



## **One health approach to preventing new pandemics in the scope of food security and safety**

**Main author:** Susana Viegas (NOVA National School of Public Health)

**Co-authors:** Susana Viegas, Carla Martins, Gabriela Moniz João Pargana, Susana Marques, Catarina Resende, Ana Paula Arez, Nadia Ceratto, Carla Viegas

### **INTRODUCTION**

The One Health approach integrates human, animal, and plant health, as well as the health of their shared environment, informing and supporting a multidisciplinary and holistic approach that integrates monitoring, planning, and evaluating to optimise co-benefits and outcomes for public health. The conservation of nature and biodiversity contributes to preventing new pandemics and to promoting well-being. Although most pandemics originate from diverse microbes carried by animal hosts, their emergence is entirely driven by human activities. Indeed, the causes of pandemics are the same global environmental changes that cause biodiversity loss and climate change, namely deforestation, land- and sea-use change, agricultural expansion and intensification, and wildlife trade and consumption. Unsustainable exploitation of the environment increases the risk of spillover leading to almost all the known pandemics. Strengthening health systems and increasing epidemiological surveillance of wild and domesticated animals with a focus on ‘highly probable pathogen reservoirs’, as well as of humans, using modern science-based technologies, may help to predict and detect incidents and spillovers.

### **METHODOLOGY**

To date, the most remarkable global commitment to safeguard species has been Aichi Targets of the Strategic Plan for Biodiversity 2011–2020 (the ‘Strategic Plan’) under the Convention on Biological Diversity (CBD). The Post-2020 Global Biodiversity Framework (Post-2020 GBF) is a stepping-stone towards achieving the CBD’s 2050 Vision of ‘Living in harmony with nature’. A detailed analysis regarding how the targets in the updated zero draft of the Post-2020 Global Biodiversity Framework can contribute to improving the implementation of the One Health was performed, aiming to support the ambition and commitment needed. Additionally, a list of indicators was proposed to guarantee a suitable monitoring framework and to adequately incorporate the value of biodiversity for health, well-being, and more specifically to contribute to decreasing the risk of new pandemics. This work provides a systematic overview of how conserving nature and biodiversity can

contribute to prevent new pandemics and to promote well-being, and highlights the importance of preventing biodiversity loss for humans.

## RESULTS

The analysis performed yields a detailed description of how each target of the Post-2020 GBF can influence human health and well-being and which actions under each target should be taken to promote health. For each target it is briefly explained how it can influence human health, including food security and food safety, the actions that should be taken and the possible indicators to be used to monitor their efficacy. Food security/safety is mentioned in almost all the targets, with reference to the underlying links with biodiversity and how biodiversity is needed for food security, a healthy diet and sustainable livelihood. The link with the One Health approach is also emphasised and how it can address the common drivers of biodiversity loss, disease risk and negative health outcomes by reducing the loss and degradation of biodiversity, enhancing human health and well-being, and preventing future pandemics.

## DISCUSSION

There is a need to mainstream biodiversity in all health sectors (including food security and safety) and to reflect their links into national policies, strategies, programmes, and accounts. In this scope, the UNEP and the International Livestock Research Institute (2020) have already proposed ten science-based policy recommendations, where food systems/production are mentioned, namely: i) Develop effective means of monitoring and regulating practices associated with zoonotic disease, including food systems from farm to fork and improving sanitary measures; ii) Include health considerations in incentives for (sustainable) food systems, including wildlife source foods; iii) Identify key drivers of emerging diseases in intensive animal production and smallholder production and iv) support integrated management of landscapes and seascapes that sustainably enhance co-existence of agriculture and wildlife, including investing in sustainable methods of food production that diminish pollution while reducing the risk of zoonotic disease.

Following this, the analysis we present can support the implementation of policies that will bring benefits to both health and sustainability.