



Gene Drive Research Forum

Considering the Case of Gene Drive Technologies through Social Science Theories on Stakeholder Engagement

Organizers: [GeneConvene Global Collaborative](#)
[Genetic Biocontrol of Invasive Rodents Partnership](#)

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Overview

The Gene Drive Research Forum hosted a series of virtual panel discussions designed to provide an opportunity for social scientists, researchers and developers, funders, and other stakeholders interested in gene drive technologies to explore social science questions on stakeholder engagement. Over the course of five sessions, the panelists considered a variety of topics related to stakeholder engagement, including controversy and challenges; risk assessment; field trial site selection; the role of consensus; and independence in funding and practices.

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EXECUTIVE SUMMARY OF PANEL DISCUSSIONS

Panel 1: Controversy and challenges

Stakeholder engagement in research is widely cited as a process full of potential, and yet the practice of engagement can be mired in controversy and challenges. The panelists focused on identifying and successfully working through controversy in stakeholder engagement with the aim of creating a shared understanding of research goals and informing more robust decision-making. As one panelist noted, controversy should not be feared as it is a natural by-product of working with different groups of people who each have their own culture, knowledge, and experiences.

Key themes from this discussion:

- Incorporate stakeholder engagement as part of the research design process to support a process of co-development.
- Create and design fundamentally deliberative spaces for engagement.
- Build relationships through stakeholder engagement to work through controversy.

Panel 2: Risk assessment

The panelists considered the interface of risk assessment and stakeholder engagement with a focus on integrating the diversity in expertise, perspective, power, and values of different stakeholders into the science and process of conducting risk assessments. The benefits and challenges of including stakeholder values and concerns in a process conventionally considered the scope of scientists were discussed. There was broad consensus that much work remains to be done in identifying frameworks and best practices that meaningfully incorporate stakeholder engagement into risk assessment.

Key themes from this discussion:

- Incorporating stakeholder engagement into risk assessment requires the integration of science and values.
- A combination of qualitative and quantitative methods in risk assessment removes barriers to stakeholder engagement and can advance broader engagement.
- Frameworks for incorporating stakeholder engagement into risk assessment, governance and decision making are needed.

Panel 3: Field testing site selection

When selecting field testing sites for research and new technologies, researchers and developers prioritize safety and efficacy parameters, however they may not adequately consider the social factors inherent in conducting research within communities. This panel discussion focused on incorporating stakeholder engagement into the site selection process in order to emphasize the social, community, and political criteria that can inform a more ethical and just approach. Topics considered included consent, addressing power imbalances, and incorporating stakeholders into decision-making.

Key themes from this discussion:

- Stakeholder engagement can incorporate social and ethical criteria into the framework used for field testing site selection.
- Gene drive necessitates an approach to consent that is scaled to the community level, not simply a collection of consent by individuals.
- Power and organizational hierarchies need to be considered in field trial site selection and deployment.

Panel 4: The role of consensus

Panelists considered how stakeholder engagement can play a role in building consensus in the context of developing and deploying new technologies. The conversation focused on the relationships among consensus, agreement, and decision-making with an emphasis on the goal of creating shared understanding. One panelist questioned how to distinguish between engagement as collaboration and engagement as persuasion, an important tension for technology developers and funders.

Key themes from this discussion:

- Early integration of consensus processes into decision-making is important and does not imply the need for unanimous agreement to take any action.
- Stakeholder engagement can be used to address both tangible and intangible goals of the community when building consensus.
- Successful consensus building is a transparent process that is informative, values-laden, and inclusive of dissenting and marginalized voices.

Panel 5: Independence in funding and practices

The final panel discussion in the series explored the independence in funding and practices necessary for effective stakeholder engagement. The panelists considered various topics, including the roles of third-party engagement practitioners, academia, and funding organizations. The conversation emphasized how to effectively combine academic theories and frameworks with the innovation and work of on-the-ground engagement specialists to create transformational engagement.

Key themes from this discussion:

- Transformative stakeholder engagement requires integrating academic theories and frameworks with practical, on-the-ground experience.
- While there is no such thing as a “neutral” engagement, funding for third-party facilitators can help ensure a fair, legitimate, transparent process built on respect and trust.
- Current models of funding need to evolve to support transformative and systemic change through stakeholder engagement.

STAKEHOLDER ENGAGEMENT AND CONTROVERSY: LESSONS FROM THE GROUND

Summary of Panel 1 Discussion, February 9, 2021

Moderator



Jim Lavery, Ph.D.
Conrad N. Hilton Chair in Global Health Ethics
Professor in the Hubert Department of Global Health
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Panelists



Guilherme Costa, Ph.D.
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Stakeholder engagement is often lauded as an important component of research, however, the process of engagement is not without its challenges. The aim of this round-table discussion was to identify insights related to controversy and navigating pitfalls in stakeholder engagement. The conversation focused on the benefits and difficulties of incorporating stakeholder engagement into the research design process, making space for deliberation, and building relationships to work through controversy.

Key Theme 1: Incorporate stakeholder engagement as part of the research design process to support a process of co-development.

Researchers and practitioners need to move beyond a goal of obtaining consent, or a strategy of persuasion, to a more impactful process of engagement with various stakeholder groups. The panelists highlighted key questions and ideas focused on more effective engagement, including what it means to “start early,” an ill-defined term often used to indicate when a research project should start its engagement activities. When engagement is conducted “early” in the research and design process, the varied interests and ideas of a community can be used to inform research design. Léa Paré Toé articulated that although potentially challenging, researchers must appropriately explain their complex, scientific work to the community. This may include clearly explaining the rationale for engagement work being conducted with the community. While sharing information, they must also hold space for collaboration and for the community to bring their own ideas and questions.

In addition, engagement activities allow the early identification of any research factors (e.g., process, techniques, products) that may be controversial. Incorporating stakeholder engagement in the research design process creates opportunities to work through anticipated potential and/or unanticipated controversies regarding research activities. Referencing her experience with stakeholder engagement related to preventing the extinction of species on islands in Latin America, Patricia Leon identified lessons learned from facilitated dialogue aimed at understanding the varied positions of the community stakeholders: “If you focus on the interests behind the positions themselves, you are able to offer alternatives that address the different interests of the community.” In this case, gaining clarity around the sources of the community’s objections to the researchers’ plan to eradicate culturally important goats allowed the stakeholders to offer solutions to the community.

Communities can contribute important knowledge to the scientific process when researchers provide mechanisms for meaningful interactions with stakeholders. The panelists agreed that the engagement process should not be a one-way communication. Rather, changing the structure of dialogues can enable a process of co-design/development, where the scientists and the project’s stakeholders come to understand different perspectives and adapt the research plans accordingly.

Key Theme 2: Create and design fundamentally deliberative spaces.

Making space for deliberation supports a more effective and ethical research design process and builds connections between community knowledge and scientific knowledge. This includes finding the right language to support effective dialogue. Guilherme Costa noted that controversy and disagreement need not be feared or avoided. They are natural outcomes from the introduction of new ideas, processes, and investigative products that require listening and non-judgement on the part of all researchers and stakeholders. In order to design a research process that will be acceptable for each community, it is essential to listen to the community’s voiced concerns and to understand distinct local, political cultures. When the community has an opportunity to raise questions, the researchers can deliver answers and address uncertainties. Furthermore, agreement is not necessarily a goal of stakeholder engagement activities. Rather these deliberative spaces can serve to underpin a mutually beneficial design process and more robust ethical considerations. In order to engage responsibly, researchers must ask themselves important questions, including the acknowledgement of landscapes of controversy that may encompass power differentials and problematic histories.

The panelists noted that a third party, impartial, independent facilitator may be required to ensure a balanced dialogue among the different stakeholder groups where there are power, information, or organizational differences. A project-independent facilitator can also work directly with the community to identify their interests, address differences of opinion and find some internal agreement that will make subsequent engagement easier. Engagement activities may require making space for all relevant stakeholders to deliberate, including government agencies. This is especially important when creating transparency and addressing the misperceptions, fear and skepticism that can occur when a new technology is being brought forth by the government. Improving engagement with the community enables the government to more effectively collaborate and offer resources.

Key Theme 3: Build relationships through stakeholder engagement to work through controversy.

Building relationships among stakeholder groups can lead to a more effective engagement process. Patricia Leon noted that a general measure of a successful engagement is the building of relationships through the process. If researchers or others are able to work collaboratively with local partners, this is a signal of a good engagement process. Again, it was noted that agreement is not always a signal of success. The relationship and how you get to an agreement can be more important than the actual agreement when it comes to implementing the research process. Jim Lavery stated “I think we tend to gloss over the concept of relationships because it sounds a little soft and social science-y. But of course we know from every industry in the world that relationships are what drive success. Figuring out how to privilege relationships, and how to build the right kind of context for

finding them and enabling them, is really important.” When referring to his experience working with the Haudenosaunee Environmental Task Force, Jason Delborne highlighted the role of relationship building and how it can open discussion around the scientific problem or issue. In this deliberative work, the process of relationship building created an opening for the community to be involved and even defined a new problem originating from the community. Incorporating the community’s needs reframed the scientific process and created a kind of reciprocity.

Key questions

How do we create a shared understanding within the communities about the goals of the research project?

What is the purpose of engagement with other sets of stakeholders, such as policy makers, who may have broader goals and mandates?

Who determines whether a research project’s engagement activities were done well?

When in the research process should stakeholder engagement activities begin (discovery, research, development, etc.)?

STAKEHOLDER ENGAGEMENT AND RISK ASSESSMENT: LESSONS FOR GENE DRIVE?

Summary of Panel 2 Discussion, March 16, 2021

Moderator



Sujatha Raman, Ph.D.
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Panelists



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Keith Hayes, Ph.D.
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Gene drive technologies present an important site of experimentation for considering the connections between risk assessment and stakeholder engagement, especially as research moves from laboratories to field trials. Citing the historical tensions between science and policy, facts and values, experts and laypersons, the panelists explored how to move past the separation of risk assessment and stakeholder engagement that has persisted over the past 50 years. Ongoing debates about genetically engineered organisms and potentially irreversible impacts on social and ecological landscapes make this integration highly relevant.

Key Theme 1: Incorporating stakeholder engagement into risk assessment requires the integration of science and values.

The panelists investigated how the interrelation between science and values, emotion and reason, can enhance the work of scientists as they aim to understand the broader implications of gene drive technologies. Risk assessment is often conceptualized as a primarily factual process carried out by 'scientists'. On the other hand, stakeholder engagement is seen as a separate process and left to 'non-scientists'. This stems in part from the misconception that risk assessment relies on reason, while stakeholder engagement relies on emotion. The panelists discussed the interface of risk assessment and stakeholder engagement with a focus on clarifying the connections between processes of reason and sources of emotion.

It was noted that the value judgments in risk assessment are not always recognized by the scientific community. Among the panelists, however, there was broad consensus that those value judgements are an inherent part of interpreting risk and that the values identified for the risk assessment and subsequent management should reflect the values and concerns of the stakeholders who bear the risk. This is an obvious place for engagement early in the risk assessment. Adam Kokotovich made the case that how one views emerging technologies such as gene drive, and under what conditions they should be used, depends upon your worldview, your lived experience, your values, and how you relate to nature and technology. “You can use engagement to help recognize or identify where those value judgments are, reflect upon what’s at stake, and the different ways that we can make those value judgments.” By involving stakeholders in the risk assessment process, researchers are incorporating this diversity in expertise, perspective, power, and values to gain a broader picture of the community context in which the science takes place.

Key Theme 2: A combination of qualitative and quantitative methods in risk assessment removes barriers to stakeholder engagement and can advance broader engagement.

The 2016 National Academies of Sciences, Engineering, and Medicine report, *Gene Drives on the Horizon*, defines risk assessment as quantitative and probabilistic. However, the panelists noted that a purely quantitative approach presents barriers to stakeholder engagement and argued that for certain components of risk assessment, qualitative and quantitative approaches can be used together to strengthen the benefits of engagement. Incorporating qualitative methods can be useful for exploring what people care about and understanding how their values and worldview inform their risk perceptions and judgements. However, evaluating how much harm or impact stakeholders are willing to accept on a particular value requires quantitative methods. During the move to a more quantitative and probabilistic approach in risk calculations, it becomes harder for stakeholders to participate as the level of expertise required for the process becomes higher. Keith Hayes, a senior research scientist, put it this way: “You can’t measure just ‘a little bit’...until those terms are quantified and the predictions of the risk assessment are lined up with those quantitative definitions, I can’t say whether (a) the predictions are any good or (b) whether they actually meet the risk assessment’s criteria that the community has expressed.” In the final stages of the process, stakeholders can again play a role in validating risk perceptions, monitoring, and looking for outcomes.

Among the panelists, there was some disagreement over the increased use of modeling in gene drive research. While some worry that the complexity and inaccessibility of models create barriers to meaningful stakeholder engagement, others suggest that the possible scenarios demonstrated by modeling can actually be used to open up engagement with communities. Whereas stakeholder engagement is often quite broad, quantitative methods such as modeling can serve as a means of moving towards specificity as social scientists explore complex questions. As Sam Weiss Evans explained, “When things get quantified things become very specific, and that specificity is an ability to create a specific site for working through competing framings of what do we care about, what’s important in these cases, who should have a say, and what constitutes justice and fairness, as much as a harm to the environment?”

Key Theme 3: Frameworks for incorporating stakeholder engagement into risk assessment, governance and decision making are needed.

The establishment of formal and informal risk assessment guidelines will influence what form all future risk assessment takes, and is therefore another important site for engagement. Over the last few years, a framework for risk assessment has started to be mapped out through informal meetings, workshops, and other activities. Adam Kokotovich stated, “If we don’t incorporate engagement into these risk assessment guidelines taking place now, that’s going to severely limit decision making in risk assessments into the future”. Furthermore, the outcomes of the risk assessment are based on how that process was designed and who was involved. And in the course of technology development and deployment, risk assessment decisions will strongly influence whether gene drives move forward. Sarah Hartley noted, “There is a reluctance to acknowledge the role that risk assessment

plays in the overall decision about whether to release a gene drive organism or not. And if we recognize the importance of that it would justify the need to open up risk assessment more.”

Due to built-in statutory limitations and current norms, there is not a lot of existing opportunity for impactful engagement in decision making and governance. As one panelist framed it, if we care about making more just and trusted decisions, it makes sense to incorporate engagement activities. The role risk assessment plays in decision making needs to be recognized, and this conversation cannot be advanced without thinking about power. Sarah Hartley said, “We try to depoliticize risk, and regulations are seen to be these very scientific, apolitical spaces. But I think by not recognizing the political dimensions of technology and forcing those political dimensions into this apolitical space, we risk politicizing the technology somewhere else.” This is especially true for gene drives, which have some exceptional characteristics. Some gene drives could spread and persist in the environment and have the potential to cross political and environmental boundaries. A participatory decision-making process will ensure that varied perspectives are included, thus identifying potential pitfalls.

Key questions

What is the role of stakeholder engagement in risk assessment of gene drive applications, and how do we respond to that engagement in the context of governance?

What are the barriers to stakeholder engagement in risk assessment? For example, to what extent does the quantitative approach to risk assessment exclude stakeholders without technical training?

When analyzing the impacts of a technology through the risk assessment process, where does the line between inconsequential change and significant change lie?

How do we reflect upon the value judgments within the risks identified for risk assessment?

Who holds the responsibility for doing engagement? Who needs to ensure engagement happens?

References

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National Research Council. 1983. *Risk Assessment in the Federal Government: Managing the Process*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/366>.

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FIELD TESTING SITE SELECTION: INCLUDING SOCIAL CRITERIA IN SELECTING SITES

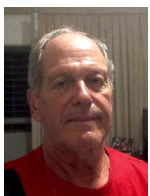
Summary of Panel 3 Discussion, April 13, 2021

Moderator



Katie Barnhill-Dilling, Ph.D.
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Panelists



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Tibebu Habtewold, Ph.D.
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The selection of field testing sites will be a crucial step in the future deployment of new gene drive technologies. Prior to field testing, a new technology undergoes rigorous, stepwise laboratory trials that aim to demonstrate safety and efficacy in a controlled setting. The field trial is then a small-scale “implementation” of the technology designed to further evaluate risks and assess benefits under conditions representative of eventual sites for deployment. According to this conventionally-held view of field trials, the site selection criteria should prioritize parameters that allow researchers to more clearly control and monitor the impacts of the release. However, field sites do not exist in a vacuum, and therefore the site selection process must also consider social, community, and political factors. This panel discussion captured some of the complexity and interdisciplinary nature of questions pertaining to the site selection process, as the panelists explored the need to move beyond the limited framework of safety and efficacy to include social and ethical criteria in site selection.

Key Theme 1: Stakeholder engagement can incorporate social and ethical criteria into the framework used for field testing site selection.

Stakeholder engagement can expand the normative framework of safety and efficacy used in the field testing site selection process to account for social and ethical criteria. The places or types of

geographies that are imagined and treated as field sites often encompass peoples' homes and livelihoods. The reality of the local community may differ from the imagined reality of the outside researcher, and there could be cultural impacts and local histories that scientists may not have taken into account. Riley Taitingfong stated, "It's worth asking how the places we are presently imagining as field sites for gene drive might fit into these sorts of histories...One person's field site might be another person's home or ancestral lands." In order to ensure that community stakeholders' visions, motivations, and concerns are represented in field site selection criteria, engagement can be used to incorporate more place-based definitions of what matters to a community. For example, engagement activities might include more collaborative definition-building around what safety means in the local context. Echoing the Gene Drive Research Forum's previous discussion of risk assessment, Taitingfong pointed out, "concepts like risk and benefit are really contingent upon whoever is defining them." Inevitably, there will be some tension between the need to prioritize social factors and the importance of understanding the safety and efficacy of the technology being tested.

Gene drive is a novel technique, and field trial site selection criteria need to account for any unique social and safety considerations of this emerging technology. Karl Campbell described the importance of defining both required criteria and desired criteria when looking at a limited number of field trial sites. He referenced the 2020 *Science* paper, "Core commitments for field trials of gene drive organisms," as a means of identifying essential general criteria. The paper, authored by a multidisciplinary group of experts, presents guidelines that advance the conversation around incorporating social criteria into site selection. It frames field trial commitments around four categories deemed critical for responsible conduct: (1) Fair partnership and transparency; (2) Product efficacy and safety; (3) Regulatory evaluation and risk benefit assessment; (4) Monitoring and mitigating, including exit strategies. Engagement activities can support these efforts and make spaces for collaborative decision making, prioritizing relationship building, and identifying and ensuring downstream benefits.

Key Theme 2: Gene drive necessitates an approach to individual consent scaled to the community level.

Obtaining individual informed consent is an established ethical hallmark of medical research, however gene drive researchers currently lack an analogous framework and approach for obtaining community-level consent. Field trial sites tend to be viewed as isolated, relatively contained sites amenable to research and experimentation, when in reality they often encompass whole communities. While there is recognition of the importance of developing guidelines for community consent for the release of area wide vector control, such as gene drive mosquitoes to control for malaria, the existing guidelines are insufficient and inadequate. A key point raised by a member of the audience stated: "Informed consent was developed with the individual in mind because consensus is almost impossible to achieve when it comes to communities." Due to the challenges of seeking informed consent at the community level, the panel questioned whether there were alternative frameworks or models from other disciplines for obtaining community approval and determining what is acceptable and legitimate for community consent.

There was broad consensus that the benefits of the gene drive field trial and potential deployment must be tangible to the community. Naima Sykes described how at Target Malaria, a non-profit research consortium that aims to develop and share genetic technologies to modify mosquitos and reduce malaria transmission, the site selection process focuses on those locations that bear a high incidence of disease. Paulo Paes de Andrade agreed that it is crucial to select a site where the population is heavily impacted by the disease burden. If the community also perceives that there is a disease burden, a conversation around new approaches to eliminating that disease can begin. Tibe-bu Habtewold noted that while tools such as bed nets offer visible protection to a community, the benefits of gene drive are harder to visualize. In order to achieve some form of community consent around gene drive, the gene drive community will need to demonstrate the technology's positive impact in a way that is clearly visible to the community.

Key Theme 3: Power and organizational hierarchies need to be considered in field trial site selection and deployment.

Many of the panelists highlighted the need to account for colonial histories and power dynamics and structures as gene drive technologies move through the stages of field trials and deployment. Tibebe Habtewold stated, “The colonial history is alive and active in every corner, every direction” and to deny that history is playing a role in technology development and deployment is naive. Most of the panelists agreed that developers have a responsibility to take these histories and existing power structures seriously and avoid replicating them. The moderator, Katie Barnhill-Dilling, highlighted the potential power differentials that exist between researchers and low income communities. In response, some of the panelists noted that engagement activities are essential to identify power imbalances and structures and to understand community values and concerns relevant to development, field trial site selection, and deployment of these technologies.

As gene drive researchers and engagement specialists discuss the appropriate terminology for community agreement and permission for research activities, there is a need to come together to create an effective approach to identifying and engaging with the pertinent stakeholders and communities. Researchers need to consider those with tangible, immediate interests and impacts and those with an interest or perspective, but who may not be directly impacted. The subsequent approach to engagement should reflect the relationship between the community and the field trial site. Karl Campbell added that as researchers, we often fall back on “sufficient consensus,” and that can vary dramatically from a single formal power decision-maker to unanimous agreement within a community. Furthermore, he noted identifying who you are engaging with in the community will impact ensuing decision-making processes. There needs to be a means of co-development that incorporates local decision-making, values, and concerns, and that process needs to extend to release. Oftentimes, researchers are working with some of the least empowered communities. As Naima Sykes stated, “Those communities need to be positioned at the center of our discussion when it comes to site selection but...also to then have access to the technology if and when it is approved and safe and tested.” Referring to his work with transgenic mosquitoes, Paulo Paes de Andrade warned, “By the end of the day, however, the mosquito was approved for commercial criteria and once that happens, there is no more criteria except the commercial criteria.”

Finally, all of the panelists agreed that this work requires a humble approach. Successful engagement with communities requires an open-minded approach that is responsive to the local community’s values and culture. Scientists and policy makers need to work to create a just and equitable space for engaging with the non-scientists and other holders of knowledge. Outside specialists must maintain flexibility and accommodate existing structures, which will vary country to country. Again, it comes back to collaboration, relationship building, and prioritizing community values and benefits. Tibebe Habtewold concluded, “Be humble, learn, take steps, build trust with the community.”

Key questions

What are the power imbalances playing out in development and deployment of gene drive technologies? How do we account for colonial histories in a way that supports forward-looking and just decisions?

What is the appropriate model and terminology for community agreement or permission for gene drive field trials or deployment?

Who is identifying and representing the social dimensions of site selection? How do researchers define and identify who should legitimately represent a community?

Reference

Long et al. (2020, December 18). Core commitments for field trials of gene drive organisms. *Science*, 370 (6523), 1417-1419. <https://www.science.org/doi/10.1126/science.abd1908>

WHAT IS THE ROLE OF CONSENSUS IN STAKEHOLDER ENGAGEMENT?

Summary of Panel 4 Discussion, May 11, 2021

Moderator



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Associate Professor in the Herbert Wertheim School of Public Health and Director of the
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Panelists



Juan Dumas
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Francine Madden, M.A.
Co-Founder and Executive Director
[Center for Conservation Peacebuilding](#)



Lina Finda, Ph.D.
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F. Stephen Mulligan
District Manager
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Edith MacDonald, Ph.D.
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Building consensus in the context of developing and deploying new technologies is a process that involves engagement between project leaders and stakeholders. This panel discussion explored some of the diversity of views on what consensus is and how engagement plays a role in a successful consensus process. At the core of the discussion was a consideration of the relationship between consensus, agreement, and decision-making. As the panelists considered the challenges and benefits of the consensus process both generally and within the context of gene drive, they emphasized the importance of inclusive communication that reflects the diverse interests and values of stakeholders. Broadly, consensus was seen as a way to create a shared understanding of project objectives and stakeholder goals with the awareness that consensus does not always signify unanimous agreement.

Key Theme 1: Early integration of consensus processes into decision-making is important and does not imply the need for unanimous agreement to take any action.

Among the panelists, consensus was seen as a means of making stakeholders participants in the decision-making process. Most agreed that the purpose of engagement and consensus should be

about giving choice in those decisions directly impacting the community. Therefore, an appropriate decision-making model needs to be used. Edith MacDonald cited the New Zealand wildlife conservation context of the potential use of gene drive. “The New Zealand public expects to participate in the decision about if gene drive is going to be used...We found that the public expect engagement to happen now even though the tool is not up and running, even though there are a lot of unknowns.” This may be counterintuitive to developers and scientists who are apprehensive about holding engagement related to a new technology while there are more questions than answers. “But it’s at that particular time that public engagement can actually have the most effect on if and how that tool is going to be used.” She added that if the process is delayed until all the knowns are known, it’s too late. At that point the decision has already been made, and the public will feel disenfranchised.

Notably, a consensus process can be well done but still end in disagreement. Some panelists argued that the decision to pause or reject the project needs to be on the table. Juan Dumas described a recognizable pattern in technology development in which the project developers initially seek community input and then “go away” and work on the technical aspects of the solution. After they “figure it all out,” they return and expect the community to embrace the proposed solutions designed in their interest. “But there are tons of assumptions along that line of reasoning...so to me the question is whether stakeholder engagement processes are actually for engagement or is it for stakeholder persuasion purposes. Can people say no?” Stephen Mulligan shared a slightly different perspective from his role as a public health specialist. Like the others, he views engagement in the consensus process as a means of providing a level of understanding, hearing and acknowledging concerns, and discussing the benefits of the intervention. “However, this does not mean that this is a vote of the residents or constituents to go forward with the program.” In accordance with the other panelists, he added that it can even be counterproductive to seek agreement or unanimity and is likely not even possible. Rather, the process should hold space for diverse opinions and aim to build trust. Another panelist described seeking unanimous agreement as a potentially dangerous process in which one individual can gain all of the power by acting as a holdout who then influences the final decision out of self-interest.

Key Theme 2: Stakeholder engagement can be used to address both tangible and intangible goals of the community when building consensus.

Engaging with communities to build consensus creates possibilities for responsive communication around stakeholders’ needs and goals, both tangible and intangible. Oftentimes the researchers and the stakeholders have common tangible goals, such as reducing transmission of an infectious disease. When considering malaria, the overall goal may be to eliminate malaria, but the immediate aims will vary among different stakeholders and between programs and interventions. Researchers can use engagement to ensure that proposed solutions, such as gene drive, are responsive to the community’s needs, reflect lived experiences, and complement existing elimination strategies. Lina Finda stressed that a good will effort at engagement and consensus requires that scientists set foot in the locations and communities they are working with and actually experience the setting, needs, and opinions of the community. When working in a place where mosquitoes are deadly, it is essential to consider the community context, fears, and values when proposing to introduce a gene drive mosquito. Finda described how in one community she worked with the members held a strong preference for the population suppression approach to eliminating malaria-transmitting mosquitoes. As she notes, it will take time and understanding to explain the benefits of bringing and releasing “safe” gene drive mosquitoes to a place where people are afraid of mosquitos and are working to eliminate them.

Other times, the goals on the agenda are heavily weighted to the goals and desires of just one interested party. In reality, those goals may not reflect the core needs of the stakeholders and may unintentionally convey disrespect for the other stakeholders. If what the stakeholders are convening about reflects only what the group holding the most power wants and is not inclusive or expansive to the needs of those engaged, a sense of disenfranchisement may prevail. Similarly, some stakeholder goals and needs are intangible and perhaps unspoken, such as having an identity legitimized

within and beyond the community. Feeling respect and dignity, that decision-making processes are fair and transparent, that when taking the time to participate they actually have a voice, these are intangible objectives that can be just as important as what is tangibly on the table. Stakeholder engagement can meet those unexpressed yet essential needs while also addressing the more visible goals.

Key Theme 3: Successful consensus building is a transparent process that is informative, values-laden, and inclusive of dissenting and marginalized voices.

Over the course of the panelists' discussion, a picture of consensus as a process of building trust between stakeholders and project developers emerged. The panelists described consensus as an iterative process that prioritizes relationships over unanimous agreement and creates a common understanding of the issues and proposed solutions. In the context of gene drive, relationship building that leads to transparency and clear communication around the science, including the risks and 'unknowns', is required so that individuals can come to their own informed conclusions. At the same time, an effective approach to stakeholder engagement and consensus will be rooted in values. As Edith MacDonald described, "If you want to have true engagement with your participants, your key stakeholders, your public, you must have it be values-based. Always have the science in the background, but you have to lead with values. And keep in mind, those aren't your values; they're those of the people, the stakeholders that you're communicating with."

Consensus building with stakeholders opens the door to including and empowering diverse voices. This approach takes time, and a good process will involve a spectrum of views and opinions. There is a lot to learn from varied ideas and opinions, so it is important to include those people that disagree with the proposed solution. Francis Madden suggested that this will lead to more lasting and robust decisions: "It is only through that diversity and inclusion that you get a real 360 degree understanding of what the issues are, and that actually leads to better solutions, more sophisticated solutions." Importantly, the consensus process must account for and aim to balance power differentials across and between stakeholder groups. If the communities do not feel they have genuine power or that they're playing a token part, they may try to subvert or disrupt the process. This may require confronting deep rooted power-related conflicts, addressing intergenerational trauma due to exclusion, racism and mistreatment, and amplifying previously disempowered voices.

Key questions

How can incorporating stakeholder engagement into consensus be used to balance power in decision making processes?

What is the primary purpose of using stakeholder engagement to build consensus? Is it about creating a shared understanding or persuasion?

Who determines when consensus has been reached?

How can working to understand the motivations of dissenting voices strengthen a project?

INVESTIGATING THE INDEPENDENCE OF STAKEHOLDER ENGAGEMENT ACTIVITIES

Summary of Panel 5 Discussion, June 8, 2021

Moderator



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There is a recognized need for scientific communities to engage with both the broader public and directly impacted stakeholders as an integral part of the research process. Less clear is whether the funding and practices of engagement should retain independence from policy makers, researchers and technology developers. This panel discussion considered the independence needed for effective stakeholder engagement by exploring topics related to the roles of third-party engagement practitioners, research institutions, and funding.

Key Theme 1: Transformative stakeholder engagement requires integrating academic theories and frameworks with practical, on-the-ground experience.

The panelists described a need to bridge the gap between the academic theories and frameworks for stakeholder engagement and the learning and innovation by practitioners in the field. Delphine Thizy described how, on the one hand, there are the experts in social science who create and publish frameworks and theoretical models for stakeholder engagement. On the other hand, there are the practitioners in the field who have been adapting and pulling from various theoretical frameworks while acquiring experiential knowledge of effective stakeholder engagement by working directly with communities. Those practitioners often lack a means to systematically leverage and share that adaptive learning with the broader engagement community. Thizy questioned how to combine the academic theories, often coming from institutions in the Global North, with the work of on-the-ground practitioners, who are discovering and innovating along the way. She suggested building

alliances that support practitioners publishing their work, as well as including more space in conferences for stakeholder engagement topics and practitioners “even if they haven’t had 50 publications in *Nature*.” Christina Mormorunni further highlighted the need for more of an “investment in the monitoring, evaluation and learning associated with this kind of work.”

Citing this gap between science and practice, Francine Madden described how a lack of adopted best practices by third-party practitioners can result in a process that is seen as biased, unproductive, or mired in conflict. Stakeholders and project managers may become disenfranchised with the process of stakeholder engagement and avoid further collaboration. She stressed the importance of continually integrating science and research in order to evolve, explore, and test approaches in the field and to avoid using a one-size-fits-all model. In her work, she relies “on a set of theories, principles, processes, and skills, and then we create a framework that fits for that context at that point in time.” However, she noted, this is done in relative isolation. In order to ensure a continually growing, advancing, and innovative community of third-party practitioners and conveners, she argued for a standard of practice. Establishing standardized guidelines will help build the capacity of the people working on the ground and connect them to the body of work emerging from academic and government institutions.

Key Theme 2: While there is no such thing as a “neutral” engagement, funding for third-party facilitators can help ensure a fair, legitimate, transparent process built on respect and trust.

The panelists explored the relationship between the funders supporting stakeholder engagement work and potential conflicts linked to their interest in the outcomes of the process. Francine Madden described that while her organization is hired by the party that has “the biggest lift or is under the most attack”, she aims to establish neutrality and trust with all stakeholders from the beginning. She claims she does not work for the client but rather “the system” and takes a systems approach to create positive change throughout the process by zooming out from the specific interests of the client to include the broader goals of the community. Delphine Thizy pushed back on this slightly by stating that she believes there is no such thing as neutral engagement, especially when the facilitator is hired by one party. But she agreed that there are numerous benefits to funding third-party facilitators who can give voice to more people and ensure transparency and two-way dialogue. While the third party may not be neutral, they can bring in more objectivity and help to create an embedded process built on respect and trust that is seen as fair and legitimate by the stakeholders. The panelists also acknowledged that a standalone third party will have a harder time conducting transformative work on the project. A completely independent process may lead to engagement that is less meaningful, useful, and influential.

In order to effectively support responsible and ethical stakeholder engagement, funding should provide the space and time for third-party stakeholder engagement to unfold. Funding for the implementation of any type of meaningful stakeholder engagement can be difficult to obtain. Some of the panelists argued that funding for community engagement should be part of the research funding, gene drive or otherwise, and should include funding for evaluation of the engagement. Furthermore, funding that is long term and embraces failure will advance learning across the engagement community. While meaningful stakeholder engagement is contingent upon resources, time and space, funders are also dependent upon high quality applicants. Thomas Burnett highlighted the reciprocal dependency between funders and grantees: “Our funding is only as good as the grantees that conduct their projects...We do our due diligence to identify trusted, respected, competent groups.”

Key Theme 3: Current models of funding need to evolve in order to support transformative and systemic change through stakeholder engagement.

Creating transformational change through stakeholder engagement requires addressing systemic problems, in which culture, identity, history, and racism all play a role, with systemic solutions. This change requires speaking with and entering into relationships with more people. In her conservation work, Christina Mormorunni sees stakeholder engagement as an opportunity to build transforma-

tional change. She aims to co-create enduring, systemic solutions with relevant communities that go beyond simply putting land into protected status. She envisions transformational change as part of a new conservation paradigm in which funding supports doing conservation differently, with justice and equity at the center, and aims for different outcomes informed by community partners. The panelists agreed that those outcomes include recognizing different ways of knowing, co-creation, and approaching engagement with humility and an awareness of biases and assumptions.

However, current models of funding need to be adapted to support the systemic change required for long term solutions. Mormorunni has seen how conservation has become increasingly polarized and divisive due to underlying systemic issues. She described the need to evolve more progressive models of funding and philanthropy in order to obtain investment in stakeholder engagement that is transformational in its output. As she stated, “It’s a very colonized model of funding that we have and therefore, the types of solutions that we are working towards with our partners, even though we try to do it the right way, are still a kind of colonized construct...I don’t have the resources to really go deep and apply a systemic methodology to this work.” She cautioned that conservation groups risk making problems worse by rushing solutions without having the resources necessary to support the engagement work necessary to actually build capacity for those solutions within affected communities.

Key questions

What are the tradeoffs of maintaining independence of stakeholder engagement from a project’s scientists and funders?

What are the mechanisms for enabling on-the-ground knowledge to be disseminated to scholars and other practitioners?

How do we invest in analysis, synthesis, and translation of best practices for stakeholder engagement?

How do academics both refine stakeholder engagement theories and frameworks and also inform the practice?