Submission from the Republic of Moldova for a new and emerging issue for the future programme of work of the CBD Convention: Open-air use of nucleic acids and proteins that may provide risks to biodiversity

In the light of the latest findings of new applications of biotechnologies that could exceed the impact of effects resulting from admixture and gene drives in the environment and uncertain scientific knowledge existed to its effective use, the Republic of Moldova would like to address this submission to the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) requesting to evaluate the open-air use of nucleic acids and proteins to alter traits, genes or other kinds of genetic material and to consider it as a new and emerging issue for the future programme of work of the CBD Convention.

When applied specifically to the use of nucleic acids, the new open air transformation technologies go to exogenous, topical, spray-based and surface distribution into environment. The technology can be used to cause RNA molecules to penetrate tissues and cells using formulations that can be aerosolised or held in liquid suspensions. The cosmetics industry may cause penetration of these formations to the human skin and transport them to the cell nucleus. It is already possible, for example, to use them to penetrate organisms with a cargo composed of the gene editing nuclease Cas9 and its guide RNA molecule.

The exogenously applied dsRNA is in an emerging class of biocide for pest management in agriculture and may have important transboundary effects to biodiversity and should have a regulatory approach for monitoring and control of possible risks to the environment and human health, in special having effects of non-target toxicities and affecting varieties of crops in agriculture.

The needs for emergency responses under the Articles 7, 8 and 14(c, d and e) of the Convention to prevent a damage of the open-air use of nucleic acids and proteins to alter traits, genes or other kinds of genetic material can easily result in the unintentional crossing of national borders, are especially relevant.

The thematic programmes work and/or cross-cutting issue that could contribute to the resolution of the issue include, inter alia, the following:

- Agricultural biodiversity
- Impact assessment
- Identification, monitoring, indicators and assessments

The issue of open environmental transformation technologies using nucleic acids and/or proteins as mutagens is also relevant to the work of the Cartagena Protocol on Biosafety. This could include ongoing work by the Ad Hoc Technical Expert Group (AHTEG) on Risk Assessment and Risk Management. In addition, the socio-economic impacts of the new technologies, particularly effects on intellectual property rights, could be considered alongside work in the AHTEG on Socioeconomic Considerations.