been addressed across different disciplinary fields, including transport studies, heritage studies, and spatial planning. These perspectives have framed railway infrastructures in different ways, leading to a variety of approaches to their reuse.

From a transport perspective, renewed attention to sustainability and intermodality has led to a reconsideration of rail as a structural component of integrated mobility systems (Banister, 2008; Peira et al., 2022). Recent debates emphasize the need to rethink mobility in terms of integration between modes, combining rail with other forms of transport such as cycling and walking (Belloni and Maggi, 2022). Within this framework, disused lines are often considered potential assets for reactivation or reintegration, although such processes are typically selective, partial, and constrained by technical, economic, and institutional factors.

At the same time, heritage studies have emphasized the cultural and historical value of railway infrastructures, highlighting the role of associations, enthusiasts, and local actors in processes of preservation and

valorisation, both for their material significance and for their contribution to landscape and collective memory (Alfrey and Putnam, 1992; Smith, 2007).

A further strand of literature, particularly within planning and tourism studies, has focused on the conversion of former railway corridors into greenways, stressing their environmental, recreational, and economic potential (Lumsdon and Page, 2004). These practices are increasingly framed within the broader paradigm of "mobilità dolce", which promotes low-impact forms of movement and territorial valorisation (Belloni and Maggi, 2022). These interventions are often presented as effective strategies for reusing linear infrastructures, especially in contexts where rail reactivation is considered unfeasible.

All these approaches reflect different and sometimes competing interpretations of railway reuse: reactivation as transport infrastructure, preservation as heritage, and transformation into alternative uses such as cycling routes.

This paper builds on this debate by focusing on the tension between integration and substitution, examining to what extent current practices tend to reintegrate railway infrastructures within mobility systems or, conversely, to transform them into uses that may limit future reactivation.

From a conceptual perspective, this tension can be interpreted as a conflict between two models of territorial development: one based on the preservation of infrastructural continuity and long-term transport potential, and another based on adaptive reuse oriented toward immediate local valorisation. While the latter may generate short-term benefits in terms of tourism and landscape enhancement, it may also entail irreversible transformations that preclude future railway reactivation, thus raising critical questions about path dependency and the long-term governance of transport infrastructures.

2. THE ITALIAN CONTEXT: POLICIES AND RAILWAY HERITAGE

The development of railway heritage policies in Italy is closely tied to the historical evolution of the national railway system, marked by strong regional imbalances and successive phases of expansion, restructuring, and decline (Maggi 2017; Merger 1998, Giuntini, 2007). While railways played a central role in national integration, they also reflected and reinforced long-standing territorial disparities.

During the twentieth century, and especially in the post-war period, the rationalization of the network led to the closure of numerous secondary and local lines, particularly in rural and peripheral areas. This process, often justified on economic grounds, has been widely criticized as a "taglio dei rami secchi" that contributed to territorial marginalization (Belloni and Maggi, 2022). Driven by the rise of road transport, changing mobility patterns, and increasing maintenance costs, this process produced a substantial stock of disused infrastructure, which now constitutes a key component of railway heritage.

For a long time, however, these infrastructures remained outside the scope of heritage policies. Railway artefacts were often perceived as obsolete and marginal, reflecting a broader delay in the recognition of industrial heritage in Italy (Maggi 2017). Only from the late twentieth century onwards did a growing awareness of industrial and infrastructural heritage lead to their reinterpretation as cultural and territorial resources (Alfrey and Putnam, 1992).

This shift is linked to a broader transformation in the understanding of infrastructure, from a functional and sectoral perspective to a more territorially oriented one (Dematteis, 2001; Magnaghi, 2001). Within this framework, disused railways are increasingly considered as components of integrated territorial systems, capable of linking mobility, landscape, and local development. At the same time, they have become central to the expansion of slow mobility networks, often in combination with cycling and walking routes.

A key role in this process has been played by Ferrovie dello Stato Italiane, also through the activities of Fondazione FS (established in 2013), which has contributed to the recovery and valorisation, particularly of historical rolling stock. At the same time, earlier initiatives promoted by local associations, enthusiasts, and territorial actors have played a significant role in preserving or maintaining interest in disused lines, often anticipating later institutional interventions.

The most significant policy development is Law no. 128/2017, which introduced a national framework for tourist railways. The law identifies selected lines of historical and landscape value to be preserved and partially reactivated, privileging a model of reuse based on functional continuity, later discussed within the broader debate on preserved railways, tourist reuse, and cycling conversions (Giuntini and Maggi, 2022).

From the 1980s onwards, the question of what to do with disused railway lines began to emerge more explicitly within the Italian context, in connection with broader European developments. Earlier historical experiences already highlighted the strong relationship between railways and tourism, as the train played a central role in the emergence of modern leisure travel since the nineteenth century (Giuntini, 2003). In countries such as the United Kingdom and Germany, early experiences of railway preservation - often promoted by associations, railway workers, and enthusiasts - had already demonstrated the potential for recovering historic rolling stock and maintaining or reactivating secondary lines for heritage and tourism purposes.

Similar dynamics gradually appeared in Italy, initially through bottom-up initiatives aimed at preserving local railway heritage or preventing the complete abandonment of lines, in a context in which the relationship between railways and tourism had long historical roots (Giuntini, 2003). Some emblematic cases include the reactivation of historic lines for tourist purposes, such as the Asciano–Monte Antico railway ("Treno Natura") in Tuscany, the Sulmona–Carpinone line ("Transiberiana d'Italia"), and the Sassari–Tempio–Palau line in Sardinia ("Trenino Verde").

Alongside these experiences, other trajectories developed. In several contexts, disused railway corridors were converted into greenways or cycling routes, as in the case of the former Spoleto–Norcia line, now reused as a linear path, as well as the Treviso–Ostiglia greenway and the former Val Brembana railway corridor in Lombardy. These interventions reflect a different approach, oriented towards recreational use and soft mobility rather than rail-based reactivation.

At the same time, a large share of the network - including both fully disused lines and abandoned variants of main routes - has remained in a state of neglect or underutilization.

3. THE SICILIAN RAILWAY NETWORK: HISTORICAL BACKGROUND

The development of the railway network in Sicily reflects a combination of national planning and region-specific dynamics, resulting in a system characterized by both standard-gauge and narrow-gauge lines. More broadly, railway expansion in Europe required massive capital investments and played a crucial role in shaping economic systems and territorial organization (Giuntini, 2003). From the late nineteenth century

onwards, the expansion of the network was shaped by economic priorities, geographical constraints, and institutional arrangements.

The main standard-gauge network developed as part of the national railway system, connecting the principal urban centres and linking the island to the broader Italian network through maritime connections. These lines were constructed primarily for economic reasons, in order to transport resources from the interior—particularly sulphur—towards coastal export points and the main ports. As shown by studies on Sicilian industrial development, the railway network was closely tied to the extractive economy and to international trade circuits, often supported by foreign capital and external demand (Giuffrida, 1962; Cancila, 1995). This logic is evident, for instance, in the development of the Palermo–Catania axis and in the connections between the mining districts of central Sicily and the southern ports of Licata and Gela. Competition between different routes and local interests to reach these resource areas contributed to a network whose structure reflected not only territorial needs, but also the priorities of extraction and export.

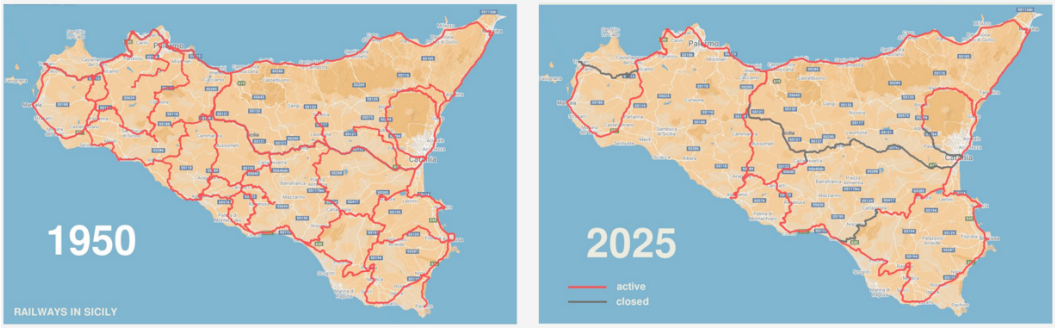
Alongside this system, a wide network of narrow-gauge lines was constructed between the late nineteenth and early twentieth centuries, primarily to serve mining and agricultural districts of inland areas. These lines were built slowly and often with significant delays, reflecting both financial constraints and the complexity of construction in a morphologically difficult territory (Maggi, 2017). In several cases, although infrastructure works were completed, lines were never inaugurated, as in the projected Leonforte–Nicosia or Palermo–Salaparuta connections. More generally, much of the network was realized too late to fully benefit from the peak of the sulphur industry. Moreover, the location of stations—frequently far from the main settlements they were meant to serve—limited their effectiveness, further weakening their role within local transport systems.

The contraction of the sulphur sector in the early twentieth century, together with broader transformations in the global economy, progressively reduced the strategic role of these lines (Giuffrida, 1962). This process was compounded, after the Second World War, by the rise of road transport and private mobility, which led to a reduction in traffic on Sicilian secondary lines. Narrow-gauge lines, in particular, were gradually dismantled between the 1950s and the 1980s, while other standard-gauge secondary lines were also closed or downgraded.

At the same time, infrastructure investments increasingly favoured road transport, reinforcing a shift in mobility patterns that further marginalized the railway system. This process was especially evident in inland areas, where the loss of rail services contributed to reduced accessibility and growing territorial disparities. In Sicily, these dynamics were further amplified by the structural fragility of the narrow-gauge network, which, despite its territorial reach, was more vulnerable to dismantling due to lower capacity, slower speeds, and weaker integration with national transport systems (Maggi, 2017).

4. CASE STUDIES: FORMS OF REUSE IN SICILY

The contemporary landscape of railway reuse in Sicily is characterized by the coexistence of different approaches, reflecting diverse institutional frameworks and territorial conditions. This section identifies four recurring forms of intervention: (1) tourist railways, (2) greenways and soft mobility projects, (3) adaptive reuse of railway buildings, and (4) persistence of abandonment. These categories correspond to different ways of interpreting the role of disused railway infrastructure.



Railway network in Sicily. Source: Attilio Pavone

4. 1. Tourist railways

A first form of reuse consists in the partial reactivation of lines for tourist purposes, maintaining—albeit in a limited and discontinuous way—their original railway function. In Sicily, three lines are included in the national framework established by Law no. 128/2017: Agrigento–Porto Empedocle, Alcantara–Randazzo, and Noto–Pachino.

The Agrigento–Porto Empedocle line represents the most advanced and consolidated case. It forms the terminal section of the Palermo–Agrigento axis, opened in stages from the 1860s (Palermo–Aragona/Caldare) and completed towards Agrigento in the 1870s, with the final extension from Girgenti (Agrigento) to Porto Empedocle realized in the early twentieth century to serve the harbour. The whole corridor was conceived within an export-oriented system, linking the sulphur basin of central-southern Sicily to the port of Porto Empedocle, with dedicated sidings and facilities for mineral traffic.

Traffic declined progressively in the second half of the twentieth century with the contraction of the sulphur sector and the shift to road transport. Regular services on the coastal branch were reduced and eventually suspended, leaving parts of the infrastructure in a state of disuse.

From the mid-2010s, heritage operations were reintroduced within the "Binari senza tempo" programme promoted by Fondazione FS. The reactivation relied on relatively limited civil works, the restoration of track and stations, and the use of historical rolling stock. A new halt serving the archaeological area of the Valley of the Temples further strengthened the integration between the railway and cultural landscapes.

Historical ALn668 near the Valley of the Temples. Source: Fondazione FS

The Noto–Pachino line was closed in 1986 and has only recently become the object of attempts at reactivation. Opened in 1935, it was

conceived within the reorganization of the south-eastern Sicilian network to support agricultural production, particularly citrus and other export-oriented crops. The line connected Noto to the coastal sector, improving the circulation of agricultural goods from the Hyblean plateau towards external markets.

Despite this rationale, traffic remained modest and the line never acquired a central role within the regional system. After the Second World War, competition from road transport and changes in logistics progressively undermined its viability. Services declined over the following decades, leading to final closure in 1986.

After closure, the infrastructure underwent a prolonged phase of abandonment, with significant deterioration of track, stations, and ancillary works. Its inclusion in Law no. 128/2017 marked a policy turning point, identifying the line for potential reactivation as a tourist railway. Subsequent programmes have envisaged track renewal, safety upgrading, and the recovery of station buildings.

Implementation, however, has proved complex and uneven. The route crosses environmentally sensitive areas, including the Vendicari reserve, requiring coordination among heritage, environmental, and transport authorities. In addition, the level of degradation implies substantial investment and long lead times. As a result, despite formal inclusion in the national framework, the line remains in a transitional condition, exemplifying the gap between policy designation and practical feasibility in the recovery of disused railways.

One of the last freight trains on Noto–Pachino line, 1985. Source: Roberto Cocchi.

The Alcantara–Randazzo line follows a trajectory closer to that of Noto–Pachino than to Agrigento. Although first proposed in the 1870s and later overshadowed by the construction of the Circumetnea, the line was opened only in 1959, it formed part of the inland Messina–Catania railway system, running along the Alcantara valley and connecting the Ionian coast with the northern Etna hinterland. Although later interpreted mainly in relation to local mobility and agricultural transport—especially citrus from the Etna foothills—the original late nineteenth-century projects were conceived within broader economic logics, aimed at integrating inland production areas (also the sulphus) with the Messina coastal railway network. However, the earlier development of the Circumetnea railway reduced its strategic role already in the initial phases.

In any case, traffic remained modest and the line never acquired a central role within the regional network. The continous expansion of road transport progressively reduced its use. Passenger services were gradually curtailed, and the line was ultimately closed to regular traffic in the 1990s.

Following closure, the infrastructure entered a prolonged phase of degradation, with increasing interruptions of the track and deterioration of stations and engineering works. Although included in Law no. 128/2017, the scale of the rehabilitation required has limited concrete progress towards reactivation. At the same time, local actors and associations have promoted different and partly competing proposals, ranging from tourist use to the reintroduction of regular services. In this case, reuse remains largely unresolved, reflecting both the high technical costs of reactivation and the absence of a clearly defined and shared strategy.

"S. Cataldo" Viaduct on the Alcantara-Randazzo line. Source: Sicilia in Progress

4. 2. Greenways and soft mobility

A second trajectory of reuse is represented by the conversion of disused railway corridors into greenways and cycling routes. In Sicily, this model has been promoted since the early 2000s within regional and national policies on "mobilità dolce", which explicitly identified abandoned railway alignments as privileged infrastructures due to their continuity, gentle gradients, and the presence of engineering works such as bridges and tunnels (Belloni and Maggi, 2022).

However, unlike other European contexts, the Sicilian experience is characterized by a selective and discontinuous implementation, largely dependent on local initiatives, funding opportunities, and the legal status of former railway assets. The result is a mosaic of partially realized projects, rather than a coherent regional network.

A first significant case is the reuse of sections of the former Dittaino–Caltagirone railway, particularly between San Michele di Ganzaria and the Salvatorello area. Developed in the early 2000s, this intervention transformed approximately 8–9 km of railway into a cycle-pedestrian path, reusing tunnels and viaducts of the original infrastructure. It represents one of the earliest concrete applications of the rail-trail model in Sicily. At the same time, its limited extension and subsequent maintenance issues highlight the fragility of isolated interventions lacking long-term governance and integration.

A second, more extensive example can be found in western Sicily along the former Palermo–Corleone–San Carlo narrow-gauge network. The so-called Godrano–Burgio greenway follows long stretches of the original alignment—over 70 km in total—preserving bridges, tunnels, and station buildings. This case demonstrates the strong spatial coherence of former railway corridors and their potential for structuring slow mobility systems. Nevertheless, the route remains only partially equipped, often shares space with agricultural roads, and lacks continuous services and signage, limiting its effectiveness as a functional mobility infrastructure.

Along the southern coast, the former Castelvetrano–Porto Empedocle line offers a different model, more explicitly oriented toward tourism. In this area, sections of the railway have been converted into cycling paths, such as the Porto Palo–Menfi route, later extended toward Sciacca. These interventions emphasize landscape valorisation, connecting coastal environments, archaeological sites such as Selinunte, and agricultural territories. However, the reuse remains discontinuous, and different

segments of the same line are subject to competing strategies, including abandonment, tourism-oriented cycling use, and, in some cases, proposals for railway reactivation. This coexistence reflects the absence of a unified planning framework and highlights the tension between alternative uses of the same infrastructure.

Further cases include projects developed on former or even incomplete railway infrastructures, such as the proposed greenway on the Salemi–Kaggera alignment in the Trapani area. Although never opened to traffic, this unfinished railway has been reinterpreted as a potential cycling and walking route, illustrating how railway heritage can be mobilized even in the absence of a fully operational past. At the same time, such projects confirm the opportunistic nature of many initiatives, often driven by local development agencies rather than by long-term transport strategies.

Overall, the Sicilian experience shows that greenways can produce positive outcomes in terms of landscape enhancement, tourism development, and the preservation of disused corridors, particularly where railway reactivation is no longer feasible. Yet, these interventions rarely form continuous networks and often remain dependent on fragmented governance arrangements.

From a broader perspective, the conversion of railway corridors into greenways raises critical issues in relation to the long-term management of infrastructure. While such projects may generate immediate local benefits, they can also entail the removal of tracks and the irreversible transformation of the corridor, thereby limiting future possibilities for railway reactivation. In this sense, greenways should not be understood as a neutral or default solution, but as one possible trajectory within a broader set of competing strategies, whose implications need to be carefully assessed in relation to mobility needs, heritage value, and territorial development.

Former Godrano – Burgio line (Palermo – Corleone). Source: FS

4. 3. Adaptive Reuse of railways building

A third form of reuse concerns the adaptive transformation of railway buildings, particularly stations, warehouses, and ancillary facilities. Unlike linear infrastructures, these elements are characterized by their punctual nature, which allows for localized and often incremental interventions. In Sicily, this form of reuse has developed in a fragmented but significant way, often driven by municipalities, local associations, and cultural initiatives rather than by coordinated transport policies.

One of the most emblematic cases is the former station of Villarosa, located in the central Sicilian mining district. Here, the railway station has been integrated into a broader project of industrial heritage valorisation, becoming part of the Museo della Civiltà Mineraria. The initiative originated at the local level and was promoted by individual efforts. The reuse preserves the memory of the railway's original function—transporting sulphur and workers—while reinterpreting the building as a cultural and educational space. This case is particularly relevant because it reconnects railway heritage with its original economic context, reinforcing its historical significance rather than detaching it from it.

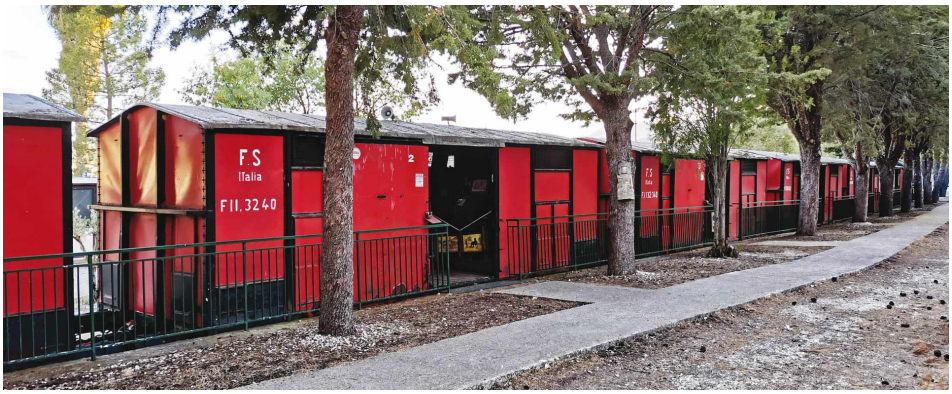
A different model can be observed in urban contexts, such as the former railway facilities of Palermo Sant'Erasmo. Originally part of the port railway system, the area has undergone processes of partial

transformation and reuse, including cultural and public functions. Although not always linear or fully completed, these interventions illustrate how railway buildings can be incorporated into wider processes of urban regeneration, contributing to the reconfiguration of waterfronts and post-industrial spaces.

In smaller centres, numerous station buildings along disused lines—such as those on the former Castelvetrano–Porto Empedocle or Palermo–Corleone networks—have been reused for local functions, including tourist information points, social centres, restaurants, or private residences. In places such as Menfi, Sciacca, and parts of the Belice valley, former stations have been integrated into local tourism strategies, often in connection with nearby greenways or coastal itineraries. Other cases highlight more experimental or temporary forms of reuse. Along several disused lines, station buildings have been intermittently used for cultural events, exhibitions, or community initiatives, often promoted by local associations. However, these interventions are typically isolated and vary widely in terms of quality, maintenance, and long-term sustainability, and are often only loosely connected to the original railway function, resulting in forms of reuse that, while socially useful, tend to weaken the historical and infrastructural continuity of the railway system.

Overall, the adaptive reuse of railway buildings in Sicily represents a form of selective and localized transformation, which preserves individual elements of the railway system while often disconnecting them from their original infrastructural function. From a theoretical perspective, this process can be interpreted as a shift from network-based infrastructure to point-based heritage, where the continuity of the railway system is replaced by a constellation of isolated but socially meaningful sites.

This form of reuse can generate important cultural and economic benefits at the local level, particularly in terms of heritage preservation and community engagement. At the same time, it reflects a partial and fragmented approach, which, unlike railway reactivation, does not contribute to the reconstruction of mobility systems, but rather to the reinterpretation of their material remains.



Railways Museum of Villarosa (Enna). Source: Fondazione FS

4. 4. Abandonment and non-reuse

Despite the growing attention to railway heritage and the emergence of different forms of reuse, a substantial portion of the Sicilian railway network remains in a condition of abandonment or non-reuse. This category is not residual but structurally significant, and is essential for understanding both the limits of current policies and the long-term trajectories of infrastructure on the island.

Abandonment takes multiple forms. In some cases, it concerns entire lines that have been dismantled or left without maintenance after closure, particularly within the former narrow-gauge network. In others, it involves partial disuse, where sections of lines remain physically intact but are no longer operational, often for decades. A further and increasingly relevant form concerns railway variants: new alignments built to replace older routes, which are then decommissioned without a clear strategy for reuse.

A first illustrative case is provided by the former narrow-gauge network of central and western Sicily, including large portions of the Palermo–Corleone–San Carlo and Castelvetrano–Porto Empedocle systems. While some sections have been partially reused as greenways or local facilities, the majority of the infrastructure—track beds, stations, bridges—remains abandoned, often in advanced states of decay. These corridors persist as latent infrastructures, neither fully removed nor actively reintegrated, and are frequently subject to informal uses, encroachments, or gradual degradation.

A second and particularly significant dimension concerns the abandonment of former alignments following the construction of new

railway variants. This process is clearly visible in the ongoing modernization of the Catania–Messina axis, where new sections designed to increase speed and capacity progressively replace older coastal or inland alignments. In several cases, the fate of the dismissed sections remains uncertain: while some may be considered for reuse, it is often unclear whether they will be preserved for local public transport, converted to alternative uses, or simply abandoned. This ambiguity reflects a broader lack of integration between infrastructure upgrading policies and strategies for the management of disused assets.

A comparable situation can be observed in relation to the Circumetnea railway, particularly in urban areas such as Santa Maria di Licodia, Adrano, and Biancavilla. Here, the construction of new urban variants and underground sections has led to the decommissioning of former surface alignments. These still lie entirely abandoned, creating visible discontinuities in the urban fabric and effectively constituting infrastructural scars within inhabited areas. They represents both a missed opportunity and a source of spatial fragmentation.

More generally, abandonment in Sicily is closely linked to temporal mismatches between infrastructure policies. The construction of new lines or variants tends to be driven by national investment priorities and long-term planning frameworks, while the reuse of dismissed infrastructures is often left to local actors, with limited resources and uncertain competences. As a result, long time gaps frequently emerge between closure and reuse, during which infrastructures deteriorate and their potential for future reactivation or transformation is progressively reduced.

From a territorial perspective, the geography of abandonment is highly uneven. Interventions—whether railway reactivation, greenways, or building reuse—tend to concentrate on specific corridors with higher visibility, tourism potential, or institutional support. In contrast, large portions of the network, especially in inland and peripheral areas, remain excluded from any form of intervention. This selective process reinforces existing spatial inequalities and contributes to the marginalization of already fragile territories.

From an analytical standpoint, abandonment should not be interpreted merely as the absence of reuse, but as a distinct condition of infrastructure. Disused railways in Sicily often persist in a state of "suspended potential", where their material presence continues to structure landscapes and settlement patterns, even in the absence of active functions. This condition highlights the long-term inertia of infrastructure systems and the difficulty

of reorienting them once their original economic and functional rationale has declined.

Abandoned Santa Maria di Licodia station, formerly part of the Circumetnea Railway surface alignment. Source: Giulio Pappa

5. COMPARATIVE ANALYSIS: FORMS, CRITERIA, AND TENSIONS

The cases analysed reveal that railway reuse in Sicily is structured by a fundamental divergence in how infrastructure is conceptualised: either as a system to be maintained and potentially reactivated, or as a spatial resource to be reinterpreted through new functions. This distinction, widely discussed in transport and planning literature, becomes particularly evident when observed through the empirical configurations outlined above.

From this perspective, railway reactivation does not simply represent a successful case, but a specific configuration in which infrastructural continuity is preserved. Here, heritage and mobility are not opposed but partially aligned, even if within a limited and tourism-oriented framework. However, such alignment is contingent and rare, depending on favourable technical conditions, institutional capacity, and political prioritization.

Conversely, greenways exemplify a different rationality, in which the value of infrastructure is detached from its original function and redefined

in terms of landscape, accessibility, and recreation. In line with existing literature, the Sicilian cases confirm that this transformation is not neutral: it reconfigures the corridor in ways that may preclude future railway use. The fragmentation observed in cases such as Dittaino–Caltagirone or Castelvetrano–Porto Empedocle further suggests that, in peripheral contexts, this model rarely produces integrated mobility systems, instead generating discontinuous and locally bounded interventions.

A further shift is evident in the adaptive reuse of buildings, where the infrastructural dimension is almost entirely dissolved. In cases such as Villarosa, the railway survives as a cultural reference. This transition from network to site reflects a broader tendency identified in heritage and industrial archaeology studies, where infrastructures are often preserved selectively through their most visible or symbolically significant elements, while their original systemic and functional logic is progressively lost (Graham, Ashworth and Tunbridge, 2000; Alfrey and Putnam, 1992).

The condition of abandonment, finally, should be interpreted not as an absence of action, but as a distinct outcome of these competing logics. This "suspended" state reflects the disconnection between investment cycles (typically national and long-term) and reuse processes (often local, uncertain, and delayed).

All these configurations do not form a linear progression from abandonment to reuse. What emerges is not a transition toward a shared model, but a fragmented landscape in which each intervention redefines the role of infrastructure according to different temporal, institutional, and territorial logics.

CONCLUSIONS

This paper has argued that the reuse of disused railway infrastructures in Sicily cannot be understood as a linear transition from abandonment to regeneration, but rather as the outcome of competing ways of conceiving infrastructure itself. The empirical analysis shows that what is at stake is not simply how these assets are reused, but whether they are treated as components of a transport system or reinterpreted as spatial resources detached from their original function.

The comparison between the different cases highlights that continuity of use, as in railway reactivation, remains limited and highly selective. In most situations, reuse implies a transformation—whether through greenways or building adaptation—that redefines infrastructure in non-

transport terms. While these practices generate visible and often valuable local outcomes, they also contribute to the progressive erosion of the railway system as a network.

At the same time, the persistence of widespread abandonment demonstrates that large portions of the infrastructure fall outside any strategy of reuse. This condition, rather than being residual, reflects structural misalignments between investment priorities, governance scales, and territorial needs, particularly in peripheral areas.

In this perspective, the Sicilian case points to the need for a more explicit integration between transport planning and heritage policies. Without such alignment, reuse risks remaining fragmented and path-dependent, reinforcing existing inequalities and limiting the potential role of rail infrastructure within sustainable mobility systems.

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