Reviewer’s report

Title: Informed consent and community engagement in open field research: lessons for gene drive science

Version: 0 Date: 03 Jul 2018

Reviewer: Michael Parker

Reviewer's report:

Thank you for inviting me to review this interesting paper, which investigates the roles of informed consent and community engagement in addressing the ethical aspects of open field research with gene drives. The paper begins with an analysis of the relevant guidelines - Helsinki, CIOMS, and WHO - and identifies ambiguities in them with respect to the roles of consent in field studies. In the light of this, the paper looks at models of consent and engagement adopted by five different but analogous studies and considers the extent to which these approaches might be translatable into the context of open field research with gene drives. Two models - those adopted in weather modification and in political science - are rejected. Three other models - in dengue field trials, in cluster randomised trails, and in pragmatic clinical trials - are recommended as more appropriate.

I found the paper interesting. However, I do have a number of questions about it.

1. In the background section on page 2, reference is made to the number of deaths from vector-borne diseases between the 17th century and the early 20th century. It is unclear why this period was chosen or what has happened since then. What is the current situation?
2. Again in the background section, an argument is made that because there was a critical reaction to a study in Florida this means that important questions are raised more broadly about 'what is owed to people who may not consent to such research'. It isn't clear why this was an implication.
3. On page 2 the paper states that the two main guidelines relating to global health are the Declaration of Helsinki and the CIOMS guidelines. However, these guidelines are not referred to again. After that point all attention shifts to the WHO. The rationale for this shift isn't clear.
4. On page 4 the argument is made that because households rather than individuals are going to be identified this means that there is no need for individual consent only 'heads of households' should consent. No justification is provided for this.
5. On page 5, the link between the discussion of the WHO guidelines and the rationale for the shift to exploring the five analogous approaches to consent/engagement is not very clearly set out. It would help the reader if this link could be explained more fully. Why are we being invited to consider these examples? Is it primarily to show that such approaches have been taken or is it to make a stronger normative claim about them?
6. I very much enjoyed reading about the five case studies. However, I was left unclear about the rationale for the decision to reject or recommend them as models for the gene drive context. Are they being judged on ethical or other grounds? In the boxes at the end of each of the case
studies statements are made that approaches are 'not recommended' etc. but the arguments in favour/ against this are not set out. What are the reasons? It is not clear what the ethical arguments are for rejecting or recommending them.

7. The above comment applies to some extent to the paper as a whole. Whilst the individual sections are interesting, the links between them and the overall narrative/thesis is not always clear. This means that the paper is rather disconnected for the reader at times.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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