

*D.O. Bugayko Doctor of Sc. (Economics) O.R. Shevchenko, PhD, D.D. Bugayko  
(National Aviation University, Ukraine)*

### **Proactive risk management of the post-war sustainable development of the airports and airfields system of Ukraine**

*The system of airports and airfields of Ukraine suffered significant losses from the first day of the war. Unfortunately, active risks to the system are still relevant today. The report proposes strategic scenarios for the post-war recovery and sustainable development of airports in Ukraine based on system proactive risk management.*

The system of airports and airfields of Ukraine suffered significant losses from the first day of the war. Unfortunately, active risks to the system are still relevant today. Despite this, the development of a set of measures based on proactive risk management is the key to its recovery. At the same time, the concept of national management of integrated risks of air transport was used, the aspects of which are covered in works [1-6].

#### **Threats to the system of airports and airfields of Ukraine:**

- Air and ground strikes on buildings, infrastructure and equipment of airports and airfields.
- Closure of airspace for civil aviation flights from airports and airfields. Closing the airspace of Ukraine for civil aviation flights on the first day of the war is a necessary and effective measure to protect civil aviation in the conditions of military operations. At the same time, the operational activity of the system of airports and airfields of Ukraine is currently impossible.

Therefore, the above-mentioned threats led to an increase in the **Vulnerability of the system of airports and airfields of Ukraine**, which is expressed as:

- Vulnerability of buildings, infrastructure and equipment of airports and airfields in conditions of direct hostilities.
- Impossibility of carrying out commercial air transport activities in the system of airports and airfields of Ukraine.

The totality of the mentioned threats and vulnerabilities leads to the following **Consequences for the system of airports and airfields of Ukraine:**

- Buildings, runways, taxiways, platforms and equipment of a number of airports and airfields were damaged to varying degrees, and as of autumn 2022, they continue to be at risk of air and ground strikes.
- Suspension of commercial air transport activities by the system of airports and airfields of Ukraine.

The main **negative results of the above were the decrease in the level of efficiency and safety of the system of airports and airfields of Ukraine**, which consists of:

- Problems with maintaining the national agreed level of aviation safety.
- Significant destruction of buildings, infrastructure and equipment of airports and airfields of Ukraine.
- Possibilities of bankruptcy of the national system of airports and airfields of Ukraine.

We offer to consider **optimistic, realistic and pessimistic strategic scenarios of post-war recovery and sustainable development of the system of airports and airfields of Ukraine**.

**The optimistic scenario includes:**

- Updating the provisions of the State target program for the development of airports for the period until 2023 (Resolution of the Cabinet of Ministers of Ukraine No. 126 of February 24, 2016) regarding the conditions of post-war recovery and sustainable development.
- Development of mechanisms for the support of the system of airports and airfields in the post-war period by the state.
- Stopping the destruction of buildings, infrastructure and equipment of airports and airfields
- Complex reconstruction of the system of airports and airfields of Ukraine
- Gradual exit to the level of profitability of the system of airports and airfields in the second year after the war

**The realistic scenario includes:**

- Updating the provisions of the State target program for the development of airports for the period until 2023 (Resolution of the Cabinet of Ministers of Ukraine No. 126 of February 24, 2016) regarding the conditions of post-war recovery and sustainable development.
- Development of mechanisms for partial support of airports and airfields in the post-war period by the state.
- Minor further damage to buildings, infrastructure and equipment of airports and airfields as a result of military operations
- Step-by-step reconstruction of the system of airports and airfields of Ukraine, first of all, international hub airports and gradually regional airports/airfields.
- Gradual return to the level of profitability of the system of airports and airfields of Ukraine in the third year after the war

**The pessimistic scenario includes:**

- Updating the provisions of the State target program for the development of airports for the period until 2023 (Resolution of the Cabinet of Ministers of Ukraine No. 126 of February 24, 2016) regarding the conditions of post-war recovery and sustainable development.

- Impossibility of implementation of support mechanisms for the system of airports and airfields in the post-war period by the state due to a significant decrease in GNP.
- Significant further destruction and damage to buildings, infrastructure and equipment of airports and airfields as a result of military operations.
- Partial reconstruction of the system of airports and airfields of Ukraine, primarily international hub airports, with a significant delay in regional airports/airfields.
- Gradual return to the level of profitability of the system of airports and airfields of Ukraine for the fifth year after the war

### Conclusions

The post-war reconstruction of Ukraine is an opportunity not only to rebuild, but also fundamentally develop the air transport system of Ukraine based on the Concept of national management of integrated risks of air transport. Combining the efforts of scientists, industry specialists, experts of international aviation organizations can become a reliable basis for further sustainable development of the industry.

### References

1. Yu Kharazishvili, D Bugayko *et al.* Strategizing for sustainable development of transport systems in the safety dimension *IOP Conf. Ser.: Earth Environ. Sci.* 915 012025
2. Bugayko D., Kharazishvili Yu, Liashenko V., Kwilinski A. Systemic approach to determining the safety of sustainable development of air transport: indicators, level, threats. *Journal of European Economy*. [Ternopil], 2021. Vol. 20. № 1 (76). January – March. P. 146-182.
3. Bugayko D., Ierkovska Y. Institutional Measures of Air Transport Safety Strategic Management at the Level of State Regulation. Intellectualization of Logistics and Supply Chain Management. The electronic scientifically and practical journal v.9 (2021). P.6 – 19. ISSN 2708 -3195. <https://smart-scm.org>.
4. Bugayko D., Ierkovska Y., Aliev F., Bahrii M. The Concept of National Integrated Risk Management of Aviation Transport of Ukraine. Intellectualization of Logistics and Supply Chain Management. The electronic scientifically and practical journal v.10 (2021). P.6 – 18. ISSN 2708-3195 <https://smart-scm.org>.
5. Bugayko, D. O., A. O. Antonova, and Zamiar Zenon. "Identification of Air Transport Ecological Component Level in the Context of Ensuring Sustainable Development of the National Economy." *Intellectualization of Logistics and Supply Chain Management* 3 (2020): 38-53.
6. Харазішвілі Ю.М., Бугайко Д.О., Ляшенко В.І. Сталій розвиток авіаційного транспорту України: стратегічні сценарії та інституційний супровід: монографія / за ред. Ю.М. Харазішвілі; НАН України, Ін-т економіки пром-сті. Київ, 2022. 276 с. ISBN 978-966-02-9958-0 (електронне видання).