Rural Depopulation in Georgia: Regional and Municipal Levels of Analysis

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Abstract

The statistical data analysis for 2014 and 2021 indicates that the population in Georgia has slightly increased. However, further in-depth regional analysis of population dynamics based on the type of settlement differentiation (urban/rural) reveals significant regional differences. The study of population change demonstrates a clear depopulation trend in rural settlements in light of general population growth on a national level. Moreover, this phenomenon is particularly critical in rural areas of specific regions and therefore has a regional dimension. The study will determine whether the rural depopulation tendency is due to the same regional factors. Intraregional population data for the research's target areas will also be analysed. As a result of the two-level analysis (using regional and municipal units/levels of analysis), the research will reveal the most suitable/appropriate level to study rural depopulation and plan relevant policy/policy interventions.

Keywords: Rural Population Dynamics, Depopulation, Regional and Municipal Levels of Analysis

Introduction

According to the National Statistics Office (Geostat) data, in 2021, the population in Georgia was estimated at 3,728.6 thousand people, which is 0.4% more than the population number recorded in the 2014 population census. Therefore, the population of Georgia has slightly increased over the past six years. However, the detailed analysis of population changes on settlement type (rural/urban) and territorial-spatial (administrative and territorial units of Georgia—regions and municipalities) levels reveals that the population change is not homogeneous.

Between 2014 and 2021, the population in urban settlements of Georgia increased by 4.4%, while the population in rural areas decreased by 4.9%. Besides, the regional analysis shows significant regional differences in population change. In the case of the urban settlements, the population change is reflected by 10.1% growth (Adjara) and 7.7% decline (Imereti), while for the rural settlements, the population change is reflected by 1.5% growth (Adjara) and 13.1% population decline in Racha-Lechkhumi and Kvemo Svaneti (Table 1).

Table 1. The population change of Georgia in the period of 2014-2021(according to regions and settlement type)

	2014 (in thousands)	2021 (in thousands)	Change
Georgia	3,713.8	3,728.6	0.4%
Urban Settlements	2,122.6	2,215.6	4.4%
Rural Settlements	1,591.2	1,512.9	-4.9%
Tbilisi	1,108.7	1,202.7	8.5%
Autonomous Republic of Adjara	334.0	354.9	6.3%
Urban Settlements	184.8	203.5	10.1%
Rural Settlements	149.2	151.4	1.5%
Guria	113.4	107.1	-5.6%
Urban Settlements	31.9	31.2	-2.2%
Rural Settlements	81.4	76.0	-6.6%
Imereti	533.9	481.5	-9.8%
Urban Settlements	258.5	238.7	-7.7%
Rural Settlements	275.4	242.8	-11.8%
Kakheti	318.6	309.6	-2.8%
Urban Settlements	71.5	70.9	-0.8%
Rural Settlements	247.1	238.6	-3.4%

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Mtskheta-Mtianeti	94.6	93.4	-1.3%
Urban Settlements	21.3	22.6	6.1%
Rural Settlements	73.3	70.8	-3.4%
Racha-Lechkhumi and Kvemo Svaneti	32.1	28.5	-11.2%
Urban Settlements	7.0	6.7	-4.3%
Rural Settlements	25.1	21.8	-13.1%
Samegrelo and Zemo Svaneti	330.8	308.4	-6.8%
Urban Settlements	129.4	122.8	-5.1%
Rural Settlements	201.4	185.6	-7.8%
Samtskhe-Javakheti	160.5	151.1	-5.9%
Urban Settlements	54.7	54.2	-0.9%
Rural Settlements	105.8	96.9	-8.4%
Kvemo Kartli	424.0	437.3	3.1%
Urban Settlements	180.1	192.3	6.8%
Rural Settlements	243.9	245.0	0.5%
Shida Kartli	263.4	254.1	-3.5%
Urban Settlements	105.2	100.6	-4.4%
Rural Settlements	158.2	153.4	-3%

Therefore, population dynamics are characterised by remarkable regional differences, equally applicable to urban and rural settlements. At the same time, it is essential to note that, based on the relevant population change data (Table 1), the rural settlements of Georgia are more subject to population decline. The rural population decline rate is exceptionally high in three regions (administrative regions of the country) of Georgia: Racha-Lechkhumi and Kvemo Svaneti (-13.1%), Imereti (-11.8%), and Samtskhe-Javakheti (-8.4%). The population decline rate in the three regions mentioned exceeds by approximately two times the national rural depopulation rate (-4.9%).

The research analyses the three abovementioned regions of Georgia that are subject to depopulation to the greatest extent. The study aims to determine whether the population decline in the named regions results from the same socio-economic and geographic factors. Based on the Geostat data, the research will identify how effective and appropriate it is to conduct population decline analysis on the regional level or whether it is more convenient to study depopulation in Georgia on other territorial-spatial levels of analysis.

In light of this study's aim, the population dynamics of three target regions (Racha-Lechkhumi and Kvemo Svaneti, Imereti, and Samtskhe-Javakheti) in 2014 and 2021 will be studied on the municipal level as well.

Methods and Materials

The research is based on Space-Time Analysis, which entails answering two fundamental questions: where and when? However, as the terms "space" and "time" have different definitions/ meanings, and connotations, it is hard to conceptualise them appropriately [1]. In the scope of the given research, the regions and municipalities of Georgia are considered the critical dimensions of "space", and "time" is defined as the period between 2014 and 2021. Based on the data analysis, the research will identify to what extent the common depopulation factors contribute to Georgia's regional and municipal patterns. In addition, as already mentioned, the study will determine the most appropriate levels and units of analysis for the rural depopulation phenomenon.

The most significant limitation of the research is the need for more relevant (or incomplete, episodic) data for the regions and municipalities of Georgia. The limitation mentioned is particularly significant in terms of municipal data. This constrains the conduct of practical Space-Time Analysis, as it is essential to conceptualise (for example, on regional and municipal levels) two characteristics (space and time) and study trends (such as depopulation) based on the same parameters.

Results

According to the Geostat data, between 2014 and 2021, the negative natural change was one of the drivers of rural depopulation in two out of three research target areas, particularly in Imereti, Racha-Lechkhumi, and Kvemo Svaneti, while a natural population increase was recorded in the Samtskhe-Javakheti region (Table 2). Therefore, the rural population decrease in the named region was due to migration. It is also worth noting that migration had a significant effect on rural depopulation in all three regions, especially in the Samtskhe-Javakheti and Imereti regions, where rural negative net migration (the number of populations leaving rural areas exceeded the population moving into the same area) was the dominant factor contributing to population decrease in rural settlements.

Table 2. The indicators of natural movement of target rural settlements according to administrative-territorial units

	2015	2016	2017	2018	2019	2020
Imereti						
Number of Live Births	4,179	3,773	3,652	3,179	2,777	2,773
Crude Birth Rate (‰)	15.4	14.2	14	12.4	11.1	11.3
Number of Deaths	4,789	5,066	4,916	4,491	4,540	4,626
Crude Death Rate (‰)	17.7	19	18.8	17.6	18.2	18.9
Natural Increase	-610	-1,293	-1,264	-1,312	-1,763	-1,853
Rate of Natural Increase (‰)	-2.3	-4.9	-4.8	-5.1	-7.1	-7.6
Samtskhe-Javakheti						
Number of Live Births	1,508	1,544	1,432	1,467	1,281	1,294
Crude Birth Rate (‰)	14.4	15	14.1	14.6	13	13.3
Number of Deaths	1,329	1,373	1,280	1,290	1,305	1,342
Crude Death Rate (‰)	12.7	13.3	12.6	12.9	13.2	13.8
Natural Increase	179	171	152	177	-24	-48
Rate of Natural Increase (‰)	1.7	1.7	1.5	1.8	-0.2	-0.5
Racha-Lechkhumi and Kvemo Svaneti						
Number of Live Births	270	254	256	255	208	185
Crude Birth Rate (‰)	10.9	10.5	10.9	11	9.2	8.4
Number of Deaths	695	706	597	518	571	653
Crude Death Rate (‰)	28	29.2	25.4	22.4	25.3	29.6
Natural Increase	-425	-452	-341	-263	-363	-468
Rate of Natural Increase (‰)	-17.1	-18.7	-14.5	-11.4	-16.1	-21.2

In 2014–2021, the rural population of the Imereti region decreased by approximately 30 thousand people, compared to the natural population decrease of 8100 people. The rural population decrease in the Samtskhe-Javakheti region was 9 thousand in light of the natural population increase. While in the case of Racha-Lechkhumi and Kvemo Svaneti, a negative balance of natural migration caused 2/3 of the total population decline. Accordingly, migration from rural settlements was the main driver of rural population shrinkage in Samtskhe-Javakheti and Imereti. In contrast, migration is a less significant factor in the overall picture of population decline in the Racha-Lechkhumi and Kvemo Svaneti regions.

The regional statistical analysis of the population dynamics of Georgia shows that between 1989 and 2014, the population decreased most significantly in Racha-Lechkhumi and Kvemo Svaneti regions (-46.3%), while in the case of Imereti and Samtskhe-Javakheti, the population decline was approximately 30% [2]. The mentioned factor should be considered as the explanation for the depopulation of Racha-Lechkhumi and Kvemo Svaneti, primarily through natural population decreases in 2014–2021. Because population decline has been actively taking place in the region for several decades, the relevant process of depopulation is reflected in the demographic picture of the current stage.

Based on the natural movement indicators (Table 2), a decrease in the birth rate can be observed in all three regions, while the number of deaths is mostly stable. The mentioned observation indicates that

the rural population of the target regions is in continuous decline, which will be reflected in the following population censuses.

The 2014–2021 regional statistical analysis demonstrates that migration from rural areas is the critical factor behind the population decline in Samtskhe–Javakheti and Imereti. At the same time, it is essential to mention that economic factors are considered the main determinants of migration. Migration is quite often linked to inequalities in income levels between the origin and destination areas of the migrants. According to the global migrant flows analysis in 1995 and 2015, an increase of 10% in the income difference between origin and destination places increases the number of migrants by approximately 3% [3]. Therefore, it is vital to analyse the economic factors that determine the migration, as these economic aspects could be the determinants of regional rural depopulation trends.

The analysis at the regional level shows that the population decline rate in the study's three target regions is not directly correlated with various economic indicators (Table 3). In the case of Samtskhe-Javakheti, the region is advanced (compared to other regions of Georgia) in terms of GDP (gross domestic product) per capita and FDI (Foreign Direct Investment) per capita. At the same time, the unemployment rate in the region is one of the lowest - 14.9% (2021), while the national unemployment rate was 20.6%, about six percentage points higher. Imereti, Racha-Lechkhumi, and Kvemo Svaneti's GDP and FDI per capita are significantly lower than the national rate. Despite this difference, these two indicators are still higher in the two named regions than in Kakheti and Guria, where depopulation is two- to three-times slower.

As the unemployment rate is high in Imereti, Racha-Lechkhumi, and Kvemo Svaneti regions, this is a determinant of population decline, particularly in terms of migration from the mentioned regions. This factor could be further supported by the highlighted mean rates of GDP per capita and FDI per capita in the two named regions. However, as has already been mentioned, in the case of Samtskhe-Javakheti, the same indicators do not correspond to this identified trend and, to some extent, nullify this correlation.

Table 3. Economic Indicators on National and Regional Levels

	GDP per capita/2020 (USD)	FDI per capita/2019 (USD)	Unemployment/2021 (%)
Georgia	4255.7	363.2	20.6
Tbilisi	6702.8	809.1	23.8
Adjara AR	3982.9	553.7	19.2
Guria	2323.8	15.1	17.1
Imereti	2757.1	91.4	23.1
Kakheti	2618.2	7.2	8.7
Mtskheta-Mtianeti	4451.6	140.5	14.7
Racha-Lechkhumi and Kvemo Svaneti	3197.8	79.0	30
Samegrelo-Zemo Svaneti	3251.1	145.0	15.7
Samtskhe-Javakheti	3610.7	329.2	14.9
Kvemo Kartli	2918.9	112.4	25.2
Shida Kartli	2726.6	4.8	22.3

Along with other factors, low population density is also considered the determining factor for intensifying depopulation processes [4]. The study of neighbouring and border regions and municipalities in Portugal and Spain revealed that higher rates of population decline characterised the lower population density areas. Furthermore, this rapid decline was the reason for substantial economic and structural changes (in terms of population structure and the societal structure as a whole). These areas and territories needed more business and human resources, creating additional challenges and pressure in terms of establishing/sustaining economic and other links with other regions [4].

The analysis of population density in Georgia (Table 4) demonstrates that low population density should be considered one of the determinants of the depopulation tendency that is particularly exigent in rural areas and settlements. Racha-Lechkhumi and Kvemo Svaneti regions have the lowest population density, which is reflected in the fastest pace of population decline. Population density is also low in Samtskhe-Javakheti, which is more subject to depopulation than other regions of Georgia.

However, the same pace of population shrinkage is not the case for two regions of the country: Mtskheta-Mtianeti and Kakheti, where the population density rate is mostly the same as in Samtskhe-Javakheti. Moreover, despite the high population density in the Imereti region, population decline is one of the highest in Georgia. In the case of Mtskheta-Mtianeti and Kakheti, one of the key factors contributing to the relatively low pace of population decline could be proximity to the capital city Tbilisi, which leads to temporary, seasonal, or pendulum migration rather than permanent migration. The additional local factor affecting population dynamics in eastern Georgia was identified by the study of borderline regions of the East Caucasus Mountains [5] and is related to the so-called "Military Road" that connects Georgia to Russia.

Despite the patterns of correlation that have been identified on a regional level and that reveal the extent of dependence between two variables—population density and depopulation—particular attention should be paid to intra-regional peculiarities. Therefore, the phenomenon of the dependence of depopulation on population density could be more effectively examined on the municipal level and in relation to other variables. The study of depopulation in the mountainous region of China showcased that it is crucial to focus not only on macro factors but also on the local and spatial characteristics of target regions [6].

Table 4.Population Density as of 2014

	Person per sq.km
Georgia	**65.0**
Tbilisi	2,183.9
Adjara AR	114.9
Guria	56.1
Imereti	83.9
Kakheti	28.3
Mtskheta-Mtianeti	16.8
Racha-Lechkhumi and Kvemo Svaneti	7.1
Samegrelo-Zemo Svaneti	45.0
Samtskhe-Javakheti	25.2
Kvemo Kartli	65.6
Shida Kartli	77.0

As highlighted in the article's introduction, the three target regions of the research are particularly subject to population decline. The population in these three administrative-territorial units decreased at the fastest pace in 2014–2021. Based on the focus of the article, which implies the identification of common regional determining factors of rural depopulation, it is relevant to analyse the rate of depopulation of the population of rural settlements in the mentioned regions from a municipal point of view.

The analysis of the rural population changes in the study's three target regions in 2014–2021 shows that the pace of depopulation differs significantly at the municipal level (Table 5). During the mentioned period, the population decline in rural settlements of the Imereti region was 11.8%. However, the depopulation pace was two-timing slower in rural settlements of two municipalities of Imereti, namely, Kharagauli and Chiatura municipalities (where the municipal population shrinkage was about 4-5%), while the depopulation tendency had a 6-7 percentage point higher pace (compared to the mean/regional level) in two other municipalities, Tskaltubo and Tkibuli (where population decline is estimated at 17-18%).

The same tendency is revealed in other target regions. In Racha-Lechkhumi and Kvemo Svaneti, the rural population decline was two times slower in Ambrolauri municipality (-7.7%) compared to Tsageri municipality (-18.9%). In the case of Samtskhe-Javakheti, the rural depopulation was the fastest paced in Ninotsminda municipality and accounted for approximately a quarter of the rural population (-24.9%), in light of the rural population growth recorded in Aspindza municipality (+3.9%).

As a result, significant intraregional differences must be addressed despite the similar regional depopulation picture that positions these three target regions as the most depopulated ones in Georgia. In specific cases, particularly in Aspindza municipality, the opposite trend of depopulation (population growth) was observed. Therefore, the municipal differences and peculiarities should also be studied as appropriate. Therefore, the municipal differences and peculiarities should also be studied as appropriate.

At the same time, it is essential to highlight that, according to Geostat data, between 2015 and 2020, natural growth of the rural population was not observed in any municipality in Imereti, Racha-Lechkhumi, and Kvemo Svaneti. Respectively, rural depopulation was driven by migration (from rural areas) and natural population change (decrease). In the case of Samtskhe-Javakheti, based on cumulative data for 2015–2020, natural rural population growth was recorded in four municipalities: Adigeni, Aspindza, Akhalkalki, and Ninotsminda. In other words, the rural depopulation was solely caused by negative net migration, which could be rural population movement towards either other regions of Georgia (internal migration) or to other countries (external/international migration). Therefore, the mentioned region could be considered particularly vulnerable to migration processes. For further research, the drivers of this phenomenon should be analysed more thoroughly and separately to understand the local context and factors.

Table 5.The population dynamics and the population change in rural settlements of the target regions on municipal level in 2014-2021

	2014 (in thousands)	2021 (in thousands)	Change
Imereti	275.4	242.8	-11.8%
Baghdati Municipality	17.9	15.3	-14.5%
Vani Municipality	20.8	17.8	-14.4%
Zestaponi Municipality	36.8	32.9	-10.6%
Terjola Municipality	30.9	26.6	-13.9%
Samtredia Municipality	21.5	19.1	-11.2%
Sachkhere Municipality	31.6	29.1	-7.9%
Tkibuli Municipality	11.0	9.0	-18.2%
Tskaltubo Municipality	45.6	37.7	-17.3%
Chiatura Municipality	27.1	25.7	-5.2%
Kharagauli Municipality	17.5	16.7	-4.6%
Khoni Municipality	14.6	12.8	-12.3%
Racha-Lechkhumi and Kvemo Svaneti	25.1	21.8	-13.1%
Ambrolauri Municipality	9.1	8.4	-7.7%
Lentekhi Municipality	3.4	3.0	-11.8%
Oni Municipality	3.5	3.0	-14.3%
Tsageri Municipality	9.0	7.3	-18.9%
Samtskhe-Javakheti	105.8	96.9	-8.4%
Adigeni Municipality	14.7	14.4	-2%
Aspindza Municipality	7.6	7.9	3.9%
Akhalkalaki Municipality	36.8	33.2	-9.8%
Akhaltsikhe Municipality	17.3	17.2	-0.6%
Borjomi Municipality	10.1	9.7	-4%
Ninotsminda Municipality	19.3	14.5	-24.9%

The unit/level of analysis of rural population decline could be the rural settlements (a settlement or a group of settlements as a unit of analysis) in conjunction with the altitude distribution of the population. The space-time analysis of the population of Georgia [7] showcased those significant spatial differences that characterised the 1989 and 2014 population declines in Georgia. From 1989–2014, the population change in Georgia was -31.8%. In mountainous settlements (801 metres above sea level and higher), the population decline was 37.2%, while at lower altitudes (0-800 MASL), the depopulation

was estimated at 31.1%. This negative population growth tendency was particularly observed in the so-called Medium Mountain Zone (1201–1800 MASL), where the population almost halved (population decline estimated at more than 45%) in the same period [7]. The high depopulation rate observed in Tsageri and Tkibuli municipalities in 2014–2021 could be part of the mentioned trend.
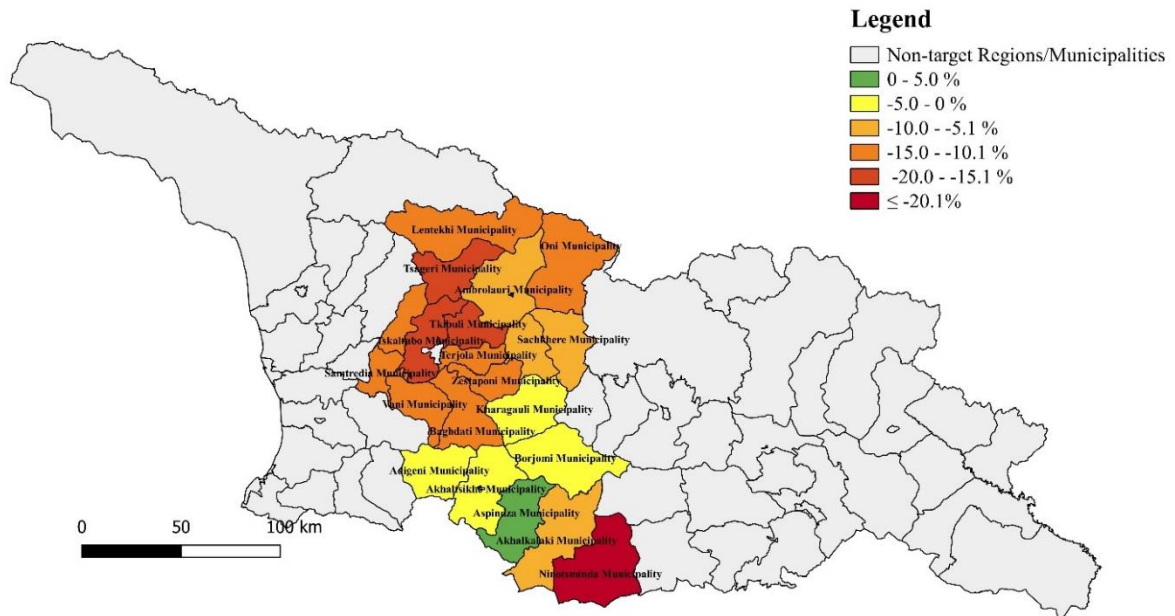

Figure 1. The population change in rural settlements of the target regions on municipal level in 2014-2021

The analysis on the municipal level and the observed differences in intraregional depopulation pace indicate that further and in-depth analysis of the rural depopulation phenomenon will be more effective and appropriate on the sub-regional level. Although the lack of various socio-economic indicator data at the named level of analysis, primarily through time (in different periods), hinders and poses a significant challenge for conducting a relevant study that would aim to identify regional and sub-regional factors causing depopulation in rural areas.

The study of the depopulation of rural settlements is a complex one that is well reflected in the research results as it highlights the territorial differences and peculiarities. As a result, this topic in turn requires a complex approach to identify the determinants. For this reason, it would be adequate to compare neighbouring (maybe relatively close areas as well) municipalities that share the same demographic and other characteristics. For instance, this could be the case for Samtskhe-Javakheti, where, in 2014–2021, the highest rate of population decline was recorded in the Akhalkalaki and Ninotsminda municipalities. Considering another aspect of this research area, namely ethnic composition, as in these two municipalities the ethnic minority of Georgia composes the majority of the local population, it would be essential to integrate this aspect in the research as well (Fig. 1).

However, as it was mentioned in the research limitation section, the constructive regional and intraregional study of population decline could be conducted only based on complete data on the named levels of analysis, which were different during the conduct of the present research. However, relevant data still needs to exist or be available for regions and municipalities in Georgia. That is an apparent constraint.

Conclusion

The regional analysis of population dynamics in Georgia in 2014–2021 identified that population change is not homogenous in urban and rural settlements. At the same time, the population decline is a more significant and pressing challenge in rural areas, particularly in Racha-Lechkhumi and Kvemo Svaneti, Imereti, and Samtskhe-Javakheti regions, where the depopulation rate is approximately two

times higher compared to the mean/national pace of rural population decline. Therefore, there was an urgent need to identify the process's root causes and highlight relevant regional factors.

The statistical analysis showed that the rural population decline in these three regions is not homogenous either. In the case of Samtskhe-Javakheti and Imereti, the key driver of rural depopulation was migration. In contrast, in the cases of Racha-Lechkhumi and Kvemo Svaneti, negative net natural population change was the leading cause of population decrease. Based on the available regional data, several socio-economic aspects were analysed that could be determinants of the rural population shrinkage on a regional level. The relation between several economic indicators/population density, and depopulation rate was examined. This was followed by the analysis on the intraregional/municipal levels.

The differences identified in the rate of population decline in rural settlements at the municipal level of the target regions indicate that it would be more effective and constructive to examine the determinants of the named challenge at the municipal level rather than the regional level.

The given research identified several trends and factors contributing to depopulation. However, a further need for municipal study is observed. In these terms, the non-existence/availability of relevant data is determined as a research constraint that poses a significant challenge and limits the capacities of practical multivariable and multilevel analysis. In this context, it is worth highlighting the importance of on-site research. The reasons for population decline are only sometimes reflected in statistics, and the field research data would be complementary. This gap and challenges are critical regarding economic indicators, and this aspect was addressed in the given study.

Conducting cluster studies of neighbouring municipalities to reveal regional peculiarities would be highly relevant for further research on population decline in rural areas and the development of relevant policy/policy interventions. This requires detailed and highly sophisticated regional and sub-regional data, enabling depopulation analysis from a time perspective. Another relevant data source to study the issue is regional/municipal on-site/field research to fill in the existing gaps in the datasets.

Competing interests

The authors declare that they have no competing interests.

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