3rd European Technology Assessment Conference

MAY 17 TH – 19 TH 2017, CORK, IRELAND

CALL for PAPERS

The extensive potential of gene drives based on the newly developed CRISPR-method – a challenge for Prospective Technology Assessment

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Session Duration:	90 plus 60 minutes
Keywords:	Gene Drive, CRISPR/Cas9, genetic biocontrol, prospective technology assessment, late modern technology
Word Count	Max. 400 words

A new quality has emerged with regard to the release of genetically modified organisms: Approaches that are currently under investigation are intentionally designed to spread modified DNA into native populations. Manipulating the fate of entire populations of sexually reproducing species can be greatly accelerated by so-called gene drives: Engineered selfish genetic elements designed to operate autonomously in nature. Gene drives have the potential to overcome the natural pattern of heredity and are therefore also called 'mutagenic chain reaction'.

In particular gene drives based on the CRISPR/Cas9 tool, a rather precise "gene-scissor" are currently developed towards many applications. One is disease management, where transmitting species like mosquitoes are targeted so that new traits spread rapidly in natural populations including the potential to drive populations towards extinction. But once released, particularly insects are difficult to control.

An early-stage assessment of gene drives is essential in order to get a deeper understanding of risks and chances. The intentionally uncontrolled spread of engineered selfish genetic elements in wild populations represents a new stage and depth of the power for intervention into ecosystems and hence for the power to drive ecosystems beyond their tipping points. And, in contrast to the stability and controllability of the classic-modern type of technology, gene drives represent a prominent example of an instability-based "late modern technology", whose evolutionary, self-organizational, and non-linear features could lead to intrinsic limits in respect to predictability, testability, and controllability.

The aim of the session is (a) to analyze the impact of this novel method of advanced biotechnology in particular with respect to infectious diseases like malaria, agricultural usage like measures against crop pests, or the eradication of invasive species, (b) to consider the classification as a "late-modern technology", (c) to introduce the assessment needs related to gene drive technology and present first results of a prospective technology assessment. By this the session will focus on technological aspects as well as on regulatory implications and furthermore discuss also the normative dimension of steering the evolution of live on earth.

In this regard we would like to launch an open call for papers. Accepted papers will be circulated beforehand to all participants. All accepted papers can be briefly presented in the session (5 to 10 minutes each) and will be discussed with the session´s audience.

In a second part of the session the presented scientific findings will be discussed with invited stakeholders and policymakers.

Further information:
Please send your proposal directly to the sessions' organizers:

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