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TRENDS IN CHANGES OF SETTLEMENT PATTERN
IN THE BORDER ZONE OF THE REPUBLIC OF ARMENIA

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Trends in changes of settlement patterns and population dynamics in the border zone of the Republic of Armenia (RA) are shaped by border security and socio-economic issues. The border zone accounts for 24.0% of the territory of the RA. This zone contains 21.3% of all settlements and accommodates 7.7% of the country's population.

The article examines the specific features of settlement patterns in the RA border zone, recent transformation trends over the past five years, and state programs aimed at the development and support of border settlements. A map of the RA border settlements has been compiled.

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Introduction. The development of border zones is a key objective of territorial, socio-economic and security policy. The development of these vulnerable zones is directly linked to strengthening national security and ensuring sustainable economic growth. For this reason, they are areas of special attention and targeted state policy.

Border zones may represent spaces of opportunity for development and cross-border cooperation, or, conversely, zones of significant constraints, military risks, and political tension, depending on the nature of interstate relations and economic linkages. Approximately 83% of Armenia's borders are closed, while the Armenian–Azerbaijani border, which accounts for about 63% of the total border length, remains uncertain in terms of security. In several segments, delimitation and demarcation have not been completed.

In the context of ongoing geopolitical changes in the region and Armenia's "Crossroads of Peace" policy, shifts in border status are possible, potentially

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generating new trends in the development of border areas, with associated challenges and opportunities.

Materials and Methods. Given the significance of the study area, a number of works have addressed settlement patterns, demographic and migration processes, as well as socio-economic challenges and development opportunities. Particular attention should be given to the PhD dissertations by Potosyan V.A. [1] and Vardanyan A.V. [2], as well as studies by Ghambaryan G.G. et al. [3], Potosyan V.A. and Potosyan A.H. [4], and others. As a priority area of targeted public policy, the border zone remains under continuous monitoring and control and receives state support.

To identify the specific features of settlement patterns and population dynamics in the Republic of Armenia (RA) border zone over the past five years, the study applies spatial, temporal and integrated approaches, along with statistical, cartographic and comparative research methods.

Results and Discussion. The paper examines the transformation of settlement patterns in the RA border zone primarily in the context of existential and military security, and subsequently in terms of social equity and balanced territorial development.

Following independence in 1991, issues of border security became increasingly salient, a trend that intensified after the 44-day War in 2020. The problem of border security in the RA is heterogeneous in nature. At present, the Armenian–Azerbaijani border constitutes the most critical segment. From a security perspective, the exclusion of permanent population presence along unsafe borderlines would be preferable. In Armenia, however, this principle is not observed. Many settlements, historically established long before the formation of modern borders, are now located directly within the border zone or in immediate proximity to the state border.

From the standpoint of military confrontation, border settlements can be located in the following zones:

- active conflict zone, where vital infrastructure is located in immediate proximity to the line of contact with border;
- rear zone, where vital infrastructure lies within the strike range of adversarial military capabilities;
- relatively safe zone, where infrastructure is situated at a considerable distance, beyond the effective strike range [2].

Security considerations play a significant role in shaping settlement pattern transformation, population dynamics and socio-economic development trends in Armenia’s border zone; however, they are not the sole determining factor. These processes are also influenced by broader patterns of national socio-economic development.

The analysis of population dynamics over the past decades indicates the emergence of clearly differentiated regions: areas of population growth (concentration) and economic development on the one hand, and areas of population decline (depopulation) accompanied by economic stagnation and contraction on the other. In the central regions of the RA, particularly in the Yerevan agglomeration and the Gyumri area, the Ararat Valley, the Kotayk Plateau, and the Western and Southern

parts of the Lake Sevan basin, population concentration and positive economic trends are observed. In contrast, peripheral, border, mountainous and high-mountainous areas, as well as regions outside the influence zones of settlement pattern system centers, such as the Ashotsk Plateau, the Lori, Tavush, Vayots Dzor, Syunik Marzes and the Eastern part of the Lake Sevan Basin, exhibit pronounced depopulation and economic decline. The polarization of Armenia’s territorial development has intensified and continues to deepen.

By the so-called “Brandt Line” in Armenia clearly can be delineated zones of central development from zones of peripheral stagnation (Fig. 1). The stagnation zone comprises vulnerable settlements lacking competitive advantages and possessing insufficient potential for sustainable functioning, let alone self-development. As shown on the map, the majority of border settlements are located within this low-competitiveness peripheral zone.

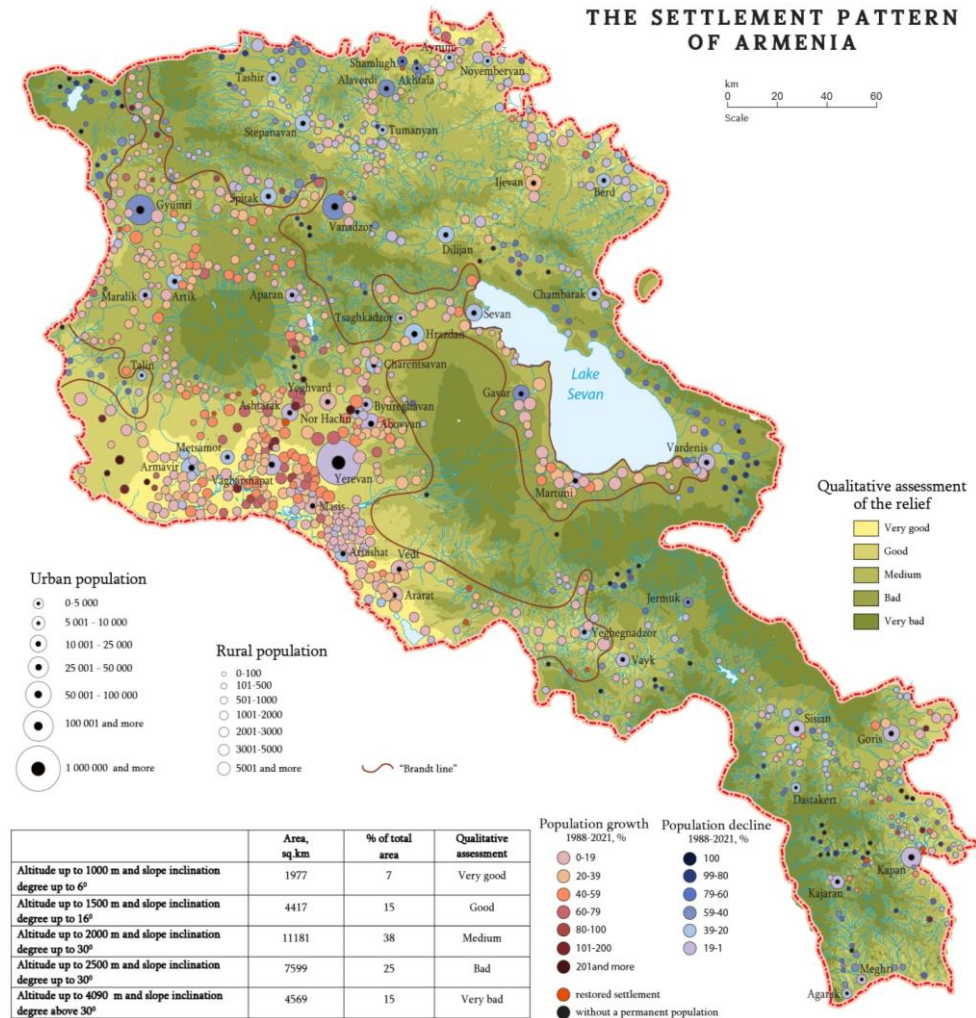


Fig. 1. Map of settlement pattern of Armenia. Transformation trends of the settlement pattern in 1988–2021 [5].

Before analyzing the specific features of settlement patterns in border zones, it is necessary to review how border settlements and zones are defined in legislation. Which settlements are classified as “border” and on what principles are they delineated?

In practice, no law provides a precise definition of the term “*border settlement*”; instead, official documents present lists of such settlements in the Republic of Armenia.

According to Government Decree № 246 (21.04.1999) “On the Conceptual Program for Priority Issues of Border and High-Mountain Settlements of the Republic of Armenia” [6], the following criteria were applied in approving the list of border settlements:

- location within the border zone adjacent to the state border with the Republic of Azerbaijan;
- location within the border strip of the RA;
- inclusion in the lists approved by Government decrees in 1993–1995.

During that period, 200 settlements met these criteria. The law on the state border of the RA (20.11.2001) [7] defines:

The *border zone* is a territory extending 5 km inland from the state border.

The *border strip* is a territory extending 1 km inland from the state border, which is a part of the border zone.

Under this law, the width of both the border zone and the border strip is subject to determination and modification by Government decision.

The initial list of border settlements was approved by Government Decree № 306 “On Approving the Temporary List of Remote and Border Settlements of the Republic of Armenia” (16.06.1993) [8]. This list was subsequently expanded by Decrees № 239 (26.04.1995) and № 243 (28.04.1995) [8].

These decrees were later repealed, and a revised list was approved under Government Decree №713 (17.11.1998) “On Approving the List of Border Communities of the Republic of Armenia” [8], which was further amended in 2003, 2004, 2005, 2007, and 2015 [8].

At present, the list includes 212 settlements (213, including Artsvashen), of which 203 (204, including Artsvashen) are rural settlements and 9 are urban.

The total length of Armenia’s state border is 1 431 km. The border strip covers 1 431 km², while the border zone extends over 7 155 km², accounting for approximately 24% of the country’s total territory [9].

The analysis indicates that not all settlements included in the official list conform to the criterion of location within the border zone or border strip. Some settlements are situated outside these zones, but are nonetheless included in the list (e.g., Nor Astghaber, Getishen, Geghi, Vocheti, Geghavank, Kitsk, Qarut, Kard, Arajadzor, etc.). Conversely, certain settlements located within these zones are not included in the list (e.g., the village of Azat in Gegharkunik Marz). This inconsistency indicates the need to revise the official list of border settlements (Fig. 2).

Border settlements are unevenly distributed across marzes (Tab. 1 and Fig. 3).

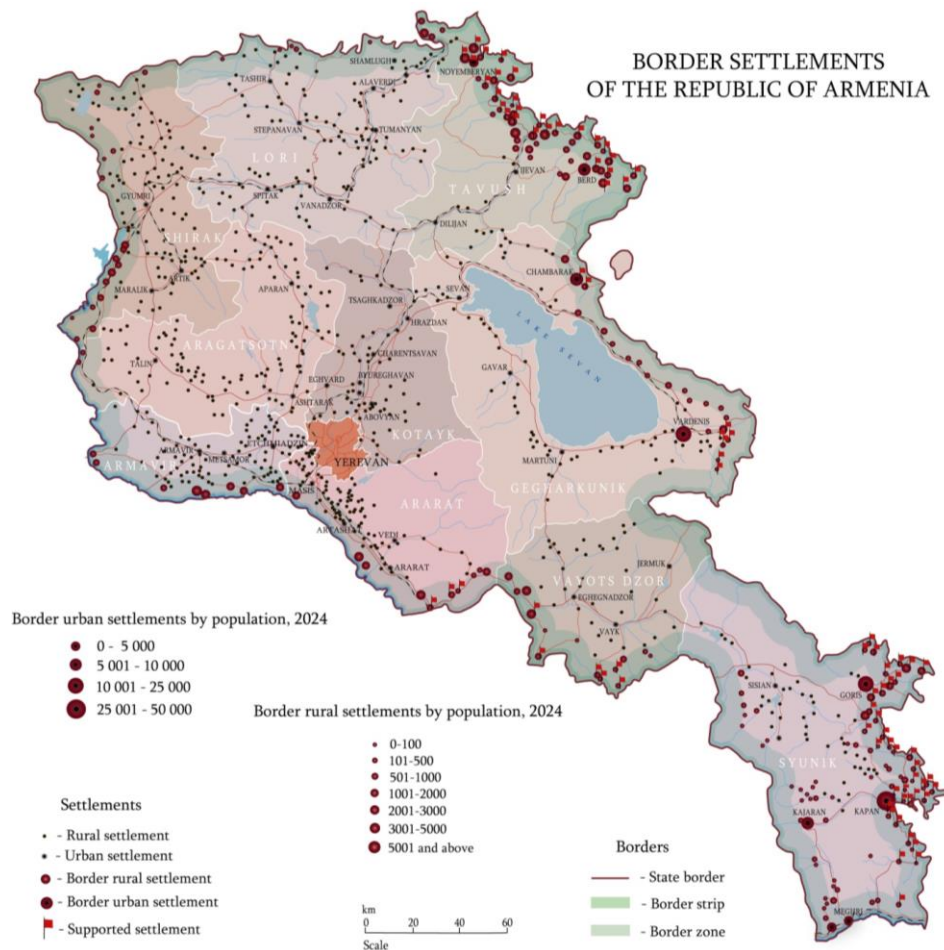


Fig. 2. Map of border settlements of the Republic of Armenia [5].

Table 1

Number of border settlements by marzes [8]

Regions	Total settlements	Rural	Urban
Aragatsotn	2	2	0
Ararat*	10	10	0
Aramavir	8	8	0
Gegharkunik**	23	21	2
Lori	5	5	0
Shirak	19	19	0
Syunik	85	80	5
Vayots Dzor	14	14	0
Tavush	47	45	2
RA	213	204	9

Note: * – including the village of Tigranashen, which, according to the Decree “On Approving the List of Border Communities of the Republic of Armenia,” is administratively part of the village of Paruyr Sevak, but is recorded as a separate settlement in official statistical publications.

** – including the Artsvashen Village.

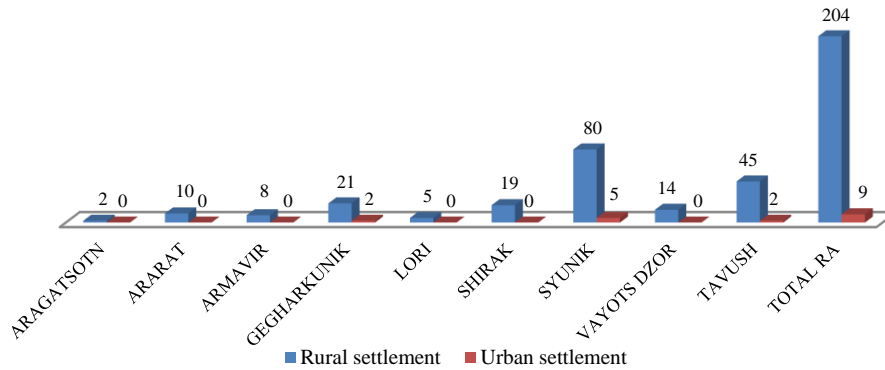


Fig. 3. Number of border settlements by marzes [8].

A high concentration of border settlements is observed in the Syunik Marz (85), Tavush Marz (47), and Gegharkunik Marz (22/23, including Artsvashen). Population of border settlements also varies significantly across marzes (Tab. 2, and Figs. 4–6).

The analysis of the above figures indicates that 224 329 people reside in border settlements, accounting for 7.7% of Armenia’s total population. Of these, 129 928 people (58%) live in rural settlements, while 94 401 (42%) reside in urban settlements (2024).

Table 2

Population of border settlements by marzes [10, 11]

Regions	2020		2024		2020	2024	Differences 2020–2024
	rural	urban	rural	urban	rural	urban	
Aragatsotn	322	0	400	0	322	400	78
Ararat	11031	0	11477	0	11031	11477	446
Armavir	12639	0	12635	0	12639	12635	–4
Gegharkunik	9007	18013	8458	18133	27020	26591	–429
Lori	766	0	724	0	766	724	–42
Shirak	9021	0	8428	0	9021	8428	–593
Syunik	23219	78140	23460	64732	101359	88192	–13167
Vayots Dzor	8389	0	8478	0	8389	8478	89
Tavush	55983	11992	55868	11536	67975	67404	–571
RA	130377	108145	129928	94401	238522	224329	–14193

In terms of total population of border settlements, Syunik Marz ranks first with 88 192 inhabitants, followed by Tavush Marz with 67 404 and Gegharkunik Marz with 26 591.

Rural population of border settlements is most concentrated in Tavush Marz (55 868), Syunik Marz (23 460) and Armavir Marz (12 635). Urban population is most prominent in Syunik Marz (64 732), followed by Gegharkunik Marz (18 133) and Tavush Marz (11 536).

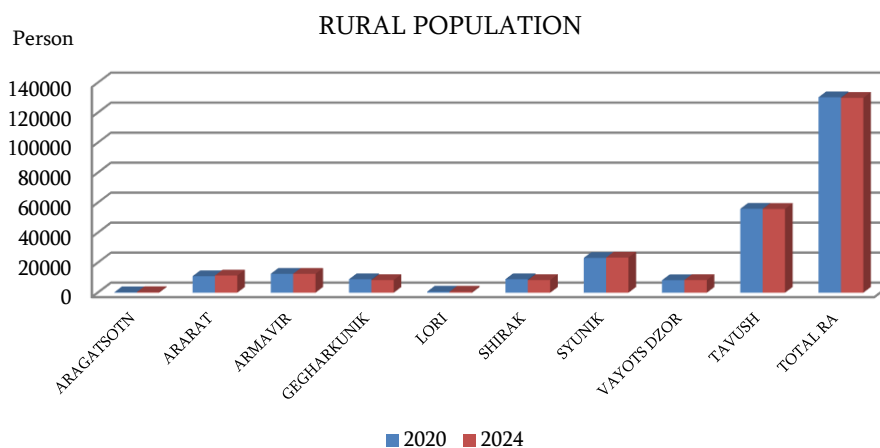


Fig. 4. Population dynamics of rural border settlements [10, 11].

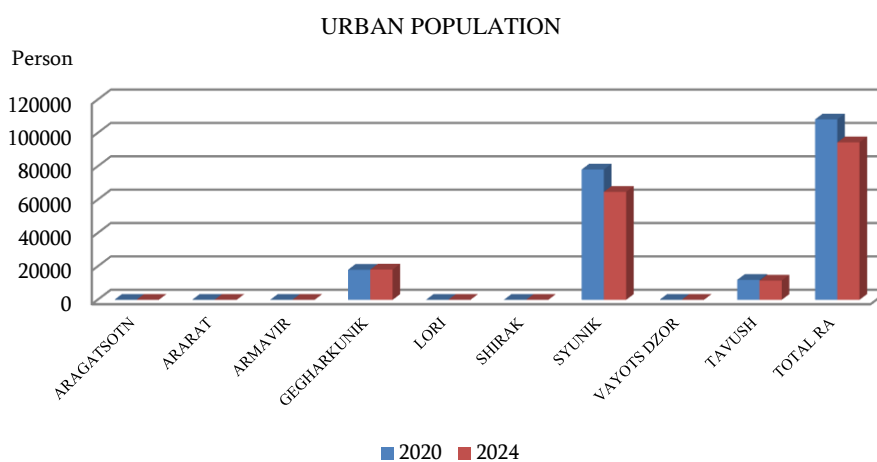


Fig. 5. Population dynamics of border urban settlements [10, 11].

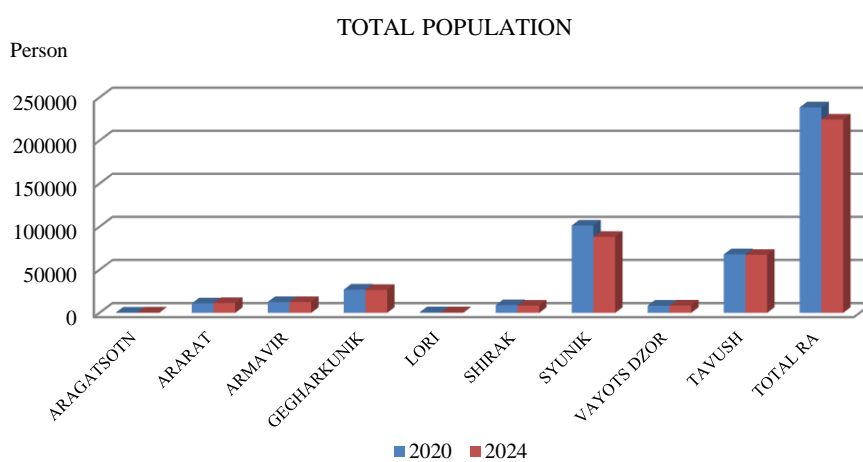


Fig. 6. Population dynamics of border settlements [10, 11].

A notable pattern emerges when border settlements are classified by population size groups (Tab. 3 and Fig. 7).

Table 3

Border settlements by population size groups, 2024 [11]

Regions	No permanent population	1–100	101–500	501–1000	1001–2000	2001–3000	3001–5000	5000 and above	Total number of border settlements
Aragatsotn	0	0	2	0	0	0	0	0	2
Ararat	0	0	3	2	3	2	0	0	10
Armavir	0	0	0	3	3	1	1	0	8
Gegharkunik	0	2	12	4	2	0	0	0	20
Lori	0	4	1	0	0	0	0	0	5
Shirak	2	3	6	6	2	0	0	0	19
Syunik	11	24	32	8	3	2	0	0	80
Vayots Dzor	1	2	4	4	2	1	0	0	14
Tavush	0	0	12	14	11	4	4	0	45
RA	14	35	72	41	26	10	5	0	203

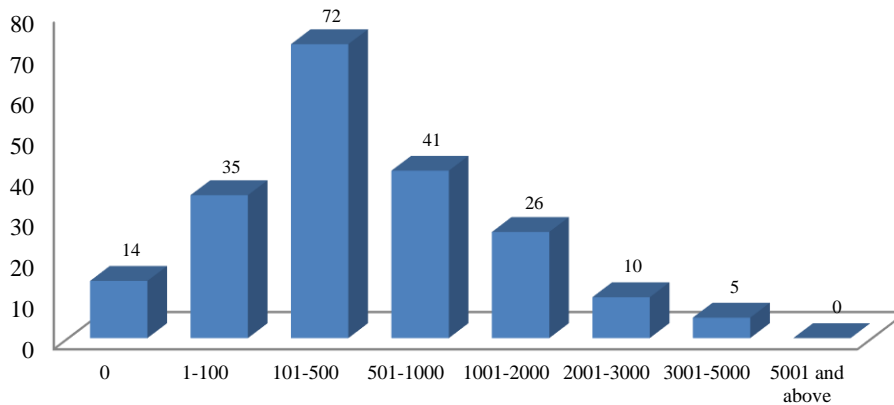


Fig. 7. Number of border rural settlements by population size groups, 2024 [11].

The analysis shows that a substantial share of border settlements falls into small population size groups: 72 settlements have 101–500 inhabitants, 41 settlements have 501–1000 inhabitants, 35 settlements have 1–100 inhabitants and 14 settlements have no permanent population. Settlements with fewer than 100 inhabitants account for 23% of all border settlements and, in essence, lack competitive advantages, i.e., the capacity for socio-economic self-development; they are weak and highly vulnerable.

Between 2020 and 2024 three additional villages in Syunik Marz (Tanahat, Khordzor and Geghavank) were added to the category of settlements without permanent population. The situation in several other settlements is also of concern: Ajabaj (6 inhabitants), Kamkhut (11), Darik (12), Gudemnis (19), Tsgkhuni (20) and Vahravar (22) (Fig. 8).

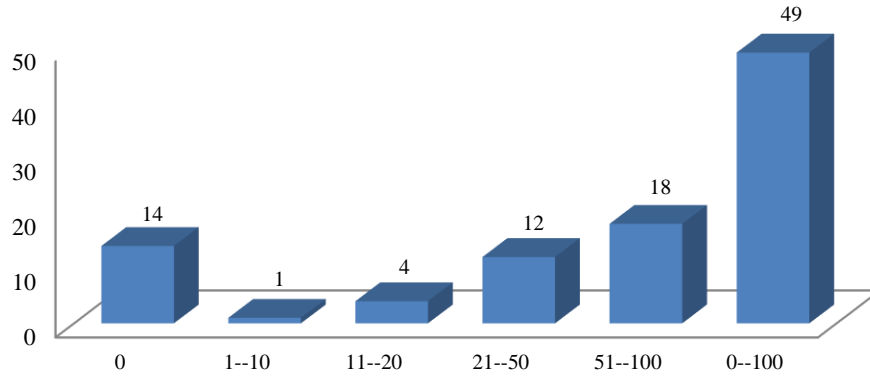


Fig. 8. Number of border rural settlements by population size groups (0–100), 2024 [11].

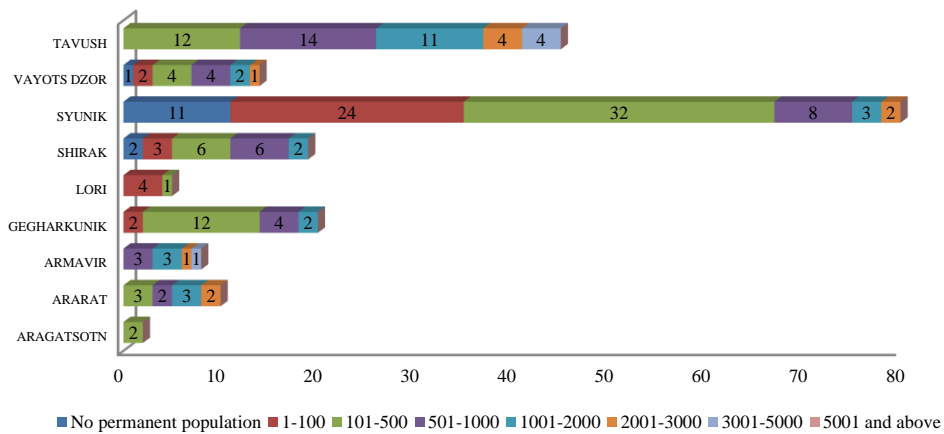


Fig. 9. Number of border rural settlements by population size groups by marzes, 2024 [11].

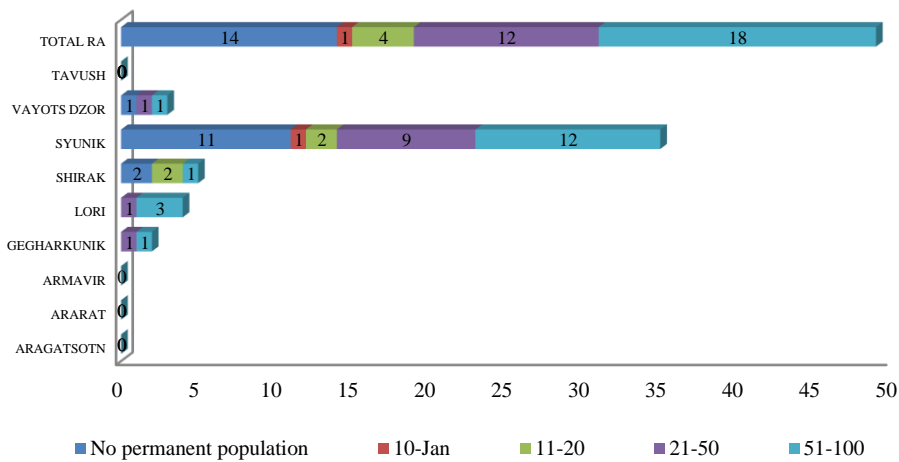


Fig. 10. Number of border rural settlements by population size groups (0–100) by marzes, 2024 [11].

Border settlements are also unevenly distributed across population size groups. In Syunik Marz, out of 80 rural border settlements, 11 have no permanent population and in 24 settlements the population does not exceed 100 inhabitants; together, these account for 44% of the marz’s border rural settlements (Figs. 9, 10). In contrast, in Tavush Marz 42% of border settlements belong to the group with populations exceeding 1000 inhabitants.

Since 2020, significant geopolitical developments have had a substantial impact on migration processes. Following the 44-days war 2020 and the loss of territory of Artsakh, a large-scale resettlement of Armenians from Artsakh to the Republic of Armenia took place. As in other parts of the country, the relocation of Artsakh Armenians to border settlements led to a certain increase in population. However, persistent socio-economic challenges and border security issues in the RA continue to drive out-migration and the depopulation of settlements.

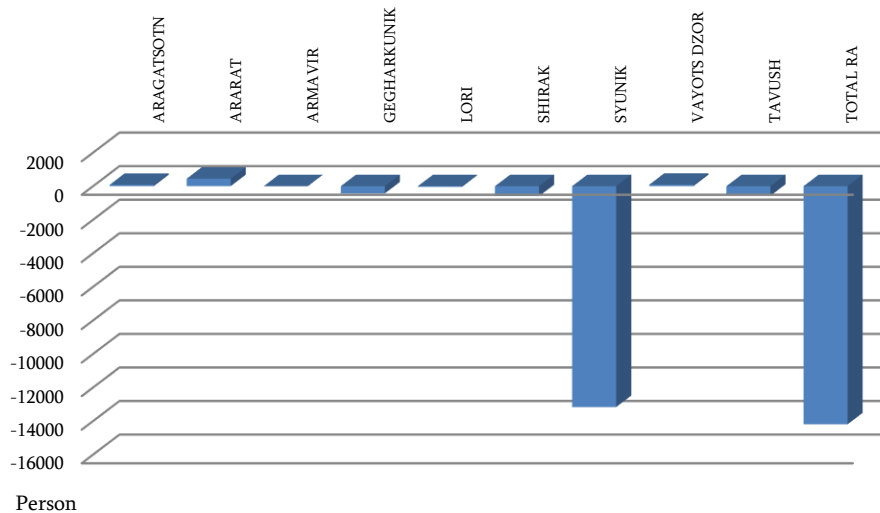


Fig. 11. Population changes trends in border settlements, 2020–2024 [10, 11].

Although the study period coincides with the resettlement of Artsakh Armenians, and the resulting positive migration trends in some border settlements partially offset (or mask) the overall negative dynamics, the depopulation of border settlements remains an existential issue. Without substantial state intervention, this problem is likely to intensify in the near future.

As shown in Figs. 11 and 12, between 2020 and 2024 the population of border settlements declined by 14 193 people, including a decrease of 449 in rural areas and 13 744 in urban areas (Fig. 13). The situation is spatially uneven. The most critical case is observed in Syunik Marz, where the population decreased by 13 167 people. It is followed, in terms of the rate of decline, by Shirak Marz, then Tavush Marz and Gegharkunik Marz.

The most significant population decline was recorded in the cities of Kapan and Goris, amounting to approximately 12 000 people in total. Persistent trends of population decline and the depopulation of many settlements indicate the severity of the situation and the need for sustained state support.

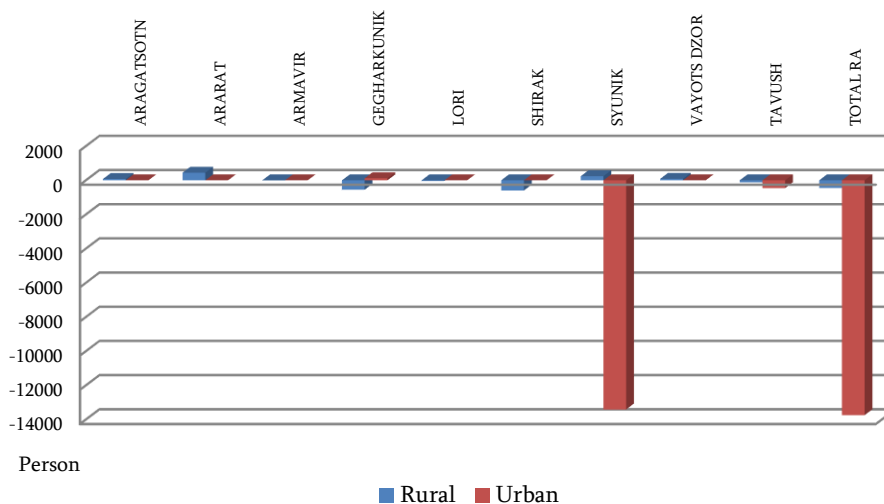


Fig. 12. Population changes trends in border rural and urban settlements, 2020–2024 [10, 11].

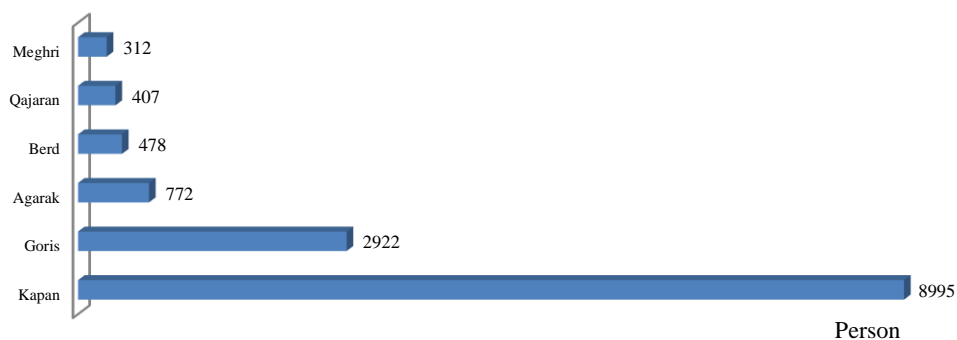


Fig. 13. Border settlements with the largest population decline in 2020–2024 [10, 11].

To promote the development of border settlements and improve living standards, targeted (needs-based) social support and economic development programs are implemented:

- Partial compensation of utility costs, including natural gas, electricity and irrigation water supply [12].
- Coverage the taxes of property and agricultural land located in conflict-affected areas and not in use [12].
- Compensation for material damage to residential buildings and agriculture resulting from military or terrorist actions by the Republic of Azerbaijan [12].
- Provision of equivalent housing within the same community in cases of housing loss due to military or terrorist actions by the Republic of Azerbaijan [12].
- Provision of medical assistance to citizens of Armenia injured by landmine explosions in border and adjacent areas or because of military or terrorist actions by the Republic of Azerbaijan [12].
- Subsidization of agricultural loans with a zero interest rate for farms in the border zone [13].

➤ A state support program for the construction or reconstruction of “smart” livestock facilities and their technological upgrading [14]. Provision of preferential loans to entrepreneurs in border settlements.

➤ The social program “Your Home in a Border Settlement”, which provides state support in the form of subsidized loans for residential construction [15].

➤ The allocation of subsidies to border communities under the Law “On Financial Equalization” [16].

➤ The provision of extensive benefits through subvention programs targeting border, high-mountain and remote settlements. In certain sectors, the share of state co-financing reaches up to 70% [17].

Conclusion. The study leads to the following conclusions:

- Trends in population dynamics in border settlements are driven not only by border security factors but also by socio-economic conditions.

- There is no clear legal definition of border settlements, and the current list does not fully comply with the stated selection criteria.

- The official list includes 212 (213, including Artsvashen) settlements, accounting for 21.3% of all settlements in Armenia, including 204 rural and 9 urban settlements.

- The highest number of border settlements is concentrated in Syunik (85), Tavush (47), and Gegharkunik (22 or 23, including Artsvashen) Marzes.

- A total of 224 329 people reside in border settlements, representing 7.7% of the population of the Republic of Armenia.

- In terms of total population, the leading regions are Syunik (88 192), Tavush (67 404), and Gegharkunik (26 591) Marzes.

- A significant share of border settlements falls into the following population size groups: 72 settlements with 101–500 inhabitants, 41 settlements with 501–1000 inhabitants and 49 settlements with 0–100 inhabitants, of which 14 have no permanent population.

- The situation in Syunik Marz is particularly critical: out of 80 rural border settlements, 11 have no permanent population and 24 have fewer than 100 inhabitants. Together, these account for 44% of the marz’s border rural settlements.

- Over the period 2020–2024, the population of border settlements decreased by 14 193 people.

- The largest population decline in border settlements during 2020–2024 was recorded in Syunik Marz, amounting to 13 167 people.

- The highest population increase in border settlements over the same period was observed in Ararat Marz, with an increase of 446 people.

- During the study period, the population of border rural settlements decreased by 449 people. The overall decline was primarily driven by urban population loss, which amounted to 13 744 people.

- In 2020–2024, the most significant population decreases were recorded in Kapan (8 995) and Goris (2 922).

- Border settlements receive certain benefits and state support; social assistance programs are implemented.

Recommendation.

- It is necessary to provide a clear legal definition of border settlements, refine the selection criteria, and revise the officially approved lists.

- Border settlements require the development of defense infrastructure, the establishment of conditions for military resilience and the maximization of settlement security.
 - With direct state involvement, measures should be implemented to improve living standards, modernize infrastructure and create economic competitive advantages.
 - Special emphasis should be placed on the implementation of economic development programs in border regions with active state participation.
 - Policies for the support and development of border settlements should be carried out in accordance with typological and spatial approaches. Particular emphasis should be placed on the implementation of differentiated territorial policies.

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REFERENCES

1. Potosyan V.A. *Settlement Pattern Development Problems in RA Borderlands, Mountainous and High Mountainous Areas* (2019), 22 (in Armenian).
https://www.geology.am/files/Vahan_Potosyan_seghmagir.pdf
2. Vardanyan A.A. *Military-resisting-characteristics of Settlements from Border Zone in RA* (2024), 22 (in Armenian).
3. Ghambaryan G.G., Potosyan A.H., et al. Settlement Pattern Features in Mountainous Countries (on the Example of the Republic of Armenia). *Population and Economics* 8 (2024), 130–155 (in English and Russian).
<https://doi.org/10.3897/popecon.8.e118381>
4. Potosyan V.A., Potosyan A.H. Historical-Geographical Analysis of Settlement Pattern Formation in RA Frontier, Mountainous and High Mountainous Areas. *Proc. of the YSU C. Geol. and Geogr. Sci.* 53 (2019), 201–208 (in Armenian).
<https://doi.org/10.46991/PYSU:C/2019.53.3.201>
5. Ghambaryan G., Mkhitarian V., Ayriyants A.. The Problem of Territorial Polarization in Armenia. *Bollettino della Società Geografica Italiana serie. Italy, University of Florence, Firenze University Press* 14 (2023), 5–15.
<https://doi.org/10.36253/bsgi-7586>
6. Government Decree № 246 (21.04.1999) “On the Conceptual Program for Priority Issues of Border and High-mountain Settlements of the Republic of Armenia” (in Armenian).
<https://www.arlis.am/hy/acts/7272>
7. The Law of the Republic of Armenia “On the State Border” (20.11.2001) (in Armenian).
<https://www.arlis.am/hy/acts/52327>
8. Government Decree № 713 (17.11.1998) “On Approving the List of Border Communities of the Republic of Armenia” (in Armenian).
<https://www.irtek.am/views/act.aspx?aid=5701>
9. The Law of the Republic of Armenia “On the Approval of the Comprehensive Development Program for the Border Regions of the Republic of Armenia” (20.05.2002) (in Armenian).
<https://www.irtek.am/views/act.aspx?tid=152776&sc=p90#p90>
10. Marzes of the Republic of Armenia and Yerevan City in Figures (2020) (in Armenian).
<https://www.armstat.am/am/?nid=82&id=2324>
11. Marzes of the Republic of Armenia and Yerevan City in Figures (2024) (in Armenian).
<https://www.armstat.am/am/?nid=82&id=2324>
12. The Law of the Republic of Armenia “On Social Support for Border Communities” (01.12.2014, ՀՕ-203-Ն) (in Armenian).
<https://www.arlis.am/hy/acts/118578>
13. Government Decree № 184-I (07.03.2019) “On the Approval of the Program for Subsidizing Loans Provided in the Agricultural Sector” (in Armenian).
<https://www.arlis.am/hy/acts/147379>

14. Annex to the Government Decree № 419-Լ (10.04.2025) “State Support Program for the Construction or Reconstruction of “smart” Livestock Facilities and Their Technological Upgrading, 2025–2028” (in Armenian).
15. Government Decree № 842-Լ (09.06.2022) “On the Approval of the State Support Program for Improving Housing Affordability in Border and Selected Settlements, 2022–2027” (in Armenian). <https://www.irtek.am/views/act.aspx?aid=116463>
16. The Law of the Republic of Armenia “On Financial Equalization” (20.10.2016) (in Armenian). <https://www.irtek.am/views/act.aspx?aid=87200>
17. Government Decree № 1708-Ն (16.11.2006) “On the Approval of the Procedure for Granting Subventions to Communities from the State Budget of the Republic of Armenia” (in Armenian). <https://www.irtek.am/views/act.aspx?aid=36992>

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ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅԱՆ ՍԱՀՄԱՆԱՄԵՐՁ ԳՈՏՈՒ
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Ա մ փ ո փ ու մ

Հայաստանի Հանրապետության սահմանամերձ գոտու տարաբնակեցման փոխակերպման ու բնակչության թվի շարժընթացի միտումները սահմանային անվտանգության և սոցիալ-տնտեսական հիմնախնդիրների արդյունք են: Սահմանային գոտին կազմում է ՀՀ տարածքի 24.0%-ը: Այս գոտում է գտնվում ՀՀ բնակավայրերի 21,3%-ը, ապրում՝ երկրի բնակչության 7,7%-ը:

Հոդվածում դիտարկվում են ՀՀ սահմանամերձ գոտու տարաբնակեցման առանձնահատկությունները, վերջին հինգ տարում փոխակերպման միտումները, սահմանամերձ բնակավայրերի զարգացմանն ու աջակցությանը ուղղված ծրագրերի շրջանակը: Հոդվածի շրջանակում կազմվել է ՀՀ սահմանամերձ բնակավայրերի քարտեզ:

Г. Г. ГАМБАРЯН, В. Г. МХИТАРЯН

ТЕНДЕНЦИИ ИЗМЕНЕНИЯ РАССЕЛЕНИЯ
В ПРИГРАНИЧНОЙ ЗОНЕ РЕПУБЛИКИ АРМЕНИЯ

Резюме

Тенденции изменения расселения и динамики численности населения в приграничной зоне Республики Армения обусловлены вопросами приграничной безопасности и социально-экономическими проблемами. Приграничная зона составляет 24.0% территории РА. В этой зоне расположены 21.3% населенных пунктов и проживает 7.7% населения страны.

В статье рассмотрены особенности расселения в приграничной зоне РА, тенденции его трансформации за последние пять лет, программы по развитию и поддержке приграничных населенных пунктов. Составлена карта приграничных поселений РА.