

APPROACHES TO THE REVITALIZATION OF DEGRADED INDUSTRIAL ZONES IN CITIES OF UKRAINE

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Abstract. *The subject of the study* is organizational and economic relations arising in the process of revitalization of degraded industrial zones in Ukraine. The cities face the problems of the degradation of territories caused by the decline of facilities of the local economy, low living standards and low level of residents' social capital, social exclusion, migration of economically active population, unsatisfactory environmental conditions, etc. *Methodology.* The study used a set of general scientific and specialized methods that are based on interdisciplinary and systematic approaches. The research envisaged a semantic analysis of the content of the key regulatory and legal acts in the field of the state regional policy of Ukraine, as well as urban strategic planning. In the course of the study the following methods were also used: selective observation, analogy, comparative analysis, expert assessments to identify the features of the implementation of projects on the revitalization of degraded industrial zones in the cities of Ukraine; abstract-logical, grouping, generalization to reveal the main characteristics of revitalization of degraded industrial zones in Ukraine. *Purpose of the study* is to identify strategic priorities, focus areas and targets of the policy on the revitalization of degraded industrial zones on the basis of analysis of the existing projects in the cities of Ukraine. *Results of the study.* By relying on the analysis of the development strategies of the Ukrainian cities of regional significance, the following revitalization directions are established: degraded industrial zones; parks, recreation zones and other public spaces; objects of culture and historical and architectural heritage. The prerequisites, goals and tasks of revitalizing inactive industrial zones are highlighted. The article analyzes the implementation of specific projects aimed at: development of creative industries in reconstructed post-industrial premises, arrangement of coworking, support of entrepreneurial and social initiatives (Ivano-Frankivsk, Lviv, Kharkiv, Odesa, Kyiv); creation of unique platforms for various cultural events, communication of representatives of the creative sector and quality recreation (Lviv, Kharkiv, Kherson, Zaporizhzhia, Kyiv); formation of an environment for restaurant activity, wholesale and retail trade (Kyiv, Kherson); construction of innovative infrastructure, providing support for high-tech industries (Kyiv, Dnipro). *Conclusion.* Based on the generalization of experience, the characteristic features of the revitalization of degraded industrial zones in Ukraine are outlined. It is noted that projects on city revitalization focuses on giving new features to territories and facilities and emphasizing their uniqueness; most projects on the revitalization of degraded industrial zones in the cities of Ukraine are grounded on creative ideas, the embodiment of which often requires large investment.

Key words: city revitalization, degraded industrial zone, sustainable development, cities of Ukraine.

JEL Classification: O18, O31, R11

1. Introduction

Ukrainian cities are faced with the problems of degradation of territories caused by the decline of facilities of the local economy, low living standards and low level of residents' social capital, social exclusion, migration of economically active population,

unsatisfactory environmental conditions, etc. These territories need city revitalization policy as a complex of targeted measures to overcome crisis phenomena (spatial, economic, social, cultural, environmental) and create prerequisites for their sustainable development. In the leading countries of the world, this policy

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showed its effectiveness as a strong instrument for the revival of abandoned territories. The concept of urban revitalization has become the key driver of cities' sustainable development in the world (Akotia, Opoku, 2018).

In Ukrainian cities, the policy of the revitalization of degraded territories is at the stage of origin. The main focus of the policy is on projects for revitalizing former industrial zones. Projects for the revitalization of city blocks, streets, squares, parks, embankments, housing facilities and culture objects are less common. Revitalization requires a change in the traditional approach to the restoration of urban economy elements – previously it was based exclusively on repair and construction works (Horbliuk and Dehtiarova, 2021). Formation of public spaces, changing the functions and purpose of facilities, introduction of innovations in territorial development are important tasks of city authorities, businesses, and the public.

The purpose of the article is to identify strategic priorities, focus areas and targets of the policy of the revitalization of degraded industrial zones following the analysis of the existing projects in the cities of Ukraine. While the cities of the EU and the United States started the revitalization of abandoned industrial facilities in the middle of the last century, Ukraine has mastered this city policy instrument recently. A detailed analysis of the implemented projects for the revitalization of degraded industrial zones is important both in view of the need to disseminate better practices in this field, and for the theoretical generalization and substantiation of the methodological principles of policy-making, relying on the available experience.

2. Strategic priorities of city revitalization in Ukraine

The State Strategy for Regional Development of Ukraine for the period of 2021-2027 (Resolution of the Cabinet of Ministers ..., 2020) indicates that certain types of territories require special attention from the state and the use of special mechanisms and tools to stimulate their progress. These include: agglomerations; large, middle-sized and small cities; monofunctional cities, rural areas in unfavorable conditions; mountainous areas of the Ukrainian Carpathians; macroregion "Azov-Black Sea"; zones of impact of international transport corridors; border regions; border territories in adverse conditions; temporarily occupied territories of Ukraine; natural conservation areas and objects. The Strategy declares a territorially-oriented development policy based on stimulating the use of territories' own potential, providing support to individual territories characterized by special challenges of socio-economic development, high historical and cultural potential, and environmental protection needs.

Strategic priorities of regional development are established in accordance with the Sustainable Development Goals of Ukraine for the period up to 2030, approved by the Decree of the President of Ukraine (2019). The regional development strategies of Ukraine (Minregion, 2020) are dominated by the Sustainable Development Goal 11, which envisages ensuring the openness, safety, life-sustaining and environmental stability of cities and other settlements. To achieve the Goal 11, projects were developed for: restoration of infrastructure (most particularly highways); improving the quality and availability of public services, including in the field of education, medicine, social protection; protection and reproduction of natural resources. A sustainable development of cities and communities will be facilitated by regional measures for territories' revitalization, specifically: the revival of the economy of territories in the northern part of Kyiv region affected by the Chernobyl catastrophe; support for small monofunctional cities and revitalization of territories contaminated with explosive objects (Donetsk region); revitalization (restoration) of the central part of the historical cities of Ternopil region; revival of the historical and architectural heritage of Volyn region; revitalization of castles of Cherkasy region; re-arrangement and development of public spaces in Kyiv; protection, restoration and preservation of cultural heritage objects (Zhytomyr, Kherson, Chernivtsi, Chernihiv region), etc.

A wider range of priorities of degraded territories revitalization is defined at the local level. Based on the analysis of the development strategies of the Ukrainian cities of regional significance (without regard to the regional significance cities of the temporarily occupied territory of the Autonomous Republic of Crimea and part of the temporarily occupied territories in Donetsk and Luhansk regions), the following revitalization directions are established:

- degraded industrial zones (Vinnytsia, Dnipro, Ivano-Frankivsk, Korosten, Melitopol, Rivne);
- city centers (Vinnytsia, Nizhyn, Odesa, Podilsk, Poltava, Truskavets);
- parks, recreation zones and other public spaces (Vinnytsia, Iziium, Melitopol, Mykolaiv, Novodnistrovsk, Podilsk, Truskavets);
- objects of culture and historical and architectural heritage (Bucha, Volodymyr-Volynskyi, Poltava, Ternopil).

Prerequisites for the emergence of a large number of industrial zones in Ukrainian cities was industrial growth in the time of the Soviet Union, with the allocation of territories for industrial purposes mostly for free. Accordingly, when developing those territories, little care was taken of the effectiveness of decisions or polyfunctionality of development (Tiupka, 2021). After Ukraine had gained its independence,

as a result of a number of economic transformations, a significant part of the industrial territories degraded due to the stopping of economic activity. Therefore, the revitalization of abandoned industrial zones becomes increasingly important for the development of cities in Ukraine. Table 1 shows the strategic goals and tasks of revitalizing former industrial zones, which are outlined in the selected development strategies of cities of regional significance.

The comprehensive approach to the revitalization of old industrial zones is demonstrated by Dnipro. A phenomenon widespread in the South East of Ukraine is the presence of degraded territories of "semi-abandoned giants": hectares of broken dusty roads, abandoned shops, and a total atmosphere of desertedness. Thus, many large enterprises have actually shut down, existing as legal entities under their own inertia, whereas others house individual small production units. The main industrial facilities have fallen into disrepair, with little but facades left of the shops. Of all the developed urban lands, lands used for industry make up 3650 hectares (every fifth square meter of the developed urban lands in Dnipro is industrial) (Dnipro City Council, 2020). The Strategy 2030 defines the task – to introduce a program of revitalization of the old industrial zones of Dnipro, which would aim to revitalize 515.5 hectares (45 territories) in the space of 10 years by creating industrial parks, innovation quarters with an all-inclusive ecosystem of innovations, creative industry quarters, etc. What is meant here is planning a polycentric functional city structure, not limited to the impact on industrial zones, but seeking to multiply positive effects throughout the territory.

Community Development Strategy 2030 – Vinnytsia 3.0 also focuses on creating conditions for the development of the territorial community's problem areas. The city has a heterogeneous spatial structure comprising various types of land use: on the one hand, open natural territories (forests, river valleys, agricultural land), on the other hand – developed territories of various purpose and intensity of use (Vinnytsia City Council, 2021). These factors, caused by historically contingent processes, allowed the Strategy to identify urban areas that are relatively homogeneous and require different measures of public intervention for their revival. In the course of revitalization of degraded industrial zones, outlined in the map-scheme of the landscape-planning city structure, it is planned to provide new life to each territory, re-thinking its role in the city's livelihoods.

3. Implementation of projects for the revitalization of degraded industrial zones in Ukrainian cities

The transformation of former industrial territories into creative spaces is a modern trend of cities' revitalization (Roberts et al., 2016). Developing new features of facilities and creating the relevant public spaces, it is important to preserve the architectural legacy of the city. The most famous project of revitalizing industrial zones in Ukraine is "Promprylad.Renovation" in Ivano-Frankivsk. It is realized by impact investment, i.e., alongside with financial commitment of businesses, it aims to have a measurable societal impact on the region. The revitalization target is the territory of a plant, which in the Soviet period specialized on manufacturing

Table 1

Goals and tasks of the revitalization of industrial zones in the selected development strategies of Ukrainian cities

#	City	Strategy	Goals and tasks
1.	Vinnytsia	Community Development Strategy 2030 – Vinnytsia 3.0 (https://bit.ly/3qw464H)	Revitalization of abandoned territories of former industrial enterprises.
2.	Dnipro	Strategy Dnipro – 2030 (https://bit.ly/3ydGQew)	Revitalization of old industrial zones. Development of program for revitalization of old industrial zones (45 territories, 515.5 ha)
3.	Ivano-Frankivsk	The Ivano-Frankivsk City Development Strategy until 2028 (https://bit.ly/3A3k7Ug)	Devising of a new format of educational and creative platform on the basis of "Promprylad" factory, which is to bring together cultural, educational and practical business-elements.
4.	Korosten	Strategic plan of Korosten development until 2025 (https://bit.ly/3w0Y9OC)	Revitalization of selected old industrial zones with participation of owners of enterprises.
5.	Melitopol	Melitopol City Development Strategy 2030 (https://bit.ly/3jk5nKP)	Revitalization of public spaces by way of creating thematic, art, club public places; adaptation of depressed territories and unclaimed industrial zones.
6.	Rivne	Rivne Development Strategy for the period up to 2040 (https://bit.ly/3A9q1Du)	Revitalization of abandoned industrial zones and their priority use as sites for new businesses.

Source: prepared by the author

instruments and consumer goods, produced automatic devices and industrial rotary-type gas meters. However, from the early 1990's, the plant experienced a prolonged crisis, part of its territory being filled with residential real estate (Shabanin, 2020). The project "Promprylad.Renovation" has transformed the former plant into a modern space for realization of commercial and social initiatives aimed at developing a new economy, urbanism, contemporary art and informal education in the region. At present within the walls of the plant, there are offices and a coworking space, a children's center, a dance school, a bar zone, a conference room, a robotics center, a craft workshop, a barber school, a multimedia laboratory, an urbanism center, an exhibition hall, and more.

There are successful cases of revitalizing abandoned industrial facilities in many Ukrainian cities. In particular, in Lviv, such facilities are replaced with creative industry developments:

– "ReZavod", where the abandoned area of the radio-electronic medical equipment plant (REMA) in the territory of the old industrial zone in Pidzamche became the space for engineering, design and art experiments; the locations of the plant are used by manufacturers of brand clothes, ceramists, tattoo designers, urbanists, artists, a theater, a bakery, and sound recording studios (Mykolaenko, 2019);

– "FESTrepublic" as an alternative location for leisure near the central part of the city, created in the former premises of "Galychsklo" factory; the project concept is aimed at building public spaces for exhibitions, cultural events, various actions and recreation grounds for visitors with children (Lisna, 2016);

– "Jam Factory Art Center", which provides for the opening of an interdisciplinary center for contemporary art in the revitalized space of the former fruit paste factory, which through its exhibition, educational and research activities will reflect the actual processes in the Ukrainian and international art and culture, and will open opportunities for a public dialogue;

– "Lem Station" as a creativity and innovation hub in place of a former tram depot, which promotes implementation of entrepreneurial, social and cultural initiatives of the city's residents; on the basis of the depot, a startup incubator, a coworking space, a maker-space, an art gallery, an event hall, a children's development center, a food court and other spaces for training and leisure are created (Tverd, 2017).

In Kharkiv, revitalization projects of this kind include the art factory "Mekhanika. Insha Zemlia" and "Fabrika.space". The creative space of the art factory of 25 thousand square meters, located in the former shops of a steam locomotive works, is a unique platform for municipal and international events. This space is intended for bringing together

creative and talented people of various professions: musicians, artists, designers, photographers, theater professionals, sculptors, artists, athletes. In the territory of the art factory, there are offices of creative entrepreneurs, a food court, a park zone, various studios and centers; here, cultural events, concerts, festivals, parties, etc. are held regularly.

For more than half a century, a four-storey building of a Kharkiv factory for sorting and storing elite agricultural crops "Soyuzsortnasinnievoch" was in extremely bad condition, without heating and communications. In 2015, the former factory was transformed into a modern center "Fabrika.space". On the first floor, there is a restaurant, with a courtyard open in summer. On the second and third floors, various events are held (on the average, the factory hosts monthly over 90 events: conferences, strategic sessions, trainings, corporate events). On the fourth floor, there is a coworking space, where about a hundred people, mostly IT-freelancers, work daily (Mykolaenko, 2019).

The destroyed shops of a ship repair facility in Odesa have become a site for construction of the training and manufacturing center "Synii Krab". On the first floor, a hall, an engineering workshop, a library and a storage for personal belongings are located; on the second, a cafe, a sound recording studio, a stained-glass studio and a pottery are opened; on the third, there is a multifunctional event hall, a nightclub, a lecture hall, a coworking space and several thematic creative studios (Avdieiev, 2020). In this way, spaces for creative workshops, exhibitions, events were created, allowing for a closer interaction of the city's cultural community.

During 2016–2017, one of the shops of Kherson combine harvester factory turned into a public space "Urban CAD". Presently, this is a creative art site that hosts a variety of festivals, thematic events, concerts, charitable actions, conferences, theatrical productions, exhibitions, master classes, etc. The objectives of this revitalization project are: to create an art platform "Turbina"; to adapt the industrial building according to municipal requests; to get the public, scientists, and authorities involved in the development of creative industries; to actively engage artists and provide them with opportunities to realize their creative ideas in the city.

The building of the old mill of Herman Nibur in Zaporizhzhia, built in 1895, impresses with its architecture. There, local art experts opened an art space "LOFT Mlyn", where locations for a variety of creative activities were gathered under the same roof. Among them, there is a gallery, a showroom (space for holding conferences, performances, lectures, etc.), a film club, an art workshop, a photo studio, and a zone for open communication (Mori, 2021).

The capital of Ukraine is not standing by idle in the matter of implementing the projects of former industrial zones revitalization. For instance, "Art Zavod Platforma" is the largest creative cluster in Ukraine, located in the Left bank of Kyiv. The space is situated in the territory of the former Darnytskyi silk plant. This ecosystem brings together business, festivals, coworking, art, IT-sphere, fashion, education and other industries of creative economy.

"Port Creative Hub" is a multifunctional space in Podil area designed for modern cultural initiatives: exhibitions, lectures, master classes, art studios, cinema shows, public events, etc. The revitalization project was implemented on the basis of an industrial building, which used to be a warehouse of the Ukrainian river port in the Soviet period. Nowadays, the second floor of this building serves as a platform for the development, representation and interaction of the creative community of Kyiv.

Another place of this kind is the art center "Closer", which is located in the premises of a former ribbon factory, one of the oldest light industry enterprises in Ukraine. In addition to the space for exhibitions, conducting master classes, films and concerts, coworking and communication with creative people, there is a night club where parties involving popular European DJs are arranged at the weekends.

In Podil area, there is also a cultural cluster "IZONE" located in the premises of the former ship-repair yard. The revitalized premises are turned into multifunctional zones: a gallery, educational halls, an exhibition space, a ground for performances and concerts, creative workshops, cafes, a shop and a terrace. The project objectives include association and promotion of the natural growth of conscious ecological businesses, including by offering modern coworking and location for entrepreneurship, and the access to organic raw materials through a network of organic farming partners.

The projects for revitalizing former industrial zones have different focuses. As a result of revitalization, the shops of the Arsenal plant (in the past, one of the largest Ukrainian manufacturers in the field of instrument engineering), "Kyiv Food Market" was created as the first foodhall in Kyiv. Here, more than 20 best restaurants in the capital are assembled in one location. On the second floor there is a separate zone with a show kitchen, where it is planned to open a culinary school and give master classes. Also, there are ideas to arrange coworking, create a trading complex, a business center and other public spaces in another area of the plant (Tsarenko, 2020).

In Kherson, the wholesale market "Bazar" – an agricultural trading hub – has been opened in the empty buildings of a former combine harvester plant. In its covered areas, local agrarians can sell their products without intermediaries or any obstacles;

for buyers, there is a parking place. For checking the quality of products, the market will run a laboratory of the State Service of Ukraine on Food Safety and Consumer Protection. The project of the plant revitalization also envisages the opening of a hostel for sellers who have not had enough time to sell their goods, and an open-type customs warehouse for large manufacturing exporters (Avdieiev, 2020).

"UNIT.City", located in the territory of the Kyiv motorcycle plant, belongs to more extensive projects of degraded areas revitalization. However, nothing but a brick chimney reminds of this territory's industrial heritage. This is the first innovative park in Ukraine, where an ecosystem and infrastructure for developing business in high technologies and creative industries are created. For this purpose, a community of successful entrepreneurs is formed, regular events and thematic meetings are conducted, quality tools for cooperation and strengthening business are developed. There are 4 business campuses and a coworking space, 4 labs, 8 accelerators, and 3 investment funds operating in the park. In 2020, "UNIT.City" includes 108 resident companies, 70% of which have launched joint projects with other residents (UNIT.CITY has entered..., 2020).

In the old industrial territory of Dnipro, an industrial park "Innovation Forpost" is created, which is included in the Register of industrial parks of Ukraine. The territory of the industrial park will be divided into 35 sites, of which 21 sites are intended for the development of industry, and 12 – for innovation and education (Dnipro Development Agency, 2018). The industrial park is designed to comprise offices and R&D centers, an exhibition complex with an innovative museum of science, business incubators, educational campuses, apartments and a nursery school, a hotel, and green zones.

Grouping of the reviewed projects for revitalization of the degraded territories of Ukrainian cities by directions is presented in Table 2.

Thus, the projects of the revitalization of former industrial facilities are becoming commonplace in Ukraine. In their territories, various types of activities are developing successfully, in particular creative industries, entrepreneurial and social initiatives. These are good places for various events, coworking, communications and high-quality leisure activities. Practice shows that the Ukrainian cities which managed to establish coordinated work in this field, have achieved significant results, and their implemented projects are worthy examples to follow in Ukraine and abroad.

4. Conclusions

The analysis of the implementation of projects for revitalization of degraded industrial zones

Table 2

Directions of revitalization of degraded industrial zones in the cities of Ukraine

#	Directions of implemented changes	Revitalization projects
1.	Development of creative industries in reconstructed premises, arrangement of coworking spaces, support for entrepreneurial and social initiatives.	"Promrylad.Renovation" (Ivano-Frankivsk); "ReZavod", hub "Lem's Station" (Lviv); Center "Fabrika.space" (Kharkiv); Center "Synii krab" (Odesa); cluster "IZONE" (Kyiv)
2.	Creation of unique platforms for various cultural events, communication of representatives of the creative sector and high-quality recreation.	Location "!FESTrepublic", "Jam Factory Art Center" (Lviv); art factory "Mekhanika. Insha Zemlia" (Kharkiv); art-space "Urban CAD" (Kherson); art-space "LOFT Mlyn" (Zaporizhzhia); "Art Zavod Platforma", "Port Creative Hub", art-center "Closer" (Kyiv)
3.	Formation of the environment for restaurant activities, wholesale and retail trade	"Kyiv Food Market" (Kyiv), wholesale market "Bazar" (Kherson)
4.	Construction of innovation infrastructure, support for high-tech industries	Innovation Park "UNIT.City" (Kyiv), project of industrial park "Innovation Forpost" (Dnipro)

Source: prepared by the author

in Ukrainian cities allows making the following conclusions:

- 1) based on the specific character of crisis phenomena that led to the degradation of territories, as well as considering the local capacities for their revival, projects of city revitalization are aimed at the restoration of nonfunctional industrial zones, among other issues, giving new features to territories and facilities and emphasizing their uniqueness; the initiators of such changes are mainly representatives of private and public sectors;
- 2) the designed purposes of revitalization projects encompass: development of creative industries in reconstructed premises, arrangement of coworking, support for entrepreneurial and social initiatives; creation of unique platforms for various cultural events, communication of representatives of the creative sector and high-quality recreation; formation

of an environment for restaurant activities, wholesale and retail trade; construction of innovative infrastructure, support for high-tech industries, etc.;

3) regardless of the direction of revitalization, the relevant projects include measures of integrated impact, that is, they aim to introduce spatial and infrastructure transformations that would protect the environment and contribute to the social activity of the inhabitants and guests of the city, and in the long run – stimulate business activity in the degraded territory itself, or in the entire city;

4) most projects for revitalization of degraded industrial zones in the cities of Ukraine are based on creative ideas, the embodiment of which often requires large investment. However, eventually they have a significant marketing impact, since revitalized public spaces improve the attractiveness of the city for local inhabitants, tourists, investors and other stakeholders.

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