

life, even in conditions of rapid economic development. The formation of a policy of smart and balanced water use is the key to sustainable development of the country.

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ANALYSIS OF INDICATORS AND FACTORS OF CHILDS MORTALITY IN THE ASPECT OF SUSTAINABLE DEVELOPMENT OF UKRAINE

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АНАЛІЗ ПОКАЗНИКІВ І ФАКТОРІВ СМЕРТНОСТІ ДІТЕЙ В АСПЕКТІ СТИЙКОГО РОЗВИТКУ УКРАЇНИ

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АНАЛИЗ ПОКАЗАТЕЛЕЙ И ФАКТОРОВ СМЕРТНОСТИ ДЕТЕЙ В АСПЕКТЕ УСТОЙЧИВОГО РАЗВИТИЯ УКРАИНЫ

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The paper analyzes the quality of life in Europe and in Central Asia. Infant mortality rates under 1 year of age and under 5 years of age were considered as indicators of health status in countries. The level of immunization of children from infectious diseases, as well as indicators of early birth rate are considered. These indicators for Ukraine were comparable with similar indicators of developed European countries and other European countries and Central Asian countries. These indicators were considered as an important component of the general health of the population. In turn, the health of the population is the key to a quality life.

Key words: sustainable development, quality of life component, infant mortality rate, immunization, adolescent fertility rate

В роботі проаналізований показник якості життя в країнах Європи та Центральної Азії. Були розглянуті показники дитячої смертності у віці до 1 року та у віці до 5 років як показники стану охорони здоров'я в країнах. Розглянутий рівень імунізації дітей від інфекційних хвороб, а також показники рівня ранньої народжуваності. Вказані показники для України були порівнянні з аналогічними показниками розвинених європейських країн та інших європейських країн і країн Центральної Азії. Перелічені показники розглядались в якості важливої складової загального рівня здоров'я населення. В свою чергу здоров'я населення є запорукою якісного життя.

Ключові слова: сталий розвиток, компонента якості життя, показник дитячої смертності, імунізація, показник підліткової народжуваності

В работе проанализирован показатель качества жизни в странах Европы и Центральной Азии. Были рассмотрены показатели детской смертности в возрасте до 1 года и в возрасте до 5 лет как показатели состояния здравоохранения в развивающихся странах. Рассмотрен уровень иммунизации детей от инфекционных болезней, а также показатели уровня ранней рождаемости. Указанные показатели для Украины были сопоставлены с аналогичными показателями развитых европейских стран, других европейских стран и стран Центральной Азии. Перечисленные показатели рассматривались в качестве важной составляющей общего уровня здоровья населения. В свою очередь здоровье населения является залогом качественной жизни.

Ключевые слова: устойчивое развитие, показатель качества жизни, детская смертность, иммунизация, показатель подростковой рождаемости

INTRODUCTION

Among the indicators of sustainable development of the country an important place is occupied by such an indicator as quality of life. The quality of life indicator is presented as a radius-vector of three main directions of sustainable development: the index of environmental dimension, the index of economic dimension and the index of socio-institutional dimension [1]. At the same time, an important component of the quality of life of the population is health, without which it is impossible to imagine a quality human life.

The level of health of the population can also be presented as a comprehensive indicator. The level of health is a result of many other parameters. Human health is affected by economic factors through proper nutrition, adequate health care, quality drinking water, access to appropriate sanitation, the required level of medical care for women during pregnancy, as well as for mothers and newborns [2].

The health of the population also depends on social and institutional indicators. The level of health, mortality, and life expectancy at birth are also affected by the level of health care in the country, the availability of hospitals, qualified doctors, social insurance, social security, and many other factors.

The level of health also necessarily depends on the environmental component of sustainable development of the country. Polluted air is the cause of many diseases, primarily respiratory and various types of pneumonia. Poor quality drinking water causes diseases of the gastrointestinal tract. Poor water and air are the cause of increasing infant mortality worldwide.

QUALITY OF LIFE ANALYSIS

The quality of life indicator is an integral indicator of sustainable development. With its help it is possible to draw conclusions about the general level of development of the country [2]. In fig. 1 shows a comparison of quality of life for Europe and Central Asia [3].

The diagram above shows the data for the countries of Europe & Central Asia (excluding high income), for Ukraine and for comparison the average value of the quality of life for the EU countries and separately the average value for the countries of Europe & Central Asia (excluding high income). As can be seen from the chart on the level of quality

of life, Ukraine lags significantly behind the EU countries, and also has a Quality of Life Component below the average for the countries of Europe & Central Asia (excluding high income).

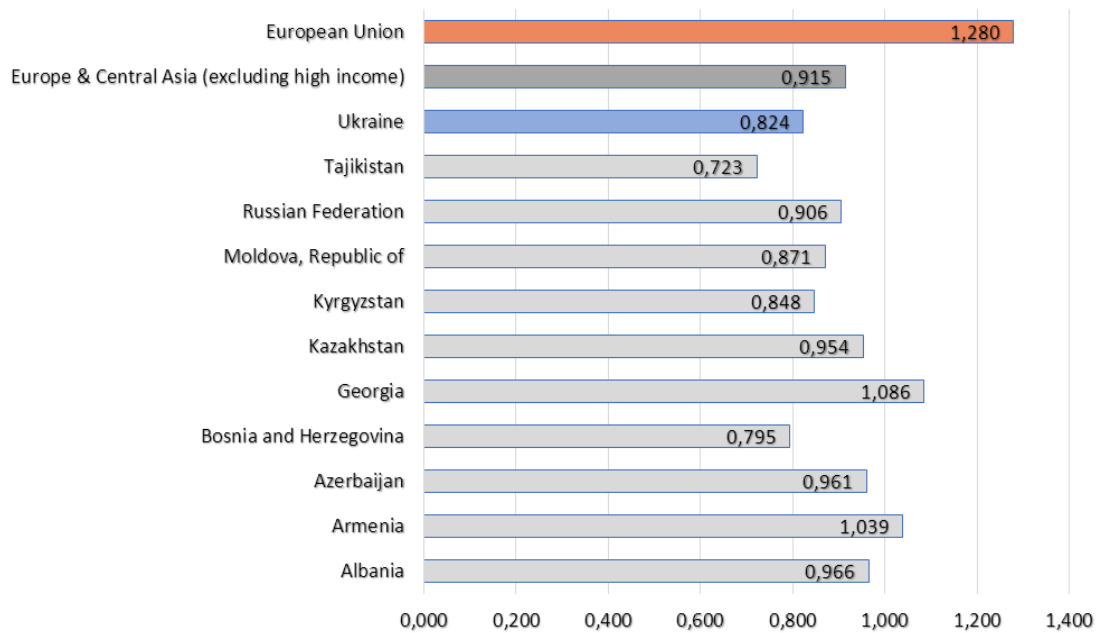


Figure 1. Quality of Life Component (according to 2017 data)

ANALYSIS OF INFANT MORTALITY

The level of health of the population is one of the main indicators of quality of life. An indicator such as the infant mortality rate can be used to assess the overall health of the country [4]. There are infant mortality rates under the age of 1 year and infant mortality under the age of 5 years.

The high infant mortality rate is a sign of the country's poverty and insufficient level of medical care. The infant mortality rate is a generally accepted indicator of a country's health, reflecting quality of life, well-being, distribution of social and material benefits in society, the state of the environment, education and culture, disease prevention, availability and quality of care and much more. The main causes of infant death include complications at birth, congenital anomalies, asphyxia at birth, pneumonia, diarrhea and malaria. The under-5 mortality rate is determined by the main integrated indicator used by the world community to assess the level of socio-economic development and the effectiveness of the country's health care system. The most important component is the mortality rate of infants, i.e. children under 1 year of age (Fig. 1).

The mortality rate in Ukraine of newborns under 1 year of age per 1,000 newborns as of 2019 was 5 children according to the World Bank [5]. As can be seen from Fig. 1, currently this figure is lower than the average for Europe and Central Asia (excluding high incomes). However, the infant mortality rate in Ukraine is more than 2,5 times higher than the average for the European Union.

Another indicator of infant mortality is the mortality rate of children under 5 years of age per 1,000 live births. According to the World Bank [5], as of 2019, this indicator in Ukraine was 8,4 (Fig. 2). Compared to the average for the European Union, where the figure for 2019 was 3,95, infant mortality under the age of 5 in Ukraine again exceeds the European average by more than twice. But as can be seen from both diagrams, there is a positive trend.

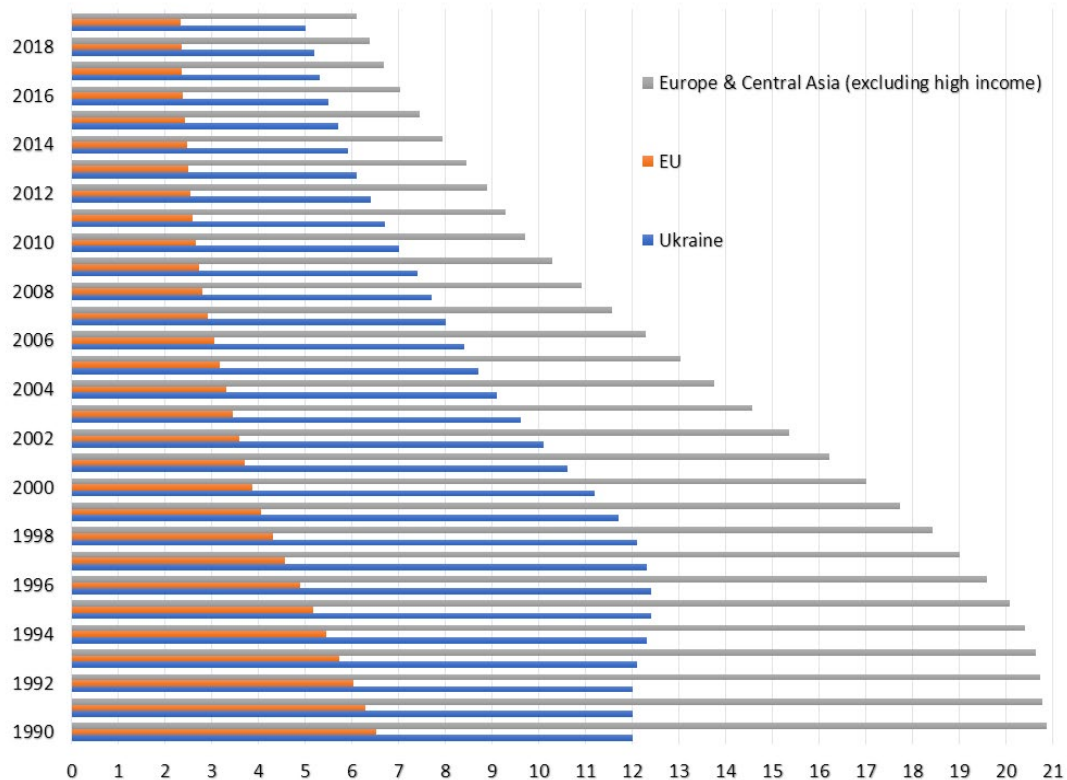


Figure 1. Mortality rate, neonatal (per 1,000 live births)

According to statistics, in the age structure of infant mortality in Ukraine in the first place – children who died between the ages of 0 and 6 days (early neonatal mortality), in the second – aged 28 days – 1 year (late neonatal mortality), in third place – 7...27 days (postnatal mortality).

Common causes of child mortality in Ukraine are a decrease in the level of material and social security of the population, especially families with children, a decrease in the level and quality of education of young parents, insufficient material and technical base of health care facilities, reduced coverage of preventive vaccinations, including lack of vaccines and toxoids, non-compliance with sanitary legislation during the organization of meals in educational institutions, etc.

ANALYSIS OF THE LEVEL OF PEDIATRIC IMMUNIZATION

Vaccination of children is an important component in reducing child mortality. The purpose of vaccinations is to create conditions for immunity to infectious diseases by imitating them. To do this, the child is injected with a weakened pathogen. In response, the body begins to produce protective reactions and defeats the artificial disease, and the "memory" of it remains. Some vaccines from the first vaccination provide the body with a stable immune system. These include measles and mumps vaccinations. Tetanus vaccination can be considered a record holder in terms of immune protection time – more than 20 years.

In Ukraine today, vaccination against the following diseases is carried out: tuberculosis, diphtheria, tetanus, pertussis, hepatitis B, measles, polio, rubella and mumps, hemophilic infection. All of these vaccinations are free.

If we take other countries for comparison, in addition to the vaccinations provided for in the Ukrainian calendar, there are also vaccinations against pneumococcal infection, in

some – vaccinations against meningococcal infection. But these vaccinations are not free there.

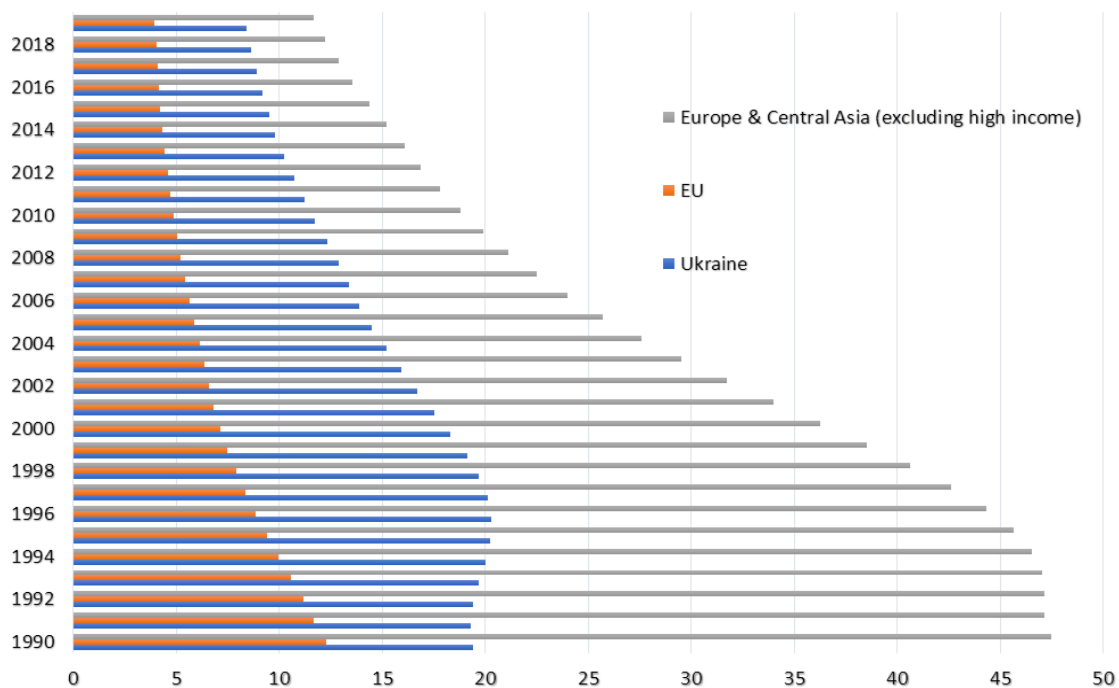


Figure 2. Mortality rate, under-5 (per 1,000 live births)

It is thanks to vaccination that there are no outbreaks of epidemics in Ukraine against diseases against which preventive vaccinations are carried out. Outbreaks appear to be exacerbated during collective immunity. Collective immunity works properly, provided that 95...97 % of the country's population is vaccinated against the disease. If the collective immunity is less than 95 %, there is a risk of increasing the number of patients to the epidemiological threshold. Therefore, immunoprophylaxis is extremely important. Those who have given up vaccination avoid the disease at the expense of those who have been vaccinated.

The World Bank collects statistics on vaccination of children with DPT vaccine (diphtheria, pertussis, tetanus) at the age of 12...23 months, measles vaccine at the age of 12...23 months and HepB3 vaccine (hepatitis B) at the age of one year (Fig. 3) [5].

Immunization of children with hepatitis B began in Ukraine in 2000. As can be seen from Fig. 3, immunization of children in Ukraine fell sharply between 2009 and 2016. The lowest level of immunization was observed in 2016. If the number of unvaccinated children increases, the collective immunity ceases to work, and there is a danger that even those who are vaccinated will get sick. There are a number of parents who believe that it is better for a child to get an infectious disease in childhood than to get vaccinated. Infectious disease for the body is a very serious test. Even with a mild form of the disease, complications can occur. These complications do not appear immediately, but can appear in a year or even many years. One does not even guess that these are the consequences of a disease once transmitted in childhood.

Vaccination attitudes in EU countries are more responsible. At the same time, in Europe and Central Asia (excluding high income) the situation is even better today (Table 1) [5]. As can be seen from table. 1 vaccination level in the EU is approaching 95 %, while in other countries in Europe and Central Asia it exceeds 95 %, which is the key to the formation of collective immunity.

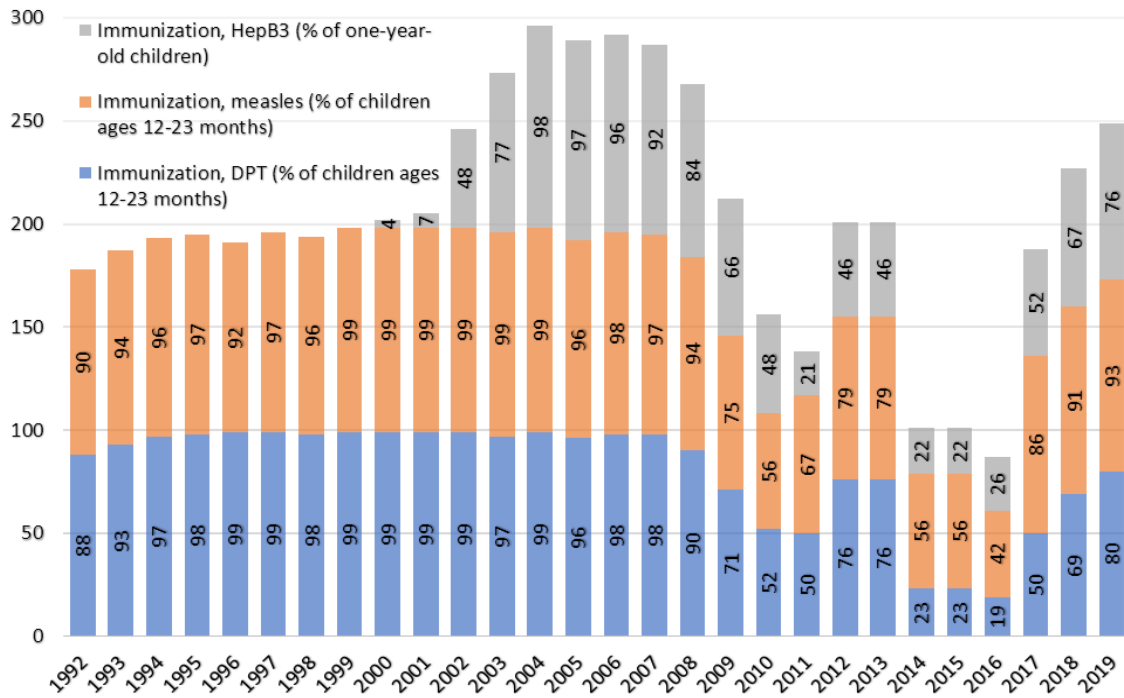


Figure 3. Indicators of immunization of children in Ukraine, %

Table 1. Percentage of immunized children in 2019

Countries	Indicator	Number of vaccinated, %
Europe & Central Asia (excluding high income)	Immunization, DPT (% of children ages 12-23 months)	95,76
	Immunization, HepB3 (% of one-year-old children)	95,38
	Immunization, measles (% of children ages 12-23 months)	96,92
European Union	Immunization, DPT (% of children ages 12-23 months)	94,73
	Immunization, HepB3 (% of one-year-old children)	91,89
	Immunization, measles (% of children ages 12-23 months)	94,35

ANALYSIS OF ADOLESCENT FERTILITY RATE

Another indicator that affects the infant mortality rate is early birth rate (Fig. 4) [5]. Early pregnancy and inadequate medical care lead to a significant increase in birth defects, complications, and increased infant mortality. In low- and middle-income countries, complications of pregnancy and childbirth are one of the leading causes of death among girls aged 15...19. Worldwide, one in five girls gives birth before the age of 18, and in the poorest regions of the world, more than one in three girls give birth by that age.

According to the data in Fig. 4 you can see that the birth rate of girls aged 15 to 19 years as of 2018 was 23 per 1,000 girls. This is roughly the same as for Europe and Central Asia, except for the EU. There, the number of girls giving birth between the ages of 15 and 19 as of 2018 is 25,34 per 1,000. In the EU, this figure in 2018 was 8,93 per 1,000 girls. Adolescent fertility rate in Ukraine is again more than twice as high as in the EU.

The rates of stillbirths and infant mortality among children born to adolescent mothers are 50 % higher than among children born to mothers aged 20...29. Babies born to

adolescent mothers are more likely to have low birth weight, which can have a long-term negative impact on their health and development.

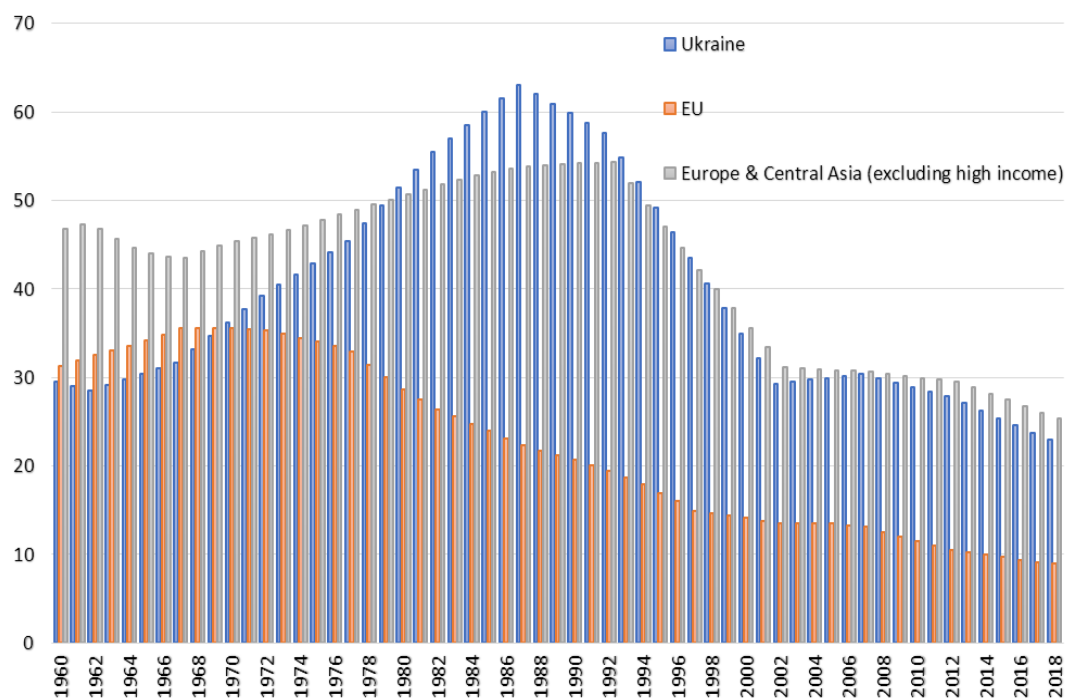


Figure 4. Adolescent fertility rate (births per 1,000 women ages 15...19)

CONCLUSIONS

Sustainable development of the country is impossible without ensuring a healthy life. At the same time, the level of health of the population is one of the main complex indicators, which is influenced by the economic situation in the country, the environmental situation, and socio-institutional indicators of the country. Therefore, the health of the population reflects the general state of development of the state. We have analyzed one of the components that is directly considered when assessing both the quality of life of the population and the level of health of the nation. This is a matter of early infant mortality. Mortality of newborns (children under 1 year of age) and children under 5 years of age best shows the level of socio-economic development of the country, as it depends on the level of health care and material well-being of the population. Another parameter that directly affects infant mortality is the percentage of children vaccinated against infectious diseases. Inadequate vaccination deprives the population of collective immunity and causes outbreaks of infectious diseases. This can be seen in recent years on the example of outbreaks of measles.

According to the analyzed statistics, it can be seen that according to the above indicators, Ukraine lags behind developed European countries on average twice. However, all indicators have been positive in recent years, which gives hope for a healthy future for Ukrainians.

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ANALYSIS AND COMPARISON OF SOME INDICATORS OF LIFE SAFETY IN UKRAINE IN THE ASPECT OF SUSTAINABLE DEVELOPMENT

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АНАЛІЗ НА ПОРІВНЯННЯ ДЕЯКИХ ПОКАЗНИКІВ БЕЗПЕКИ ЖИТТЯ В УКРАЇНИ В АСПЕКТІ СТАЛОГО РОЗВИТКУ

Комариста Б. М., Бендюг В. І.

АНАЛИЗ И СРАВНЕНИЕ НЕКОТОРЫХ ПОКАЗАТЕЛЕЙ БЕЗОПАСНОСТИ ЖИЗНИ В УКРАИНЕ В АСПЕКТЕ УСТОЙЧИВОГО РАЗВИТИЯ

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From the point of view of sustainable development of Ukraine, the article analyzes the Security of Life Component as a component of sustainable development. The Security of Life Component in Europe and Central Asia is analyzed in comparison with the Security of Life Component in Ukraine. The indicator of the number of the armed forces of Ukraine was considered as a guarantee of security of life in the country. The number of armed forces in Europe and Central Asia is compared. Some modern aspects of Ukraine's defense capability are considered. Road safety has also been analyzed as part of life safety in general. Road accident mortality in Ukraine and European and Central Asian countries is compared. The types of road accidents in Ukraine are given, as well as the main causes of road accidents.

Key words: *sustainable development, security of life component, armed forces personnel, mortality from road traffic injuries*

В аспекті сталого розвитку України в роботі проаналізований показник безпеки життя, як складова сталого розвитку. Проаналізована компонента безпеки життя в країнах Європи та Центральної Азії у порівнянні з Україною. Був розглянутий показник чисельності ЗСУ, як запорука безпеки життя в країні. Проведене порівняння чисельності збройних сил у країнах Європи та країнах Центральної Азії. Розглянуті деякі сучасні аспекти обороноздатності України. Також було проаналізовано безпеку дорожнього руху, як частину безпеки життя загалом. Порівняно