

# FORECASTING THE POPULATION OF RETIREMENT AGE IN RURAL RUSSIA

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## Introduction

Demographic constraints are a barrier to sustainable rural development. Unfavorable demographic trends in the development of rural areas, including aging, decrease of the working-age population, decline in the birth rate, increase the demographic load, actualize the assessment and forecasting of future changes. The population of Russia in 2020 decreased by more than 0.5 million and as of January 1, 2021, it was 146.2 million (Rosstat, 2021). The main reason is the high natural population decline, which was only partially compensated by the migration gain. Simultaneously with the increase in the death rate, which during the COVID-19 pandemic reached its maximum value in the last 10 years, the birth rate decreased, and the natural population decline increased. In January 2021, compared with January 2020, a decrease in the number of births occurred in 80 regions of the Russian Federation, and an increase in the number of deaths in 84. The rural population decreased and as of January 1, 2021 amounted to 36.9 million people (Rosstat, 2021). The purpose of the study is a mid-term forecast of the rural population of retirement age. To achieve this aim, the tasks of theoretical analysis of the patterns of aging were solved, and the assessment of the impact of the pension reform in Russia on changes in the population of retirement age and demographic load.

## Methodology

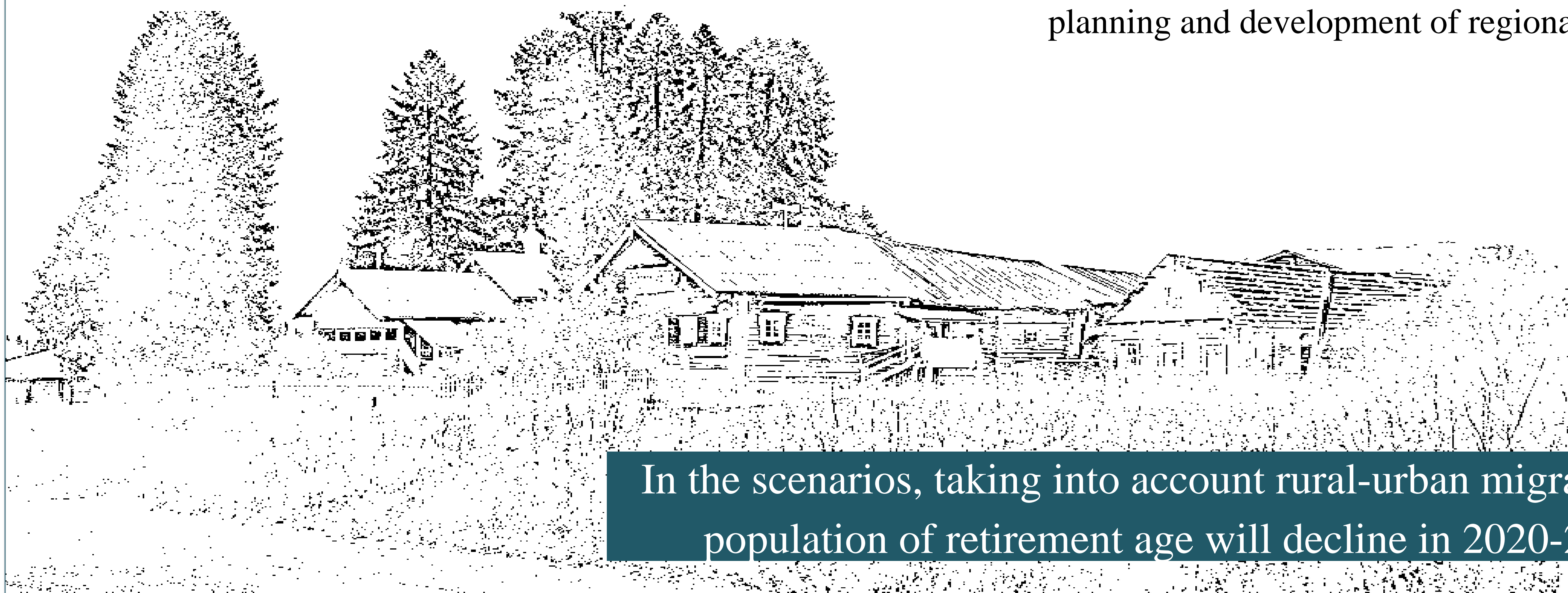
Methods for predicting the size and structure of the population of the countries of the world are widely known (Rowland, 2003; Alho, Spencer, 2005; Alho et al., 2006). To construct a demographic forecast, the component method was used. Scenarios of demographic development of rural areas in 2029-2049 are described: Baseline, Medium, High, Baseline with migration, Medium with migration, High with migration. A high forecast scenario can be called normative, because it is based on the targets presented in the National Project “Demography” (2019). The database was formed on the basis of statistics presented on the official website of Federal State Statistics Service – Rosstat. The calculations were performed using Mathcad 14.0. When assessing the results of migration, Rosstat data were used, and also the patterns and trends in the scale of rural-urban migration during the Covid-19 pandemic were taken into account (Mkrtchyan, 2019; Blinova et al, 2020). The forecast for the population of retirement age took into account the specifics of the pension reform in Russia.

## Results

The paper presents a medium-term forecast and six alternative scenarios of the size of the rural population of retirement age up to 2049 in Russia. The research results led to the following conclusions.

- The results show that the number of rural population of retirement age in 2020-2029 will decrease by 4.2-7.3% with zero migration and 5.8-8.9% taking into account the scale of rural-urban migration. From 2034, an increase in the number of persons of retirement age is projected. In 2020-2049 the number of rural pensioners will grow in the medium and high scenarios of demographic development by 4.4-5.5%, excluding migration.
- The rural population below the working age (0-15) will decline in 2020-2039 for all scenarios of demographic development, in 2039-2049 a gradual increase in the size of this age group is projected.
- The demographic load on the working-age population initially decreases from 898 people per 1000 (2020) to 712-734 people (2039), but subsequently increases to 778-889 people (2049).

Upcoming demographic changes must be taken into account in the strategic planning and development of regional programs.



In the scenarios, taking into account rural-urban migration, the population of retirement age will decline in 2020-2049.