**template for Peer Review comments**

**Technical series on synthetic biology**

|  |  |  |  |
| --- | --- | --- | --- |
| **Contact information** | | | |
| **Surname:** | | |  |
|  | | |  |
| **Given Name:** | | |  |
|  | | |  |
| **Government** | | | Thailand, Ministry of Higher Education, Science, Research and Innovation |
| **(if applicable):** | | |  |
|  | | |  |
| **Organization:** | | | Ministry of Higher Education, Science, Research and Innovation |
|  | | |  |
| **E-mail:** | | | biosafety@biotec.or.th |
|  | | |  |
| **Comments on the Technical Series on Synthetic Biology** | | | |
| **Page #** | **Line #** | **Comment** | |
| 8 | 2-5 | The provided definition of synthetic biology is pretty broad. While there is still no single definition of this field, it might be useful to add some clarification regarding the differences between synthetic biology, genetic engineering and biotechnology (if there is any). | |
| 9 | 40 | … to take pressure “off” of wild populations,… | |
| 10 | 4-5 | Given a vague definition of synthetic biology, the ranges of estimated synbio market values and growth rates vary widely depending on reference sources. The authors should provide more detail on where these numbers come from. | |
| 12 | 23 | Misplaced sentence | |
| 19 | 33 | As the authors mentioned, “gene drive” is not a single technology but rather a suit of approaches, each of which has different levels of risk and capability. Thus, it is worth getting into a bit more detail on the range of existing approaches and ongoing discussion about how to utilize and regulate each of them. | |
| 41 | 38 | Risk & benefit assessment of using gene drives to target invasive alien species (IAS) should be done in the context of other countermeasure approaches (such as the use of chemicals or ecological manipulation approaches) as well as comparing to the risk of benefit of taking no action. There should be more discussion these topics. | |
| 47 | 40-41 | It would be nice to elaborate on public opinion / consumer perceptions regarding bio-compounds derived from nature vs synthetic chemistry vs synthetic biology approaches. | |
| 48 | 37-39 | We would love to see more statistics and trends regarding public acceptance of different kinds of synthetic biology technologies and products. | |
| 55 | 20-21 | The real harms inflicted by biohackers might be small (given their limited proficiency/experience/resources). However, these activities could do serious damages on the public perception on the scientific community and the field in general. How have the policymaker, academia and industry planned to prevent/mitigate that? | |
| 64 | 28-29 | It is still unclear how we might distinguish between natural mutations that happen spontaneously vs mutation directed by genome editing (especially SDN-1). | |
| 94 | 30 | A number of international rules, regulatory practices, processes and initiatives have emerged recently. It is confusing for general audience (including myself) to what extent these rules and regulations have been enforced and whether they have been in conflict with one another. | |
| 129 | 24-28 | Some has predicted that synthetic biology will become more and more like information science, i.e., the cost and time required for building & testing biological systems will soon become irrelevant as the actual ‘innovative’ parts of the process are the learning and designing. Intellectual property frameworks previously used in the field of software engineering might provide insightful lessons on how we shall manage IP in future synthetic biology. | |

Please submit your comments to [secretariat@cbd.int](mailto:secretariat@cbd.int).