Oregon Task Force on Genetically Engineered Seeds and Agricultural Products: Summary of Task Force Report and Observations for Coexistence Efforts

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Abstract

Dialogue related to GE issues is often polarizing due to the broad range of often-conflicting perspectives and the level of passion that many bring to this topic. Recognizing this challenge, in 2014 the Governor of the State of Oregon created a task force to bring representatives of diverse interests together to help frame the issues so that decision-makers would have an opportunity to consider the issues in a way that reflected the full range of perspectives. The purpose of the task force was not to develop consensus recommendations, but rather to help ensure that the full range of issues of concern to stakeholders was identified and understood. In examining the challenges of coexistence, the task force surfaced governance approaches, risk, liability and compensation, and communication as important considerations. While the decision not to seek consensus recommendations may have limited the report's impact in subsequent legislative discussions, the effort to characterize issues of concern may have laid useful groundwork for the future. This paper presents the highlights of the task force's discussions regarding coexistence issues and explores the implications for this type of process in terms of advancing exploration of coexistence strategies.

Keywords: coexistence, Oregon, governance

1. Introduction

The use of genetic engineering (GE) in agriculture is a topic that is politically charged and often highly polarizing due to the strongly held views that various actors bring to this topic and the broad range of often-conflicting perspectives on the value and appropriateness of this technology. In the State of Oregon, GE crops have been the topic of vigorous debate and political action, including efforts to ban the production of GE crops in some counties and to pass legislation that would require labeling of GE products.

To lay a foundation for more informed and inclusive dialogue about these socially complex issues, in 2014 Oregon Governor John Kitzhaber created a task force that brought representatives of diverse interests together to help frame the issues related to GE in a way that reflected the full range of perspectives. The task force was charged with three objectives: identifying and framing the main challenges between growers of GE crops and other agricultural producers in Oregon; identifying and describing areas of agreement and disagreement related to GE and non-GE food products, including and especially related to information for consumers; and identifying and describing what other jurisdictions have done, or have proposed doing, to address these areas of concern (Oregon Consensus, 2014). While the decision not to seek consensus recommendations may have limited the impact of the report in subsequent legislative discussions, the task force's efforts to characterize

the issues of concern may have laid some useful groundwork for future work.[1] This paper describes the general findings and themes of the task force with specific focus on the discussion of coexistence. The approach taken to convening the task force is described and the applicability of the task force approach for other coexistence-related processes is explored. More details about the task force's discussions can be found in the from the Task Force report (Oregon Consensus, 2014).

One important observation that frames the paper is that the central themes that emerged from the group's work were primarily focused on issues that might best be described as social or political – issues of governance, approaches to addressing risk and liability, conflicting rights, and communication. Given that the task force was not asked to deliberate on the science related to GE crops, this focus might be expected; however, the themes that emerged may also suggest that the nature of the debate over GE crops may be less about scientific and technical issues and more about how to navigate between conflicting values, how to engage actors in behavior that can help mitigate potential economic harm to others (especially when risk is not equally shared among actors), and other issues that are fundamentally of a social and political nature.

The issues surfaced in the task force's discussions support the characterization of genetic engineering as a "wicked problem" (Ervin and Jussaume, 2015; Allen, 2015); attributes that define a wicked problem issues include, *inter alia*, the involvement of multiple stakeholders involved with differing ideas about what the "real" problem is and what the causes of the problem are; the lack of clear solutions; the challenge that even partial solutions often require changing behavior**;** and chronic policy failure (Australian Public Service Commission, 2007; Batie, 2008). While this paper will not delve deeply into the "wickedness" of this issue, by systematically identifying and characterizing the conflicting perspectives on this socially complex topic the work of the task force may be helpful in informing the broader dialogue about coexistence (Allen, 2015).

2. Task Force Discussions

The task force identified a number of topics central to understanding the dynamics of genetically engineered agriculture in Oregon (see Table 1). The full task force report (Oregon Consensus, 2014) provides greater detail regarding each of these topic areas; this paper will focus on overarching themes that emerged and on the discussion specifically related to coexistence.

[1] In addition, Oregon Governor John Kitzhaber resigned from office soon after the task force report was issued, a change in leadership that may also have affected the extent to which the topic received attention in the 2015 legislative session.

2.1. Areas of Alignment, Disagreement, and other Themes

Understanding where there were areas of agreement and where conflicts existed was an important part of the task force's charge. The task force generally agreed on the importance of addressing gene flow and related market impacts, the existence of key data gaps that impede the ability to understand the current situation regarding GE production and potential conflicts, the need for greater clarity on governance approaches to managing GE crops, the value of developing an adaptive approach to respond as science, technology, and policy evolve, and the need for better communication at all levels and among all actors. Areas of disagreement included debate over the appropriate approach to governance, whether existing regulatory frameworks were adequately protective regarding environmental and health impacts, how labeling affects consumer understanding as well as food costs and availability, the extent to which science supports or challenges the use of GE (though, again, resolving scientific claims was not part of the task force's charge), and whether the finding of "substantial equivalence" is sufficient to address potential environmental or health impacts or whether a precautionary approach should be taken. In addition, considerations of risk and the extent to which it is shared and conflicts between perceived rights also emerged as topics of discussion.

2.2. Coexistence: Issues and Options

As noted above, the task force agreed on the importance of addressing gene flow and related market impacts; specifically, a key policy issue that the task force prioritized was "finding a path to coexistence that sustains and protects all Oregon markets, including organic, conventional, and GE" (Oregon Consensus, 2014, p. 4). The task force identified a range of coexistence strategies, including agronomic practices, biological mechanisms, buffers or physical barriers, isolation in space, isolation in time, control areas, distribution systems, insurance, mapping/pinning, and improved communication and coordination (see Table 2). The task force noted that these tools and practices are not mutually exclusive; isolation in time and isolation in space, for example, can be used in conjunction with one another, although such an approach requires coordination among neighbors and might require new rules to establish requirements for growers of varying crops.

Several themes that cut across the discussion of coexistence strategies - governance, risk, liability and compensation, perceived rights, and communication - are examined in more detail below.

2.2.1. Governance and Risk

Task force members had considerable discussion about the appropriate governance structures to

manage the complex topics surrounding GE crops and processed products in the state of Oregon. While in general the task force members agreed that greater clarity surrounding governance of GE crops would be beneficial in providing predictability and certainty for producers and processors, the members disagreed as to the appropriate role of state versus federal agencies; specifically, there was disagreement about whether the Oregon Department of Agriculture (ODA) should expand its role, either under existing authorities or through expanded authorities, and whether the federal regulatory framework sufficiently protects growers, processors, and consumers.

The pros and cons of voluntary vs. mandatory approaches to managing relationships between GE and non-GE production was a central topic in the governance discussion, and there were varied opinions among the task force members about the relative merit of these approaches. Some task force members who did not perceive there to be a significant coexistence problem did not see a need for mandatory policy action and expressed a preference for voluntary approaches which they argued would allow for local context to inform actions. Other arguments for voluntary approaches were that regulations based on statute may be difficult to revise or adapt, and therefore may not be nimble enough to meet the challenges presented by an accelerating technology such as GE. Some expressed concern that mandatory regulations may be developed without full understanding of relevant agricultural and manufacturing issues, noting the importance of having the "right combination" of people in the room to ensure that all relevant considerations are taken into account.

The diversity of agriculture sectors in Oregon was noted as a challenge to developing a mandatory set of requirements, as developing rules that reflect the variety of crops and regional differences could be highly complex; different crops also present different levels of risk that may not be easily addressed in a one-size-fits-all approach. Since many Oregon processors source ingredients from outside the state and ship products out of state, there was also concern that Oregon-specific standards might impede interstate commerce or international trade.

However, a critical issue with respect to the viability of voluntary approaches is risk, specifically the extent to which risk is shared. Voluntary approaches work best when all parties involved share risk, as this provides the incentive for all actors to participate in the practices intended to mitigate conflicts between growers. While voluntary approaches to coexistence between specialty seed crops are widely used in Oregon, the risk and the potential harm of cross-contamination in the case of specialty seed growers are shared by all the growers, while in the case of GE the risk from cross contamination is primarily borne by the non-GE grower. Such an imbalance of risk may make

voluntary approaches difficult to implement. In addition to addressing this imbalance of risk, other arguments for mandatory action included helping ensure consistency, avoiding a "patchwork approach" that would be onerous to manage, and ensuring that action could be taken against "bad actors" – those that might choose to ignore the practices promoted through a voluntary program.

The task force examined both mapping and pinning and control areas in greater detail, and many of the governance and risk issues described above surfaced with respect to both of these approaches. Mapping and pinning involve identifying where certain types of crops are being grown in order to facilitate efforts to avoid cross-pollination or other adverse affects between growing crops or growing practices. Considerations that were raised related to mapping and pinning strategies included whether crop identification should be voluntary or mandatory and how to ensure that risk is shared equally between growers, as well as how to deal with confidential business information. With respect to control areas, Oregon's current authority to establish these is limited to issues of pest or disease and only applies to regulated GE crops; the task force debated the benefits of greater flexibility in application and approach to control areas, their effectiveness, and, once again, how to address the imbalance of risk between growers.

While the task force as a whole recognized the value of a gaining greater clarity with regard to governance and risk management, resolving the differences of opinion in terms of approach were beyond the scope of their charge. However, understanding where the differences of opinion lie may help inform efforts to craft workable approaches going forward.

2.2.2. Liability and Compensation

Closely linked to the discussion of governance and risk were issues related to legal liability, compensation, and enforcement that arise when a GE trait enters a non-GE crop, resulting in food or feed that has an undesired GE presence. How should liability be determined, how should compensation for damages be managed, and how should enforcement occur? Once again, the question arose of who bears risk and how is it managed? Task force members held a range of opinions on these questions, some arguing that risk is difficult to assess and enforcement would therefore be difficult or unmanageable, while others felt that risk is relatively easy to assess if it is looked at in terms of economic harm from contamination in a marketplace that demands non-GE products. Some task force members felt that liability for GE pollen drift should rest with the companies that hold the seed license, while others were concerned that such an arrangement would unfairly hold companies liable for actions beyond their control. One challenge to any assessment of

damage was that there are currently no testing standards that are agreed to across all markets for determining liability, and in some cases there is a lack of technical capacity to test. Another consideration related to assessing risk and responsibility is whether willful or neglectful actions should be treated differently than unintentional harm.

Several approaches to assessing liability and providing for compensation emerged from the task force's discussions, though none of them represented a consensus of the task force. These included having the Oregon State government establish a compensation fund as an alternative to assessing responsibility; such a fund could require growers to abide by certain practices in order to qualify for compensation. However, there was some concern that such an approach would put the burden of risk on the public instead of on companies that benefit from the sale of GE traits. Another approach might be a "transition fund" that could help growers cover the costs of coming into compliance with a control area or BMP system. An Oregon state government-run insurance program for compensating harm was another idea that was put forward; this might be structured as a voluntary program to discourage fraudulent claims. Concerns about an insurance program included an aversion to "welfare farming" and a concern that a public insurance system, like a compensation fund, would put the public in the position of bearing the risk in the system. Assessing fees on either growers (of GE or non-GE seed) or companies that sell GE seeds in the state was suggested as one approach to financing one or more of these strategies.

2.2.3. Perceived Rights

Conflicts between rights – whether these rights be perceived or actual - also emerged as a central consideration contributing to coexistence challenges and has particular relevance for considerations of assessing liability. For example, a farmer's perceived right to grow what they choose in the manner they choose may conflict with another farmer's perceived right not to experience gene flow onto their property, or vice versa. While not directly related to coexistence considerations, the perceived right of some consumers to information about the products they consume can come into conflict with businesses' perceived right to disclose certain GE information only voluntarily; if approaches such as mapping and pinning are employed, the disclosure of what is being grown would similarly trigger this concern among some growers. Navigating the conflicts between rights, actual or perceived, is an inherently political process and approaches that can satisfy all parties are elusive.

2.2.4. Communication and Conflict Management

Task force members noted that better communication was needed at all levels of the GE discussion - among farmers, breeding experts, policy experts, growers, processors, and consumers. Even if full agreement on certain issues may not be possible, more direct communication could help expand the range of possible approaches to resolving conflicts. With respect specifically to coexistence considerations, improved communication and clear direction at the policy level could also ameliorate challenging neighbor-to-neighbor issues, as these conflicts often arise from a lack of policy certainty or conflicting interpretations of existing policies. While there were varying perspectives about how best to address specific challenges, task force members agreed that Oregon's agricultural community is best served when neighbors are working cooperatively and are not pitted against one another.

Because the task force was not asked to develop recommendations, the discussions stopped short of seeking to resolve the differences of opinion noted above. Some task force members indicated in a post-process evaluation that they felt the constraint on the task force's in terms of developing recommendations limited the impact of the report in subsequent legislative discussions. However, the process of engaging the task force to surface issues without immediately pushing to identify solutions was likely an important first step, as task force members indicated that in the process they came to understand differing views and positions. Subsequent engagement of the task force or another group to push toward recommendations might then have been a worthwhile next step.

3. Task Force Formation: Process and Goals

As the previous section illustrates, many of the challenges identified by the task force were primarily social and political issues. Even though some agronomic and biological techniques may be technically oriented, often the process of getting growers, policy makers, and others to communicate in clear and transparent ways and be willing to collaborate with each other is the most critical element to advancing coexistence strategies. Capturing all of the relevant views on these topics therefore becomes increasingly important as it helps ensure that any proposed strategies will be as inclusive as possible and will not leave out important considerations or concerns. The emphasis on improved communication noted by the task force also serves as a critical component to any policy development efforts.

Given the centrality of these issues to efforts to approach coexistence, the process through which

the task force conducted its work may offer useful considerations for other efforts to bring together diverse and conflicting points of view in order to fully characterize a complex situation. The task force was facilitated by Oregon Consensus, a program based in the Mark O. Hatfield School of Government at Portland State University that provides neutral facilitation to help resolve conflicts and develop collaborative solutions; providing skilled facilitators who took no position on the topic helped to set the tone for productive and inclusive engagement. In addition, the Governor appointed two co-conveners to lead the task force, the Director of the Institute for Sustainable Solutions at Portland State University and the Dean of the College of Agricultural Sciences at Oregon State University; the role and goal of the conveners were to set the tone for constructive dialogue and seek to ensure that the full range of views are represented. The Governor's designation of the forum lent the task force a profile and level of standing that helped bring participants to the table.

In forming the task force, the Governor's office worked with Oregon Consensus to identify representatives of the broad range of views on this topic, seeking to the array of perspectives on GE across all of the relevant sectors (agricultural production, processing, retail, etc.). Table 3 includes the names and affiliations of the appointed task force members. While it would not have been possible to capture all of the gradations of perspective on such a complex topic, the effort to be inclusive helped send a message to the task force members and the public that the effort was intended to be balanced and representative. While a large amount of scientific and technical information was shared with and provided by the task force in support of different views, as noted above the task force itself was not asked to deliberate on the scientific evidence related to this topic. While some task force members struggled with this constraint and maintained throughout that it left critical information out of the conversation, removing debate over the science from the conversation may have helped the task force focus attention on the challenges such as governance, communication, and the need to incent participation in risk management strategies that are central to developing approaches to address areas of where conflicting values come into play.

As noted above, the facilitators and the co-conveners were tasked with maintaining an environment in the task force discussions that ensured all voices were heard and that discussion did not devolve into debate over topics that could not be resolved in this forum. In the early sessions of the task force, the co-conveners emphasized repeatedly that the task force members were not being asked to change their views on GE, nor were they there to try to change the minds of other task force members; rather, they were there to clearly and candidly describe their views on the topic. In addition, the co-conveners asked the task force members to do their best to "listen to understand"

each other – to ask clarifying questions if they did not understand a view that was being shared in order to ensure the task force succeeded in comprehensively capturing the landscape of views on the topic. While it took some time for the task force members to become accustomed to these parameters, this framing significantly enhanced their ability to engage with each other constructively. In the post-process evaluation, respondents consistently indicated that the process had been effective in ensuring the full range of views were heard and that a civil dialogue was maintained.

4. Concluding Remarks

While the task force focused on the challenges and areas of opportunity for the State of Oregon and was constrained, as noted, from coming up with specific recommendations for action, many of the topics explored may have value in informing broader discussions about GE and coexistence. Given the social complexity of these issues, the approach taken in Oregon may be useful for others engaged in exploring options related to coexistence to consider, as the process through which the group was convened and managed was essential to getting them to be able to engage with each other constructively. Because of the predominantly social and political nature of the issues under discussion, finding ways to negotiate among contested values and seek agreement on approaches that mitigate an imbalance in risk are essential to advancing coexistence strategies. As a result, creating constructive and productive working relationships across the range of actors and that are inclusive of the range of views on this topic is a particularly important step toward developing workable solutions. While the task force was constrained in its charge from pushing toward consensus recommendations – to the frustration of some task force members, who felt this limited the impact of the work in subsequent legislative discussions – the foundation of relationships created during the process may still provide the basis for exploring policy solutions in the future.

The approach taken to the formation and management of the task force reflects the advice offered by Byrn and Fromherz (2003) as they reflect on an effort in Colorado to develop approaches to coexistence between GE and non GE crops, in which they state "…we recommend that groups considering the coexistence of GM and non-GM crops seek a balance of perspectives on the issue, and that they emphasize compromise and mutual respect for differing points of view" (Byrne and Fromherz, 2003, p. 261). Ervin and Jussaume similarly argue in their examination of weed resistance issues as a wicked problem that a "people-centered approach" is needed, one that is more inclusive in terms of stakeholders and disciplines than existing efforts to address this issue (Ervin and Jussaume, 2015). Sayer et al. (2013), in laying out ten principles to guide efforts to address

complex agricultural issues at the landscape level, include among these principles a commitment to continual learning and adaptive management; engaging multiple stakeholders, clarifying rights and responsibilities, and strengthening stakeholder capacity as important principles. While the social complexity of the quest for coexistence between GE and non-GE crops may be daunting, processes that can help establish constructive dialogue among key actors may help in identifying feasible strategies; more importantly, such processes may help in developing trust among actors and a willingness to work together to solve this wicked problem.

Table 1: Task Force Topics
Coexistence • Cross-pollination and Gene Flow • Practices • Mapping and Pinning • Control Areas • Voluntary vs Mandatory Approaches • Legal Liability, Compensation, Enforcement
Consumer and Grower Information/Choice • Food Safety • Consumer Information, Education and Public Perception • Promotion • Certification • Labeling
Economic and Social Impacts • Food Supply and Climate Adaptation • Market and Tolerance • Ethics and Values • Licensing, Seed Ownership, and Intellectual Property • Trade and Tariffs • Occupational Safety
Environmental Impacts • Biodiversity • Chemical load • Crop Yields and Land Utilization • Gene Flow • Pest Management • Soil Impacts • Water Quality
Existing Legal and Policy Issues • Oregon Authorities and Statutes • Federal Authorities and Statutes • Potential Conflicts Between State and Federal Authorities • Legal Topics • Other Policy Topics

Table 2: Coexistence Practices (not mutually exclusive)	
Agronomic practices	There are a number of practical activities that can help reduce the potential for cross-contamination, including: cleaning machinery, sealing containers when crops are transported, drafting contract that require best practices to reduce or eliminate drift, educating farms and volunteers about the concerns and tools to address cross-contamination.
Biological mechanisms	There may be potential for biological tools currently in the research phase, such as GURTS (genetic use restriction technologies), including male sterility, which could alter the plants themselves in such ways to reduce or eliminate drift.
Buffers or physical barriers	Cages, greenhouses, high tunnels, and tree rows/forests are examples of physical tools that can reduce drift by impeding cross-pollination.
Communication and coordination	Good communication and coordination between neighbors on strategies such as timing for crop planting or buffers can significantly reduce the potential for drift.
Control Areas	Control areas, or growing zones, are areas that restrict the crops grown within their boundaries, through either requiring certain practices or excluding certain crops or types of crops. These could be either voluntary or mandatory in nature.
Distribution system	Changes to the distribution system such as clearly designated vehicles for certain crops or segregated systems could reduce potential for commingling.
Isolation in space	Producers can space crops at such distances that risk of cross-pollination is reduced or eliminated. Isolation distances vary by crop, are dependent on local knowledge of conditions like weather patterns, and can range from approximately a half mile to more than three miles. Task force members raised a number of questions related to liability and/or burden of responsibility, including whether a GE producer should be responsible for planting far enough away from other crops to ensure that cross-pollination does not occur or whether a non-GE producer should be responsible for planting far enough away to protect his or her

	crops.
Isolation in time	Since crops flower at different times, different crops can be planted at different times to minimize the risk of cross-pollination. While this can be an effective strategy, however, organic or non-GE producers are often the ones that need to delay planting, which can shorten their growing season and increase their risk.
Mapping/Pinning	A map of crop locations (often described as a "pinning system") would be a tool to facilitate communication among producers as they determine what and when to plant. Some task force members were concerned that mandating such a program raises issues of confidentiality for property owners.

Table 3. Appointed Task Force Members
Convener: Jennifer Allen, Director, Institute for Sustainable Solutions, Portland State University
Convener: Dan Arp, Dean, College of Agricultural Sciences, Oregon State University
Barry Bushue, Oregon Farm Bureau
Katy Coba, Oregon Department of Agriculture *(ex- officio)*
Connie Kirby, Northwest Food Processors Association
Greg Loberg, Oregon Seed Association
Ivan Maluski, Friends of Family Farmers
Frank Morton, Shoulder to Shoulder Farm
Jim Myers, Oregon State University
Marty Myers, Threemile Canyon Farms
Paulette Pyle, Oregonians for Food and Shelter
Chris Schreiner, Oregon Tilth
Lisa Sedlar, Green Zebra Grocery
Steven H. Strauss, Oregon State University
Sam Tannahill, A to Z Wineworks

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