



Balancing Food Safety and Sustainability

Opportunities for co-management

Growers and distributors of fresh produce have long realized that reliably safe products and responsible use of resources inspire brand trust and consumer loyalty. Balancing food safety and sustainability goals has become a vital element of produce industry management throughout the supply chain.

On their farms, growers are active stewards of the land, protecting soil and water quality as well as supporting wildlife populations by preserving their habitat. At the same time, growers must ensure that their crops are free from contamination by fecal matter, which may introduce pathogens that can cause foodborne illnesses. Balancing these unique management objectives while maintaining a sound bottom line is a central challenge.

The fresh produce industry provides many examples of programs that help sustain natural resources while protecting public health. It has

Co-management offers a solution

Co-management minimizes the risk of fecal contamination and the resulting microbiological hazards associated with food production while simultaneously conserving soil, water, air, wildlife and other natural resources.

established effective programs such as innovative wash and packaging processes to reduce food safety risk, sustainable harvest practices and water quality protection programs.

By working together, food safety and sustainability managers can build understanding of how food safety practices may affect natural resources, and how conservation practices affect food safety. Building understanding of co-management into all levels of management—from farm to fork—will ensure that the fresh produce industry continues to lead the way to successful balance of food safety, sustainability and a sound bottom line.

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Co-management to protect food safety and natural resources

Decisions made all along the supply chain can affect the degree of co-management challenges. Produce buyers communicate their need for reliably safe products through audit programs to growers whose produce they buy. The design and implementation of these audit programs can have profound impacts on field level management, and in turn impact the co-management of food safety and sustainability. In addition, fresh produce growers are seeking ways to balance their need to produce safe food and maintain economic sustainability with their natural resource goals and legal obligations to protect environmental quality. Growers may feel compelled to limit the use of or even remove established conservation practices if they perceive them to present food safety risks. Co-management is demonstrated when all stakeholders are aware of the importance of blending food safety and sustainability goals in order to optimize both.

How co-management works

Co-management is science-based, adaptive and collaborative. It is a decision-making framework that recognizes that practices designed to conserve natural resources may impact food safety, and vice versa. Figure 2 on the opposite page helps illustrate: Bare-ground buffers around crops are often preferred by produce buyers as they allow food safety managers to observe tracks indicating animal intrusion in the crop, but vegetated buffers are far more effective at reducing movement of pollutants to surface waters. A co-management approach might minimize the use of bare-ground buffers near waterways to reduce adverse impacts on water quality management. Food safety professionals with co-management savvy will also recognize that vegetated buffers between animal use areas (such as rangeland and cropland) will minimize the movement of pathogens in surface flow toward the crop, particularly in sloped terrain.

Research shows that conservation practices such as retention basins and grassed waterways can reduce sediments, nutrients and pesticides in runoff from agricultural fields. These practices reduce pollutants entering surface waters, but they may not allow discharge water from produce fields to completely meet regulatory mandates to protect water quality. Stringent water quality rules that protect public health and beneficial uses (such as recreation use and wildlife habitat) are often difficult to attain, and they can create frustration and strain among those charged with protecting water quality and other stakeholders. Lack of certainty regarding food safety risks presented by wildlife and difficulties achieving compliance with state-mandated water quality programs for agricultural discharges present co-management challenges. In crucial conversations with food safety professionals, growers may find themselves defending conservation practices that are of concern without clear evidence that these practices result in discharge water that meets instream water quality mandates.

Effectively co-managing food safety and conservation objectives is extremely challenging for the produce industry at all levels of the supply chain. Professionals all along the supply chain, from growers to auditors and buyers, face the challenge of making decisions with information that offers incomplete or inconclusive guidance and do so in a regulatory/ business environment that demands decisive action and demonstrated effectiveness. Because individuals charged with managing either food safety or sustainability programs may not have training to help them understand concerns for both food safety and sustainability, it is essential that these managers work as partners. By partnering, they can share expertise to shape effective co-management strategies.

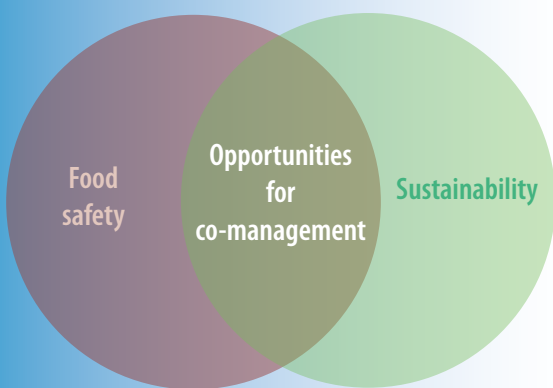


Figure 1

Co-management opportunities can be found throughout the supply chain by blending food safety and sustainability programs.



Strategies to support co-management

Co-management requires networking among stakeholders to understand different types of risks in the produce industry, including food safety, natural resource degradation and the economic risks of adopting alternative management practices. To support effective co-management strategies, the following approaches are essential:

- Encourage realistic, frank discussion of co-management challenges and solutions at all levels of the supply chain, from large company policies to field-level practices of individual growers.
- Recognize instances where food safety or sustainability objectives are out of balance. Encourage collaboration between managers for food safety and sustainability programs, as well as those charged with implementing policies and practices addressing either food safety or sustainability all along the supply chain.
- Design and implement food safety programs so that both internal food safety programs and audits and outside programs and audits (e.g., third-party independent businesses hired to verify that food safety protocols have been observed in production of the crop) seek guidance from stakeholders skilled in recognizing impacts on sustainability objectives. Food safety and sustainability program leaders can support co-management by coordinating their review processes.

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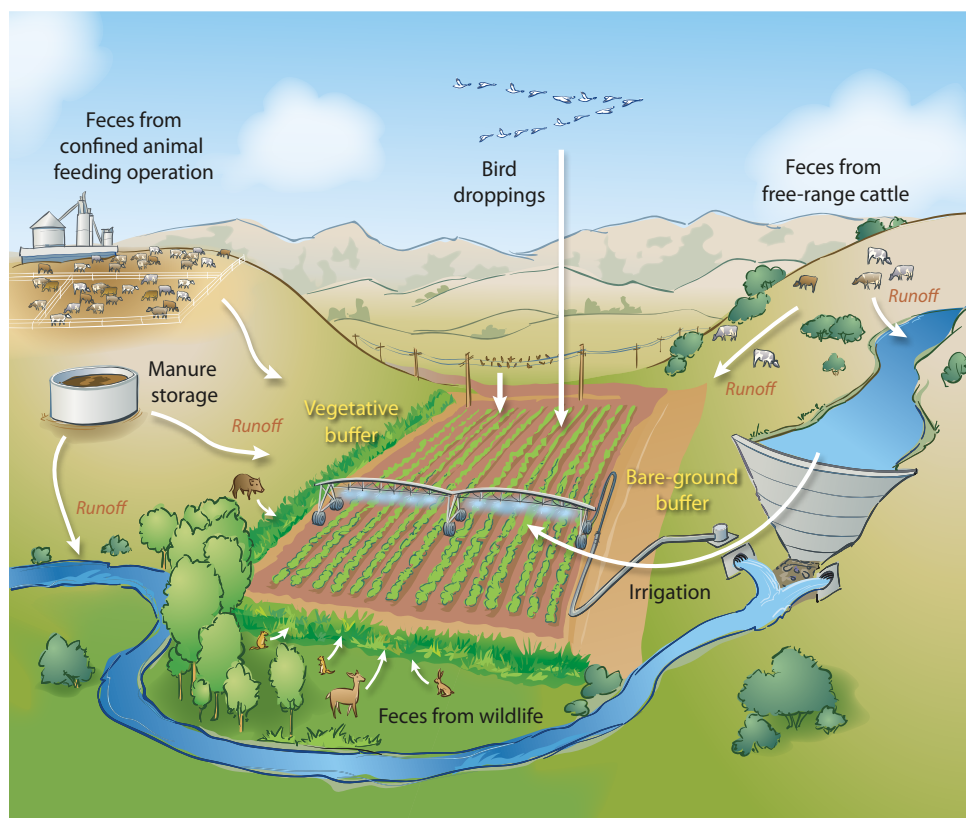


Figure 2 is an example of options for addressing co-management challenges at the field level. Vegetated buffer strips (on left and below vegetable field) placed above and below fields can help improve water quality by filtering runoff into and off farm land. Such strips may make it hard to monitor animal intrusion into fields and can create habitat for wildlife. Bare-ground buffers (on right of vegetable field) help in monitoring animal activity, but they are less effective than vegetated buffers in removing pollutants in runoff that may affect streams and rivers. A co-management approach might use bare-ground buffers in strategic areas and vegetated buffers adjacent to streams and rivers.



How can policy makers influence co-management success?

- Encourage continued cooperation of and transparency from the fresh produce industry decision- and policy makers.
- Support regulatory guidance that seeks and incorporates emerging knowledge as a matter of routine (e.g., National Organics Program, Leafy Green Handlers Marketing Agreement, recent law and pending Food Safety Modernization Act rules and the resulting industry response and activity with regards to co-management).
- Participate in multi-disciplinary review of all rules and regulations and fund co-management research, including both food safety and sustainability focused research questions.
- Seek and support the development of science-based information to guide decisions.



For more information

Resources shown below indicate the breadth of both individual natural resource and food safety issues as well as co-management literature and efforts. They are not intended to be comprehensive. You can also contact Mary Bianchi, UC Cooperative Extension Advisor in San Luis Obispo and Santa Barbara counties at mlbianchi@ucdavis.edu.

Natural Resources Programs

USDA Natural Resources Conservation Service
– Conservation Programs <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs>

Understanding Water Quality for Agriculture

Farm Water Quality Planning website <http://ucanr.org/sites/farmwaterquality/>

State and Federal Approaches to Control of Nonpoint Source Pollution <http://anrcatalog.ucdavis.edu/pdf/8203.pdf>

Central Coast Regional Water Quality Control Board Irrigated Lands Program http://www.swrcb.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml

EPA. 2011. Water Quality Handbook– Chapter 4: Antidegradation (40 CFR 131.12) <http://water.epa.gov/scitech/swguidance/standards/handbook/chapter04.cfm#section6> (Verified December 21, 2011)

Food Safety Programs

Food Safety Working Group Report http://www.whitehouse.gov/sites/default/files/fswg_report_final.pdf

University of California – UC Food Safety <http://ucfoodsafety.ucdavis.edu/>

Food Safety Modernization Act <http://www.fda.gov/Food/FoodSafety/FSMA/default.htm>

Co-management

Safe and Sustainable: Co-Managing for Food Safety and Ecological Health in California's Central Coast Region. San Francisco, CA. and Washington, D.C: The Nature Conservancy of California and the Georgetown University Produce Safety Project <http://www.producesafetyproject.org/admin/assets/files/wildlife.pdf>

Cornell University Produce Safety Alliance <http://producesafetyalliance.cornell.edu/psa.html>

- Engage multidisciplinary teams from within the produce industry and beyond the industry (e.g., resource management agency personnel) who may provide a robust review of management policies and practices to anticipate co-management challenges. These consultations may reduce unintended consequences of poorly executed co-management.
- Consider cultural aspects of communication about co-management, such as within and between corporations, environmental advocacy groups, and government agencies. Consider how communication is typically shared, what information source is most credible for a given audience, etc.
- Work collaboratively to ensure that a co-management approach is incorporated in all levels of industry-wide discussion. For example, the Cornell Produce Safety Alliance has engaged representatives from many areas of the produce industry in efforts to capture co-management processes in training materials for small farmers.
- Support the development and application of decision support tools, and assure ready access to knowledge and tools by all interested stakeholders.

For more information, contact Mary Bianchi at 805-781-5949 or mlbianchi@ucdavis.edu

For a copy of this brief and additional materials online see http://ucfoodsafety.ucdavis.edu/Preharvest/Co-Management_of_Food_Safety_and_Sustainability