

## Research needs expressed in the Decisions of the Conference of the Parties to the Convention on Biological Diversity: Cross-Cutting Issue: New and Emerging Issues, Synthetic Biology

The consolidated *modus operandi* of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) lists among its functions that SBSTTA should *inter alia* identify new and emerging issues relating to the conservation and sustainable use of biodiversity. One topic under discussion is synthetic biology (<http://www.cbd.int/emerging/>).

The cited Decisions that express research needs are XII/24, XIII/17, XIV/19 and XIV/20, also checked was Decision XIV/31.

### Direct research needs

Decision	Paragraph	Chapeau / Heading	Text	Source <a href="http://www.cbd.int/decisions/">http://www.cbd.int/decisions/</a>
XII/24	Para 3	The Conference of the Parties	<i>Urges</i> Parties and <i>invites</i> other Governments, d) To <b>carry out scientific assessments concerning organisms, components and products resulting from synthetic biology techniques with regard to potential effects on the conservation and sustainable use of biodiversity</b> , taking into account risks to human health and addressing, as appropriate, and according to national and/or regional legislation, other issues such as food security and socioeconomic considerations e) To <b>encourage the provision of funding for research into synthetic biology risk assessment methodologies and into the positive and negative impacts of synthetic biology on the conservation and sustainable use of biodiversity, and to promote interdisciplinary research</b> that includes related socioeconomic considerations;	<a href="http://www.cbd.int/decisions/doc/?meeting=cop-12">doc/?meeting=cop-12</a>
XIII/17	Para 9	The Conference of the Parties	<i>Encourages</i> Parties and <i>invites</i> other Governments and relevant organizations a) To conduct research on the benefits and adverse effects of organisms, components and products of synthetic biology on biodiversity, with a view to filling knowledge gaps and identifying how those effects relate to the objectives of the Convention and its Protocols;	<a href="http://www.cbd.int/decisions/cop/?m=cop-13">decisions/cop/?m=cop-13</a>
XIV/19	Para 9	The Conference	<i>Recognizes</i> that, as there could be potential adverse effects arising from	<a href="http://www.cbd.int/decisions/cop/?m=cop-14">decisions/cop/?m=cop-14</a>

		of the Parties	organisms containing engineered gene drives, <b>before these organisms are considered for release into the environment, research and analysis are needed</b> , and specific guidance may be useful, <sup>1</sup> to support case-by-case risk assessment;	
XIV/19	Para 11	The Conference of the Parties	<i>Calls upon</i> Parties and other Governments, taking into account the current uncertainties regarding engineered gene drives, to apply a precautionary approach, in accordance with the objectives of the Convention, and <i>also calls</i> upon Parties and other Governments to <b>only consider introducing organisms containing engineered gene drives into the environment</b> , including for experimental releases and research and development purposes, <b>when</b> : a) <b>Scientifically sound case-by-case risk assessments have been carried out</b> ;	<a href="http://www.cbd.int/decisions/cop/?m=cop-14">decisions/cop/?m=cop-14</a>

#### Indirect research needs

Decision	Paragraph	Chapeau / Heading	Text	Source <a href="http://www.cbd.int/decisions/">http://www.cbd.int/decisions/</a>
XII/24	Para 3	The Conference of the Parties	<i>Urges</i> Parties and <i>invites</i> other Governments, a) To establish, or have in place, effective risk assessment and management procedures and/or regulatory systems to regulate environmental release of any organisms, components or products resulting from synthetic biology techniques;	<a href="http://www.cbd.int/doc/?meeting=cop-12">doc/?meeting=cop-12</a>
XIII/17	Para 6	The Conference of the Parties	<i>Notes</i> that the general principles and methodologies for risk assessment under the Cartagena Protocol and existing biosafety frameworks provide a good basis for risk assessment regarding living organisms developed through current applications of synthetic biology, or that are currently in the early stages of research and development, but such methodologies may need to be updated and adapted for current and future developments and applications of synthetic biology;	<a href="http://www.cbd.int/decisions/cop/?m=cop-13">decisions/cop/?m=cop-13</a>
XIII/17	Para 7	The Conference of the Parties	<i>Also notes</i> that it is not clear, given the current state of knowledge, whether or not some organisms of synthetic biology, which are currently in the early stages of research and development, would fall under the	<a href="http://www.cbd.int/decisions/cop/?m=cop-13">decisions/cop/?m=cop-13</a>

<sup>1</sup>The Subsidiary Body on Scientific, Technical and Technological Advice has recommended that the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety (recommendation 22/2) consider the need for specific guidance on risk assessment of living modified organisms containing engineered gene drives at its tenth meeting.

			definition of living modified organisms under the Cartagena Protocol, and <i>further notes</i> that there are cases in which there may be no consensus on whether the result of a synthetic biology application is “living” or not;	
XIV/19	Para 12	The Conference of the Parties	<i>Calls upon</i> Parties, other Governments and <b>relevant organizations</b> to continue to <b>develop</b> or implement, as appropriate, <b>measures to prevent or minimize potential adverse effects arising from exposing the environment to organisms, components and products of synthetic biology in contained use, including measures for detection, identification and monitoring</b> , in accordance with domestic circumstances or internationally agreed guidelines, as appropriate, with special consideration to the centres of origin and genetic diversity;	<a href="#">decisions/cop/?m=cop-14</a>
XIV/20	Para 1	The Conference of the Parties	<i>Recognizes</i> the importance of digital sequence information on genetic resources for the three objectives of the Convention which are mutually supportive, although <b>further work is needed to provide conceptual clarity on digital sequence information on genetic resources</b> ;	<a href="#">decisions/cop/?m=cop-14</a>
XIV/20	Para	The Conference of the Parties	<i>Recognizes</i> also that further <b>capacity to access, use, generate and analyse digital sequence information on genetic resources is needed</b> in many countries, and <i>encourages</i> Parties, other Governments and <b>relevant organizations</b> to support capacity-building and technology transfer, as appropriate, <b>to assist in the access, use, generation and analysis of digital sequence information on genetic resources</b> for the conservation and sustainable use of biodiversity and benefit-sharing	<a href="#">decisions/cop/?m=cop-14</a>