Friends of the Earth's Comments on the US Roundtable on Sustainable Beef's "Sustainability" Framework- Cow-Calf and Feedlot Phases

June 27, 2018

Well-managed grazinglands provide valuable food and ecosystem services to society, including[1]:

- **Reducing carbon pollution by storing it in soil:** Scientists have found that land converted from crops to well-managed grazed grassland absorbed enough carbon in its soil to offset all other emissions from the beef produced on that land.
- **Filtering rainfall runoff to maintain and restore water quality:** Healthy vegetation on well-managed grazing lands cleanses runoff by trapping sediment before it can reach waterways, while erosion and runoff on poorly managed pasture pollutes surface waters.
- **Enhancing recharge of ground and surface waters:** Healthy grasses enable ranchers to get more out of every raindrop by slowing runoff, so that more rainwater is absorbed into the soil instead of flowing off the pasture and into waterways. Healthy soils absorb water like a sponge, keeping more in the system to support productive grasses and livestock—and native plants and wildlife. This reduces ranch and farm vulnerability to droughts and floods.
- **Conserving our national heritage and protecting biodiversity:** Well-managed ranches provide good wildlife habitat and brilliant displays of native wildflowers.
- **Providing recreational opportunities:** Livestock management practices that reduce erosion and improve water quality help make lakes and rivers cleaner for swimming, fishing, and boating.
- **Providing forage for livestock:** ruminant livestock convert plants that humans cannot eat into nutritious food.

Unfortunately a significant portion of the land that livestock (mostly beef cattle) graze (nearly 800 million acres of American lands—an area six times the size of Texas) is poorly managed. By purchasing beef produced on verifiably well-managed ranches and farms institutional and consumer beef buyers can avoid contributing to the environmental costs of this poor management, including[2]:

- **Climate change:** A 2016 meta analysis that reviewed over 1600 studies found that beef production generates more than 4 times (26.5 lbs of CO2eq/lb) the climate emission of pork (5.8 lbs co2eq/lb) and more than 7 times the impact of chicken (3.6 lbs of CO2 eq/lb). While impact depends on quality of management, these are average lifecycle GHG emission numbers across many regions including the processing phases of production.
- **Soil erosion:** According to a Cornell University study, one hectare of overgrazed pasture can lose more than 100 tons of soil to erosion per year, more than 16 times that of well-managed pasturelands. The authors estimated that 54 percent of U.S. pastureland is being overgrazed.
- **Surface and groundwater pollution:** Top polluters of rivers and streams assessed by the U.S. EPA include "grazing in riparian zone or shoreline zones" (33,045 miles), "livestock (grazing or feeding operations)" (20,720 miles), "animal feeding operations" (18,896 miles) and "rangeland grazing" (18,558 miles).

[1] Gelbard, J. L. (2018). "What's Really 'Green'? A Look at Beef Grazing Operations." Triple Pundit. https://www.triplepundit.com/2018/01/sustainable-beef-grazing-operations/

[2] Ibid.

- **Inefficient water use depletes reservoirs and groundwater supplies:** In California alone, the nearly 1 million acres of irrigated pasture require as much water as a city the size of Shanghai.
- **Impacts on America's plant and wildlife communities:** Scientists estimate that poor grazing management contributes to the decline of 22 percent of threatened and endangered species, nearly as many as logging (12 percent) and mining (11 percent) combined.
- **Environmental and economic impacts of weed invasions:** When poor ranch management causes weed invasions, the weeds not only displace our precious native plants and wildlife, but force ranchers and farmers to spend money to control them (over $100 million each year in Montana alone) with toxic herbicides that, in turn, can wash into and pollute our waterways.
- **Land conversion:** In the United States, 23.6 million acres of grasslands, wetlands and shrublands were converted to row crops (particularly corn, much of which ends up as feed for farm animals)—between 2008 and 2011 alone. This and other forms of conversion of natural ecosystems to accommodate beef production are destroying our precious grassland heritage and releasing large amounts of carbon from the soil (where it is beneficial) into the atmosphere (where it accelerates climate change).
- **Vulnerability to drought:** These impacts of poor management make our grazinglands more vulnerable to drought (e.g., by reducing soil water holding capacity). When it is too dry to grow enough grass to feed the cattle, ranchers have to feed them hay (often termed "supplemental feed"). Scientists estimate that climate change could increase supplemental feed costs by up to $235 million per year for California's ranching industry alone. These economic impacts will be greatest on overgrazed ranches that suffer from degraded soils.

Serious impacts require serious Action: Why Cow-Calf Phase Materials Fall Short

The USRSB framework's indicators, metrics, and SAGs are vague, weak, and inadequate for reducing and minimizing impacts and enabling vitally needed progress. The USRSB's metrics fail to scientifically or effectively evaluate progress in reducing key impacts of beef production, including: surface, groundwater and air pollution; the climate crisis; the rise and spread of antibiotic resistant bacteria; and harm to fish, wildlife and biodiversity. Most of the USRSB's indicators and metrics do not focus specifically on *reducing* impacts. Instead, the metrics tend to be *practice-based* rather than results-based (mostly verifying the mere *development* of a grazing or nutrient management plan "or equivalent," not focused on its outcomes or even its implementation details). In that sense, **the metrics fail to serve as credible indicators of whether plans were effectively implemented and generate genuine improvements for America's lands, air, water, and communities.** Their vagueness—coupled with the lack of meaningful performance measures—raise major doubts that the USRSB's sustainability framework will produce significant improvements to livestock management.

Below we provide selected examples how SAG materials for specific indicators fall short:

Water resources: The indicator is, "*The volume of water used by a sector for each process, and any impacts on water quality by a sector for each process."* The metric for measuring the indicator is: "*A grazing management plan (or equivalent) being implemented that maintains or improves water resources*."

a. This indicator fails to (e.g., gallons of water applied per lb. of beef produced) or water quality (e.g., miles of U.S. waterways impaired by livestock grazing and/or animal feeding operations). Thus, it will not meaningfully illustrate movement toward sustainability. Most USRSB

metrics suffer from this same problem. This metric fails to serve concretely measure progress on improving water use efficiency (e.g., gallons of water applied/lb. of beef produced) or water quality (e.g., miles of U.S. waterways impaired by livestock grazing and/or animal feeding operations). Thus It will not concretely measure progress on improving water use efficiency or illustrate movement toward sustainability at either the level of individual operator or the industry as a whole. Most of these USRSB metrics suffer from this same problem. The section also omits guidance regarding irrigation scheduling and efficiency for irrigated pastures, which more often than not needs to be dramatically improved.

b. The guidance to achieve better water resources management contains some good materials on the multiple benefits of related BMPs – even including contingency planning and wildlife resource inventory and management (However, wildlife-related items would seem to belong under Land Resources, and contingency planning is often categorized with climate-change related requirements as "adaptation" to our changing climate).

Land resources: The (inelegantly-worded) indicator is, "*The stewardship of terrestrial and aquatic habitats in relation to water, soil and biodiversity. Impacts of land use, land use conversion, both caused by and prevented by ranching and farming activities and other supply chain land use decisions*." The metric for measuring the health of land resources is virtually the same as for water resources: "*Is a grazing management plan (or equivalent) being implemented to protect and/or improve the land resources, including succession/transition planning*."

a. Overall, this metric fails to measure progress reducing the many impacts of poorly-managed grazing operations. Possible alternatives could include measures such as bare ground (compared to a locally appropriate benchmark), infiltration rates (compared to a locally appropriate benchmark), or other well-established and cost-effective (e.g., National Resources Inventory) metrics.

b. This indicator awkwardly wraps in transition planning as a means of reducing the potential for land conversion from ranching to more intensive uses. However, it offers little details regarding how ranchers can assess for the presence of land-related hot spots, ranging from noxious weeds to fish and wildlife conservation, sensitive species, etc. Many of these involve management considerations beyond grazing management itself, so simply measuring for the implementation of a grazing management plan is inadequate for determining whether an operator (let alone the whole industry) is addressing the full suite of land-related hot spots. Some related materials from the water resources guidance (e.g., "Wildlife Resource Inventory and Management") should be moved here.

c. However, there is still no guidance on critical management considerations such as how to develop an integrated pest management (IPM) plan for preventing and controlling the costly damage caused by invasive species. Nor is there any guidance on how to reduce conflicts with predators and other wildlife – strategies that can help producers *both* minimize risks of animal losses and boost livestock productivity (e.g., by moving calving dates from winter to spring, which helps cut both predation losses and supplemental feed costs).

d. In addition, there is no guidance for situations on leased lands, where ranchers and farmers often do not have the control they need to implement desired management improvements. This is especially the case on federal public lands, which are plagued by poor grazing management and litigation over related impacts to America's natural heritage of native fish, wildlife and plants. Stakeholders need to devise recommendations for credibly advancing sustainability in these distinct situations, which apply to well over 200 million of acres of grazed ecosystems.

e. These are just a few examples of why the materials supporting sustainability of land resources are vastly inadequate for addressing the full suite of impacts caused by poor grazing and ranch management, and for incentivizing the full suite of options of solutions.

Air/Greenhouse Gas Emissions (GHGs): The indicator is, "The cumulative emissions of pollutants, including particulate matter, greenhouse gases and other gaseous emissions from a sector for each process." The metric for this indicator is "*Has a grazing management plan (or equivalent) been implemented to protect or improve soil and plant community health, including soil carbon sequestration*."

a. Guidance materials fail to include various strategies for reducing enteric methane emissions. This is an important omission because an estimated 80% of beef's enteric methane emissions occur during the cow-calf phase.

b. In addition, the metric fails to provide advice on cost-effective means to track improvements in carbon sequestration either on ranch (e.g., using a simple proxy like soil aggregate stability), or at larger spatial scales (e.g., using remote monitoring technologies). While carbon sequestration rates vary considerably depending on multiple factors (e.g., climate, soils, topography, land use history, management quality), a recent study found that one well-managed pasture based system (in the Upper Midwest) generated no net emissions of greenhouse gasses. Given the many valuable benefits of carbon sequestration (it is important for not just GHG mitigation, but also soil health, grass productivity, and drought resilience), the framework should connect operators with means to measure continuous improvement in above and below-ground carbon sequestration.

c. The language, "to protect or improve" merely indicates intention and thus does not serve as a reliable indicator of air resource health. It should be changed to "that protects or improves."

d. The framework contains no explicit information on how to plan for predicted climate changes for a ranch's location. The guidance materials on contingency planning are important, but should include resources that enable producers to identify predicted climate changes in their location.

Use of Antibiotics and Animal Health and Welfare: We are especially concerned with the USRSB's materials regarding antimicrobial use. The framework does not acknowledge the need to *reduce* antibiotic use and to eliminate routine uses of medically important antibiotics for growth promotion and disease prevention purposes. Thus, the USRSB's "sustainability framework" will worsen, not help solve, the beef industry's overuse of antibiotics, which threatens the viability of critical human medicines.
The spread of antibiotic resistance, which is directly tied to antibiotic use both in human medicine and animal agriculture, is an urgent public health crisis that threatens to reverse the public health gains of the last century. While the USRSB document includes fourteen recommendations on antimicrobial stewardship as the indicator for animal health and welfare that would be good to implement, they do not go far enough. We are particularly disappointed that USRSB merely "discourages" subtherapeutic antibiotics uses and includes "disease prevention" as an accepted use of antibiotics.

In addition, the proposed metrics for animal health and welfare do not specifically refer back to the indicator and instead focus on a variety of animal health related activities in the Beef Quality

Assurance Program including a few related to antimicrobial stewardship. These metrics should clearly refer back to the fourteen recommendations in the indicator and include some measure of whether or not they are being followed and being effective in reducing inappropriate antibiotic use. Any attempt to address the sustainability of antibiotic use must include tracking antibiotic use per animal produced and include specific indicators related to reduction of antibiotic use and numbers and/or percent of animals treated.

Recommendations that apply to the cow-calf phase

1. **Invest in and support 100% well-managed grass fed beef operations**. Many benefits can be generated by well-managed grass-based and grass-finished livestock systems—yet the framework does not explicitly recognize, incentivize or otherwise support these far more sustainable grass-based and grass-finished systems. We urge the Roundtable to provide much greater attention to the support and development of well-managed grass-fed beef operations that can deliver grass fed beef to the growing number of consumers who are demanding grassfed meat. Currently 80% of grass-fed beef is imported.[3]

2. **Processors, wholesalers and retailers should provide fair pricing mechanisms, concrete purchasing preferences, and price premiums to credibly well-managed operations that provide verifiably more environmental benefits to society.**

3. **Improve the goals, indicators and metrics for the USRSB sustainability framework:** Develop indicators and metrics that address the full suite of supply chain impacts and incentivize the full suite of solutions to each, across operation types and regions. Use these metrics to establish specific goals for the industry, which could include transparent and regionally appropriate and specific and significant targets around:

- reductions in overall antibiotic use and ultimately the elimination of routine preventive use of medically important antibiotics; this is consistent with recommendations issued by the World Health Organization in November 2017.
- reductions in morbidity and mortality linked to major cattle pathogens;
- reductions in uses of synthetic fertilizers and pesticides (and improving input use efficiencies);
- reductions in *ALL* heat-trapping emissions generated by beef operations (carbon dioxide, enteric methane, manure methane, nitrous oxide) and increases in soil carbon sequestration (which enhances resilience to drought and extreme weather);
- decreases in the percentage of U.S. grassland, shrubland and woodland ecosystems (rangelands) and pasture lands that are overgrazed, and corresponding improvements in rangeland health assessment results and pasture management that improves soil health and topsoil levels over time;
- reductions in miles of U.S. waterways and expanse of U.S. aquifers polluted by livestock grazing and animal feeding operations;

[3] Nachman, K.E. & Smith, T.J.S. (2015). Hormone Use in Food Animal Production: Assessing Potential Dietary Exposures and Breast Cancer Risk, Curr Envir Health Rpt, DOI 10.1007/s40572-014-0042-8.

- reductions in the numbers of wild animals, especially predators, killed for livestock protection purposes (and in the percentage of cases of species listings under federal and state Endangered Species Acts that are attributable to poorly managed livestock operations);
- reductions in land use changes associated with beef production, especially in conversion of native grasslands to intensively managed hay and feed crop fields, with the goal of zero additional conversion and indeed the restoration of native habitat;
- improvements in animal welfare demonstrated by a significant increase in the percentage of products carrying a meaningful independent, third-party animal welfare certification including Certified Animal Welfare Approved by A Greener World, Grasslands Alliance, GAP, and Certified Humane;,
- increased sourcing of beef verified by meaningful independent grassfed and sustainability certifications including USDA Organic, American Grassfed Association, Certified Grassfed by A Greener World, Grasslands Alliance, and Food Alliance.
- increases in prices paid to producers for delivering higher quality beef produced using practices that generate measurable improvements in soil health, water and air quality, habitat quality and biodiversity, measurably less heat-trapping pollution, and improvements for public health, safe and fair working conditions, and animal welfare---with a focus on supporting meaningful pasture based grass finished systems that do not rely on feedlots or confinement; and
- reductions in labor violations in processing plants.

4. **Endorse and form partnerships with independent third-party certifiers of beef cattle products.** To make credible "sustainable" marketing claims, we encourage USRSB to use and/or endorse the best, most credible approach: partnerships with independent third-party auditing and certification organizations such as A Greener World, American Grassfed Association (AGA), USDA Organic Certifiers, Food Alliance, the Grasslands Alliance, and Predator/Wildlife Friendly. We encourage major supermarkets, restaurant chains, and beef brands to purchase a growing percentage of their beef from independent third-party certified sources over the next 5-10+ years (e.g., 25% within 5 years, 50% within 10 years, 100% by 2050). Such partnerships can use comprehensive sustainability standards not just for certification, but also as tools to guide continuous improvement on the journey to and beyond certification.

5. **USRSB corporate members should stop working to weaken, eliminate or otherwise undermine federal and state protections for America's environment, climate, public health, animal welfare, workers and producers.** A credible sustainable beef framework should seek to support federal and state protections that safeguard America's natural resources (e.g., air, water, soil, habitats and biodiversity), prohibit routine uses of antibiotics, and provide a fair economic return for producers, fair wages and safe conditions for workers, and higher animal welfare. If USRSB industry leaders and stakeholders are serious about sustainability, the USRSB should use its clout to address key policy needs to advance sustainability. These include:

- strengthening and enforcement of GIPSA rules
- eliminating the use of medically important antibiotics for purposes other than treatment of animals diagnosed with an illness, medical or surgical procedures, or to control an identified disease outbreak.
- supporting federal and/or state legislation requiring tracking of medically important antibiotic use and publicly reporting collected data on an annual basis.
- adoption of the organic animal welfare rule.

- banning hormones and growth promoters, including beta agonists.
- opposing the Farm Bill provisions originally proposed in the House Agriculture committee bill that eviscerate key conservation programs and gut environmental enforcement and states' rights to pass human health, environmental, and animal welfare protections.
- supporting increased conservation funding in the Farm Bill to enable greater technical assistance and support for producers.
- increases in the minimum wage for workers
- strong enforcement of existing Clean Water Act protections.
- strong enforcement of existing protections for America's native fish, wildlife and plant biodiversity, especially endangered species and habitats;

6. **USRSB members should pool resources and expand technical assistance to producers**. Producers urgently need more "feet on the ground" to help them implement better management systems and practices. Funding to support producer investments in management improvements and associated infrastructure is highly competitive and difficult to secure. We also strongly encourage the USRSB to publicly support increases in key Farm Bill conservation programs (including EQIP, CSP, CRP) that receive far more applications from eligible producers than can be approved.

7. **Invest in infrastructure—especially local processing facilities—that supports the growth of small and mid-scale production for local, regional and value-added markets.** Currently, many producers have trouble finding slaughtering facilities willing to separate grass-fed, organic, or otherwise more sustainable beef product. Processing facilities need a critical mass of animals, so it is hard for many small producers to find local options—requiring them to travel longer distances, which increases production costs and cuts into profits.

8. **Work with policy makers to create public/private investments in irrigation districts that need financial resources to improve infrastructure—particularly to offer producers flexible irrigation scheduling and pressurized water delivery,** which many producers currently lack. This prevents them from scheduling irrigation during cooler times of day to minimize evaporative losses, and from transitioning to more efficient water delivery technologies.

9. **Address barriers to greater sustainability on leased lands.** A significant challenge for producers who lease pasture (e.g., from private ranches, state trust lands, or federal public lands) is dealing with land tenure issues: ranchers who graze on leased lands often can't convince the landowner to invest in or allow infrastructure development associated with better management practices. We encourage USRSB to identify ways for producers who lease pasture to share benefits of sustainability with landowners.

10. **Address barriers to advancing sustainability on federal public land grazing allotments managed by the U.S. Forest Service (USFS) and U.S. Bureau of Land Management (BLM).**
- **There is an urgent need to incentivize better management of livestock grazing on federal public lands managed by the USFS and BLM**. Grazing management on these lands has long been challenging for various (and often complex) reasons. This is an area ripe for innovative, incentive-based solutions.
- **The beef industry must stop working to prevent, delay or weaken efforts to improve grazing management on federal public lands that are degraded by poor management.** This issue is important because a small proportion of U.S. beef production (probably

between 2-4%) (approximately 2000 operators) is negatively impacting ecosystem health, water quality, and biodiversity on 50-75 percent of public lands. Livestock, mostly beef cattle, graze over 200 million acres of federal public lands, and Public Employees for Environmental Responsibility reported that, "Overall, 30% of (BLM) allotments by area surveyed to date suffer from significant livestock-induced damage, suggesting that once the remaining allotments have been surveyed, the total impaired area could well be larger than the entire State of Washington." Grazing management on these lands is too often poor for various reasons – from conflicts among stakeholders over resource degradation, to outside political influence, to links between animal unit month (AUM) numbers, ranch property values, and associated bank loans. While there are some stories of bright spot agency managers and districts, vast areas of our public lands continue to be degraded by poor grazing management, leading to conflicts (and litigation) between agencies, ranchers, and conservationists. This is an area ripe for innovative, incentive-based solutions.

- We encourage the USRSB to identify ways to support "win-win" policy solutions for public lands grazing allotments plagued by issues of concern that make livestock production increasingly challenging such as federal grazing allotments located in regions plagued by (a) increasingly frequent and severe drought and declining economic viability of livestock production, and (b) frequent conflicts with valued keystone predators (e.g., grizzly bears, wolves) that inhabit a small percent of American lands. Specifically, **we urge the USRSB to support policies that offer producers in these situations the opportunity to permanently retire their grazing permits in exchange for property and grazing permits in areas more favorable for livestock production.**

11. **USRSB should work with partners in the insurance industry to offer (a) lower livestock loss and crop insurance premiums to producers who implement practices that improve soil health and resilience to our changing climate; and (b) lower livestock loss insurance premiums to producers who implement non-lethal practices for reducing conflicts with predators and other native wildlife**.

B. Comments on the US Roundtable on Sustainable Beef's "Sustainability" Framework-Feedyard Phase

Serious Impacts Require Serious Action

The beef industry's concentrated animal feeding operations, which pack together thousands of animals in tightly confined spaces, cause severe impacts:

- surface and groundwater pollution (by nutrients, pathogens, pesticides, heavy metals, and pharmaceuticals);
- aquatic dead zones that deplete fisheries and harm fishing communities;
- heat-trapping pollution that worsens the climate crisis;
- air pollution, including highly toxic gases such as ammonia and hydrogen sulfide, stomach-turning odor and particulate matter that sickens workers and families and reduces property values in neighboring communities;
- inefficient water use and freshwater depletion;

- an overreliance on antibiotics to manage health problems created by grain-based diets and unhealthy conditions, fueling the dangerous rise of antibiotic-resistant "superbugs";
- land conversion of native prairie to monoculture feed crop fields, reducing habitat and releasing millions of tons of carbon;
- declines in pollinators and predators of pests due to excessive use of toxic pesticides, particularly to genetically-modified feed crops;
- poor working conditions and
- inhumane treatment of animals.

Why Feedyard Phase Materials Fall Short

The USRSB's feedyard phase materials fall short of incentivizing the benefits of good management and minimizing the devastating environmental, public health, animal welfare, and community impacts of poor management. Similar to the issues outlined in the cow-calf section, ***the USRSB framework's indicators, metrics, and SAGs are vague, weak, and inadequate for reducing and minimizing impacts and enabling vitally needed progress.*** The USRSB's metrics fail to effectively and scientifically evaluate progress in reducing key impacts of beef production, including: surface, groundwater and air pollution; the climate crisis; the rise and spread of antibiotic resistant bacteria; and harm to fish, wildlife and biodiversity. Most of the USRSB's indicators and metrics do not focus specifically on *reducing* impacts. Instead, the metrics tend to be *practice-based* rather than results-based (mostly verifying the mere *development* of a nutrient management plan "or equivalent," not focused on its outcomes or even its implementation details). In that sense, **the metrics fail to serve as credible indicators of whether plans were effectively implemented and generate genuine improvements for America's lands, air, water, and communities.** Their vagueness—coupled with the lack of meaningful performance measures—raise major doubts that the USRSB's sustainability framework will produce significant improvements to livestock management in feedlots.

As with grazing operations, it is important to systemically identify the most serious feedyard phase impacts and options of BMP solutions to each. Top impacts that are not effectively addressed by the USRSB sustainability framework include:[4]

- **Surface and Groundwater pollution:** Feedlots – including and beyond beef – account for an estimated 55% of sediment pollution and 30+% of nutrient pollution in America's drinking water. Inadequately sealed and maintained manure runoff catchment and storage lagoons pollute thousands of miles of waterways and leak into aquifers. This pollution, along with runoff from farms that over-apply feedlot manure to crop fields (or apply it at the wrong time), may contain pathogens and harmful chemicals including pesticides, antibiotics, hormones, and heavy metals. Nutrient pollution attributable to feedlots also occurs when they source feed from farms that over-apply fertilizer, further contributing to aquatic dead zones.
- **The Climate Crisis:** Beef feedlots contribute to climate disruption via emissions of heat-trapping *enteric* methane (from cattle belching), *manure* methane (from storage lagoons), and nitrous oxide (from stored and applied manure and, indirectly, from over-applying fertilizer to the feed crops they rely on). Additional sources of heat-trapping pollution include carbon dioxide from 1) agrochemical production, 2) soils by conversion of native

[4] Gelbard, J. L. (2018). "What's Really 'Green'? A Look at Beef Grazing Operations." Triple Pundit. https://www.triplepundit.com/2018/01/sustainable-beef-grazing-operations/

ecosystems to feed croplands, and 3) poor management of feed crops (e.g., by degrading soils).

- **Air pollution:** Decomposing manure produces 160+ different gases. Odorous volatile organic compounds (VOCs) such as hydrogen sulfide and ammonia cause profound health impacts to agricultural communities. Other pollutants include particulates and pathogens. Studies of communities near feedlots document increased rates of depression, anger and fatigue. People living next to an Iowa feedlot had high rates of breath shortness, nausea, dizziness, and headaches. This pollution causes severe economic impacts. One study determined that Missouri CAFOs have lowered property values in surrounding communities by an average of $2.68 million.
- **Antibiotic-Resistant Superbugs:** America uses more antibiotics/lb. of meat produced than any other nation. According to the Food and Drug Administration, 80% of antibiotics sold in the U.S. are fed to livestock. Of that, feedlots use about 70% for "non-therapeutic" purposes (routine feeding of antibiotics to healthy animals to prevent disease and promote growth). Misuses of antibiotics breed antibiotic-resistant superbugs, reducing the effectiveness of critical life-saving medications.
- **Harm to Native Fish, Wildlife & Plant Biodiversity:** Feedlots and feed production harm our natural heritage in several ways:
    - Water pollution from feedlots and feed croplands causes fish kills. In 2010, a CAFO in Iowa discharged effluent that killed over 100,000 fish, with the economic impact of lost fish, alone, estimated at $100,000.
    - Nitrogen pollution of soils reduces biodiversity, worsens weed invasions, and increases use of herbicides toxic to fish and wildlife. Over-applying herbicides creates "superweeds", escalating a cycle in which farms use increasingly harmful chemicals.
    - Feed crops largely come from vast monoculture farms devoid of biodiversity. Many convert native ecosystems to croplands, destroying native plant and wildlife habitats. They also use controversial pesticides that endanger pollinators;
    - Feed often includes genetically-modified grains that have been irresponsibly deployed, resulting in unintended consequences such as declines in monarch butterflies;
    - Even feedlot pharmaceutical use can harm fish and wildlife. Conservation Magazine reported that, "resistant bacteria have started spilling into the environment and trickling into a variety of species," from marine mammals and seabirds to fish. As one researcher noted, "we're finding similar pathology…in marine mammals to what we're seeing in our livestock cases." According to the article, "the pathway from factory farm to sea is likely manure that runs off into streams and ends up in the ocean."

While we urge the industry to greatly expand sourcing and production of grassfed beef produced on verifiably well-managed ranches (as certified by a comprehensive independent third-party labeling program), better-managed feedlots – including feed production – can reduce many of the above impacts

Looking at the big picture, reintegrating crop and livestock operations – precisely fertilizing crops with animal waste and feeding animals crop wastes – is drawing renewed interest for its important benefits. These include reduced fertilizer and manure disposal costs, and protection against pollution-related risks.

Below, we provide selected examples of how USRSB's feedyard sector materials fall short of addressing the above impacts, and incentivizing and enabling the above positive outcomes:

Water resources: for this and all other feedyard sector indicators, the language is the same as for cow-calf sector indicators. The metric is "*Are water resource management strategies implemented at the feedyard that address water management, water use optimization, and conservation, and water quality*?"

a. This metric fails to verify whether feedyards are in fact generating favorable results such as good and improved water quality and water use efficiency. Simply requiring producers to "address" water conservation and water quality does not indicate sustainability. "Address" should be changed to an action verb that that explicitly indicates good and/or improving (e.g., "protect and improve").
b. There are some good assessment questions included in the guidance. Much of it relies on Clean Water Act-related protections. These protections are not enough to verify "sustainable" management because enforcement resources vary considerably by state. Even for permitted feedlots, examples of polluting discharges and fish kills are numerous, especially in states where enforcement agencies are severely understaffed.
c. Given the increasing frequency of severe (e.g., 100+ year) rain events in our changing climate, building facilities to withstand 25 –year storm events is no longer adequate to prevent discharges. We urge USRSB members to review current and predicted rainfall trends and update this recommendation (e.g. to 100+ years) to reflect local to regional increases in the frequency of severe rain events.
d.. USRSB relies on Field to Market indicators for measuring the water impacts of feed production. Feed production for beef in many areas of the U.S. is responsible for rapid depletion of groundwater supplies, major nutrient and pesticide pollution, declines in pollinators from bees to monarch butterflies; and land conversion, among other things. The framework does not specify which Field to Market indicators USRSB will use or how USRSB will work with Field to Market to incentivize and enable more sustainable feed production. Simply stating that it is a different type of operation and relying on Field to Market to measure progress is inadequate for credibly detailing how USRSB will curtail related impacts of beef production. **This omission constitutes a major loophole for the USRSB framework.** First, there is no definition of what "sustainably produced" feed actually means. In addition, if it is relying on the Global Roundtable on Sustainable Beef's definition, which requires use of sustainably produced feed only "where available," this means that beef producers can carry on sourcing whatever feed they like simply by claiming that sustainable feeds are not available.

Air and GHGs: The metric is "*Are strategies in place to manage air and greenhouse gas emissions (GHGs)?"*

a. This metric will fail to measure whether feedyards are reducing and minimizing air and greenhouse gas emissions to their potential. First it is practice based, which has the limitations noted above.
b. Second, the metric merely asks whether strategies are in place to "manage" air and greenhouse gas emissions, when the goal should be to "reduce and/or minimize" emissions. Without making this change, the metric is vague, weak, and overall inadequate for measuring whether feedyards are doing their part to solve the climate crisis.

c. Third, the guidance recommends use of hormones and beta-agonists to reduce time to slaughter and thus lifecycle enteric methane emissions, without noting the controversy surrounding these technologies. Credibly sustainable beef operations that take into account human health and animal welfare concerns do not rely on the use of hormones or beta-agonists for growth. One popular Beta Agonist, Ractopamine, has been banned in 160 countries and is linked to major health and behavioral concerns in animals such as cardiovascular stress, muscular skeletal tremors, increased aggression, hyperactivity and acute toxicity.[5] As Temple Grandin noted in an article about a second Beta Agonist, Zilmax, "Tyson announced it would stop buying cattle fed the beta-agonist Zilmax™ because some animals at its packing plant were "unable to move and had difficulty walking." Other meatpackers later announced they would no longer accept cattle fed Zilmax as well."[6] The use of hormones to promote faster growth in animals is also of grave concern. Environmental exposure to hormones-even at low levels-have shown negative reproductive and other healthy concerns. For example some studies found links between Zeranol intake and increased breast cancer risk.[7] For these and other reasons Europe has banned the use of hormones in beef production.
d. Overall the guidance merely provides a list of links to resources for improving manure management (including storage and application), and notes that it is "not intended to be an exhaustive list". It relies on individual operators to click through all these links to find solutions that they can implement. This is really all the USRSB can do to support feedlot operators in reducing their air and GHG emissions? Certainly USRSB can do better in illustrating options of how BMPs can reduce the impacts of poor manure management.

Land resources: The metric is, "*Has a nutrient management strategy or plan been implemented*".

a. As with other practice-based metrics, this approach to measuring the status of land resources will tell us nothing about actual results for reducing nutrient pollution caused by the beef

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[5] Poletto, R. Cheng, H.W., Meisel, R.L., Garner, J.P., Richert, B.T., Marchant-Forde, J.N. (2010). Aggressiveness and Brain Amine Concentration in Dominant and Subordinate Finishing Pigs Fed the ß-Adrenoreceptor Agonist Ractopamine. Journal of Animal Science. 88(3), 3107- 20.http://www.prairieswine. com/wp-content/uploads/2011/08/1184.full_.pdf ; Poletto, R., Meisel, R.L., Richert, B.T., Cheng, H.W., Marchant-Forde, J.N. . (2009). Behavior and Peripheral Amine Concentrations in Relation to Ractopamine Feeding, Sex, and Social Rank of Finishing Pigs. Journal of Animal Science, 88(3), 1184- 94.https://naldc.nal.usda.gov/download/41673/PDF ; Consumers International. (2012). "Comments on the Discussion Paper of the Electronic Working Group on Issues Related to Standards Held at Step 8." ("[P]igs taking ractopamine were reported to have suffered adverse effects—hyperactivity, trembling, broken limbs, inability to walk and death."); James, B. W.; Tokach, M. D.; Goodband, R. D.; Nelssen, J. L.; Dritz, S. S.; Owen, K. Q.; Woodworth, J. C.; Sulabo, R. C. (2013). Effects of dietary L-carnitine and ractopamine HCl on the metabolic response to handling in finishing pigs. Journal of Animal Science, 91(9):4426-39.At: https://www.asi.k-state.edu/doc/swine-day-2004/p158handlingxpayleanxcarnitine.pdf .(stating that "Ractopamine fed pigs are leaner than counterparts not fed RAC. Increased muscling or leanness is likely to predispose the pig to greater physiological effects of stress."); Food and Drug Administration, Center for Veterinary Medicine. Adverse Drug Effects Comprehensive Clinical Detail Listing 1/1/1987 thru 3/31/2011, Drug Listing: N thru S: 177-84. Retrieved on 15 July 2015 from http:// web.archive.org/web/20110426003851/http://www.fda.gov/downloads/AnimalVeterinary/SafetyHealth/ProductSafetyInformation/UCM055411.pdf (last visited Dec. 17, 2012) (listing adverse drug effects for horses, pigs, cattle, turkeys, dogs, and humans).

[6] Kay, S.(2013). "More Packers to Stop Taking Zilmax-Fed Cattle." Cattle Buyers Weekly, http://www.beefmagazine.com/processors/more-packers-stop-taking-zilmax-fed-cattle

[7] Nachman, K.E. & Smith, T.J.S. (2015). Hormone Use in Food Animal Production: Assessing Potential Dietary Exposures and Breast Cancer Risk, Curr Envir Health Rpt, DOI 10.1007/s40572-014-0042-8.

feedyard sector. It is therefore vastly inadequate for determining whether individual operators and the sector at large are making progress in reducing this pollution.

b. This metric fails to explicitly address one of the most serious impacts of poor feedlot management: the collection of vast quantities of manure that comes from raising thousands of animals on one facility. Poorly constructed, maintained, and managed manure storage infrastructure, including lagoons, runoff catchment basins, and heaps are a major source of land, air and water pollution, including heat-trapping emissions. Yet the USRSB fails to establish any concrete metrics for responsible manure management – management that credibly reduces the impacts described above.

Animal health and welfare and antibiotics use: We are especially concerned with the USRSB's materials regarding antimicrobial use. The framework does not acknowledge the need to *reduce* antibiotic use and to eliminate routine uses of medically important antibiotics for growth promotion and disease prevention purposes. We are particularly disappointed that USRSB merely "discourages" subtherapeutic antibiotics uses and includes "disease prevention" as an accepted use of antibiotics. Thus, the USRSB's "sustainability framework" will worsen, not help solve, the beef industry's overuse of antibiotics, which threatens the viability of critical human medicines.

The spread of antibiotic resistance, which is directly tied to antibiotic use both in human medicine and animal agriculture, is an urgent public health crisis that threatens to reverse the public health gains of the last century. While the USRSB document includes fourteen recommendations on antimicrobial stewardship as the indicator for animal health and welfare that would be good to implement, they do not go far enough.

In addition, the proposed metrics for animal health and welfare do not specifically refer back to the indicator and instead focus on a variety of animal health related activities in the Beef Quality Assurance Program including a few related to antimicrobial stewardship. These metrics should clearly refer back to the fourteen recommendations in the indicator and include some measure of whether or not they are being followed and being effective in reducing inappropriate antibiotic use. Any attempt to address the sustainability of antibiotic use must include tracking antibiotic use per animal produced and include specific indicators related to numbers and/or percent of animals treated. Most feedlots feed the first-line medically important antibiotic, tylosin, to all cattle for the entire feeding period to reduce liver abscesses that result from inappropriate high-energy diets. This practice contradicts multiple recommendations in the list, so there should be metrics that measure how this and other practices inconsistent with the indicator are curtailed and eventually eliminated
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Recommendations that apply to the feedyard phase

Ten Recommendations for USRSB

1. **Processors, wholesalers and retailers should provide fair pricing mechanisms, concrete purchasing preferences, and price premiums to credibly well-managed operations that provide verifiably more environmental benefits to society.**

2. **Improve the goals, indicators and metrics for the USRSB sustainability framework:** Develop indicators and metrics that address the full suite of supply chain impacts and incentivize the full suite of solutions to each, across operation types and regions. Use these metrics to establish

specific goals for the industry, which could include transparent and regionally appropriate and specific and significant targets around:

- reductions in overall antibiotic use and ultimately the elimination of routine preventive use of medically important antibiotics; this is consistent with recommendations issued by the World Health Organization in November 2017.
- reductions in morbidity and mortality linked to major cattle pathogens;
- reductions in uses of synthetic fertilizers and pesticides (and improving input use efficiencies);
- reductions in *ALL* heat-trapping emissions generated by beef operations (carbon dioxide, enteric methane, manure methane, nitrous oxide) and increases in soil carbon sequestration (which enhances resilience to drought and extreme weather);
- reductions in miles of U.S. waterways and expanse of U.S. aquifers polluted by livestock grazing and animal feeding operations;
- reductions in land use changes associated with beef production, especially in conversion of native grasslands to intensively managed hay and feed crop fields, with the goal of zero additional conversion and indeed the restoration of native habitat;
- improvements in animal welfare demonstrated by a significant increase in the percentage of products carrying a meaningful independent, third-party animal welfare certification including Certified Animal Welfare Approved by A Greener World, Grasslands Alliance, GAP, and Certified Humane;,
- increased sourcing of beef verified by meaningful independent grassfed and sustainability certifications including USDA Organic, American Grassfed Association, Certified Grassfed by A Greener World, Grasslands Alliance, and Food Alliance.
- increases in prices paid to producers for delivering higher quality beef produced using practices that generate measurable improvements in soil health, water and air quality, habitat quality and biodiversity, measurably less heat-trapping pollution, and improvements for public health, safe and fair working conditions, and animal welfare---with a focus on supporting meaningful pasture based grass finished systems that do not rely on feedlots or confinement; and
- reductions in labor violations in feedlot facilities

3. **Endorse and form partnerships with independent third-party certifiers of beef cattle products.** To make credible "sustainable" marketing claims, we encourage USRSB to use and/or endorse the best, most credible approach: partnerships with independent third-party auditing and certification organizations such as A Greener World, American Grassfed Association (AGA), USDA Organic Certifiers, Food Alliance, the Grasslands Alliance, and Predator/Wildlife Friendly. We encourage major supermarkets, restaurant chains, and beef brands to purchase a growing percentage of their beef from independent third-party certified sources over the next 5-10+ years (e.g., 25% within 5 years, 50% within 10 years, 100% by 2050). Such partnerships can use comprehensive sustainability standards not just for certification, but also as tools to guide continuous improvement on the journey to and beyond certification.

4. **USRSB corporate members should stop working to weaken, eliminate or otherwise undermine federal and state protections for America's environment, climate, public health, animal welfare, workers and producers.** A credible sustainable beef framework should seek to support federal and state protections that safeguard America's natural resources (e.g., air, water, soil, habitats and biodiversity), prohibit routine uses of antibiotics, and provide a fair economic

return for producers, fair wages and safe conditions for workers, and higher animal welfare. If USRSB industry leaders and stakeholders are serious about sustainability, the USRSB should use its clout to address key policy needs to advance sustainability. These include:

- strengthening and enforcement of GIPSA rules
- eliminating the use of medically important antibiotics for purposes other than treatment of animals diagnosed with an illness, medical or surgical procedures, or to control an identified disease outbreak.
- supporting federal and/or state legislation requiring tracking of medically important antibiotic use and publicly reporting collected data on an annual basis.
- adoption of the organic animal welfare rule.
- banning hormones and growth promoters, including beta agonists.
- opposing increases in speed of the lines in processing plants.
- opposing the Farm Bill provisions originally proposed in the House Agriculture committee bill that eviscerate key conservation programs and gut environmental enforcement and states' rights to pass human health, environmental, and animal welfare protections.
- supporting increased conservation funding in the Farm Bill to enable greater technical assistance and support for producers.
- Increases in the minimum wage for workers
- Increased transparency and data collection including toxic emissions generated by CAFOs.
- strong enforcement of existing Clean Water Act protections. Many states lack adequate funding for enforcement of existing Clean Water Act protections. The beef industry should stop combating these protections and work with stakeholders to develop well-crafted and effective pollution-reduction solutions where needed.
- strong enforcement of existing protections for America's native fish, wildlife and plant biodiversity, especially endangered species and habitats;

5. **USRSB members should pool resources and expand technical assistance to producers**. Producers urgently need more "feet on the ground" to help them implement better management systems and practices. Funding to support producer investments in management improvements and associated infrastructure is highly competitive and difficult to secure. We also strongly encourage the USRSB to publicly support increases in key Farm Bill conservation programs (including EQIP, CSP, CRP) that receive far more applications from eligible producers than can be approved.

6. **Invest in infrastructure—especially local processing facilities—that supports the growth of small and mid-scale production for local, regional and value-added markets.** Currently, many producers have trouble finding slaughtering facilities willing to separate grass-fed, organic, or otherwise more sustainable beef product. Processing facilities need a critical mass of animals, so it is hard for many small producers to find local options—requiring them to travel longer distances, which increases production costs and cuts into profits.

7. **Work with policy makers to create public/private investments in irrigation districts that need financial resources to improve infrastructure—particularly to offer producers flexible irrigation scheduling and pressurized water delivery,** which many producers currently lack. This prevents them from scheduling irrigation during cooler times of day to minimize evaporative losses, and from transitioning to more efficient water delivery technologies.

8. **USRSB should work with partners in the insurance industry to offer (a) lower livestock loss and crop insurance premiums to producers who implement practices that improve soil health and resilience to our changing climate; and (b) lower livestock loss insurance premiums to producers who implement non-lethal practices for reducing conflicts with predators and other native wildlife**.

If the beef industry is truly committed to supporting a scaled-up system for sustainability, we strongly encourage USRSB to address the concerns and recommendations that we have shared above. The goal should be to develop a well-designed *solution system supported by effective federal and state policies and protections* that (1) incentivize, enable and sometimes mandate good and improving management; (2) offer producers extensive technical assistance and increasing benefits for better results, and thus (3) generate a "*race to the top"* in which major retailers and brands *both* use the USRSB framework to raise the floor of their beef supply chains, and purchase an increasing percentage of their beef at fair prices from independent third-party certified sustainable suppliers.