Solutions from the Land

Developing a New Vision for United States Agriculture, Forestry, and Conservation

Executive Summary

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Developing a New Vision for United States Agriculture, Forestry, and Conservation

VISION: In 2050, U.S. farmers, ranchers, and foresters manage land to produce the food, fiber and energy needed to support a growing population and economy, while simultaneously protecting and improving biodiversity and the health of the environment.

MISSION: SFL's mission is to bring together a broad range of stakeholders to identify and implement policies and practices to enable land to be sustainably managed to produce food, feed, fiber and energy while protecting and improving critical environmental resources.

"SFL asserts that the wise management of life systems and resources can deliver abundance instead of scarcity."

Throughout the history of civilization, transforming landscapes for the production of food, fiber, and fuel has been a necessary transaction between humans and the natural environment. Agriculture and forestry — the intentional management of life systems — now sustains humanity and its domesticated animal populations throughout the world.

Here in the 21st century, we have the capacity to adequately feed a world without destroying ecosystems and biodiversity. Sadly, we often lack the will to do so. The most pressing question for the coming decades is whether we can maintain the capacity and marshal the collective will to do both.

There is no guarantee that we can meet this challenge on our current trajectory. In fact, the current global pressures of population, resource depletion, and climatic changes will combine with other factors to create a scenario of unpredictable harvests and scarcity. Furthermore, these changes are occurring in the midst of changing government support for land management.

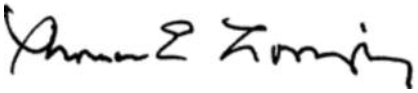
But success is still possible. By converging our knowledge, experience, and wisdom, we can achieve a task of great consequence. Solutions from the Land — a dialogue that aims to find compatible new pathways for land management — asserts that the wise management of life systems and resources can deliver abundance instead of scarcity. Land-based solutions can continue to bring multiple benefits for both producers and the environment.

Throughout the world and here in the United States, innovative practices are taking place on farms, ranches, and forests. This report highlights some exciting progress and identifies a number of near- and long-term actions with potential to realize the full range of solutions that farmers, ranchers, and foresters can deliver from the land.

Thought leaders from agriculture, forestry, and conservation participated in a three-year dialogue to produce this report. These volunteers worked tirelessly, and we thank them for their dedicated and enthusiastic input. Please review their recommendations and the examples we've shared with you here, and join us in the continuing dialogue on Solutions from the Land.

AG Kawamura, *Co-Chair*

Founding Partner of Orange County Produce, LLC, and former Secretary, California Department of Food and Agriculture



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In the 21st century, land managers will be increasingly called upon to do more with less. Both at home and across the globe, they will be asked to produce more agricultural products, forestry products, and ecosystem services while reducing their inputs and environmental effects. This is a significant challenge, but it brings new opportunities.

In 2009, a dialogue began among leaders in the United States farm and forestry communities, global and national experts, policy makers, and environmental organizations. This project became known as Solutions from the Land. The participants have varied backgrounds and perspectives, but we share a common premise: the future will be filled with challenges, opportunities, and risks that will require cooperative thinking and action if we are to keep the land — and, by extension, our human communities — healthy and productive. Ultimately, Solutions from the Land seeks to develop a robust vision for American agriculture, forestry, and conservation that will equip us to meet the multiple needs of the 21st century through adaptive, resilient land management.

This report outlines ongoing land management challenges and proposes a vision for producing more agricultural and forestry products and ecosystem services with fewer inputs and environmental impacts. It also offers recommendations for realizing this vision, with several near-term actions that collaborating partners might undertake to accelerate success.

Land Policies, Land Use, and Current Trends

As of 2007, the United States had 357 million acres of active cropland and about 33 million acres of land in the Conservation Reserve Program. Overall, the amount of active cropland has declined by about 15 percent since 1982, mostly from a loss of cultivated cropland; the amount of uncultivated cropland (orchards, vineyards, etc.) actually increased.

Roughly one-third (about 751 million acres) of the United States is covered by forest, and forests have been increasing slowly. The amount of protected forestland has tripled since 1953, with 10 percent (some

75 million acres) currently in reserve. Ninety-two percent of the harvested timber comes from privately-owned forests, with the greatest amount coming from the South.

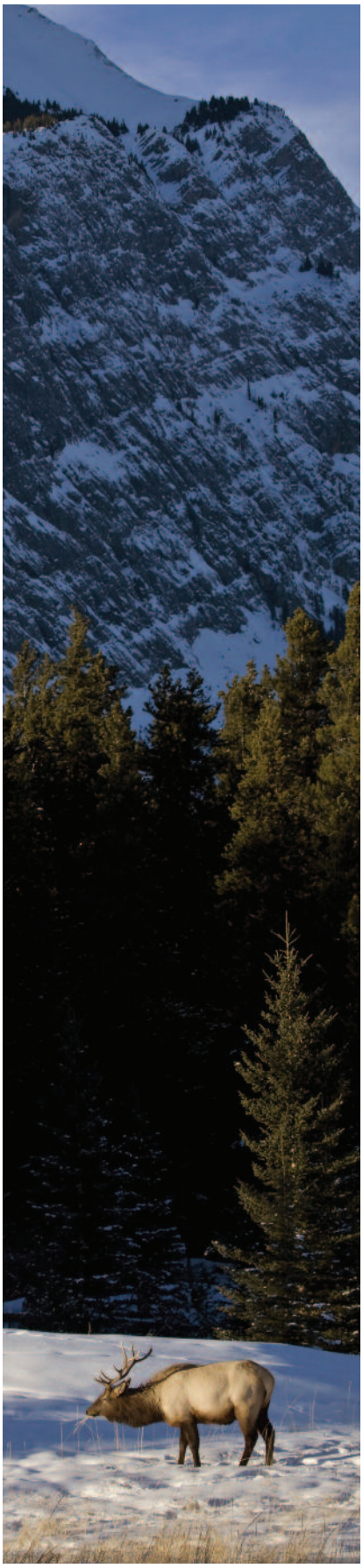
Energy needs and resources are having an enormous impact on land management. The rising cost of energy means a rising cost of business, and the extraction of coal, oil, and gas affects the land itself. The need for diverse sources of fuel has brought renewed attention to wood-based energy and sparked corn production for ethanol. Solar, wind, and geothermal energy all have important land use implications and involve a range of stakeholders—from land owners and managers to conservationists and consumers. Such renewable energy markets can bring new sources of income to farm and forest operations, and stabilize narrow profit margins.

At the same time, development and sustainability concerns are drawing increasing attention to the ecosystem services that the land provides beyond traditional products, such as protecting clean air and water and reducing the effects of climate change. The importance of these services has been increasingly acknowledged and they are beginning to enter the market with a defined value.

Over the last century, American farmers and livestock producers have become incredibly productive through public and private investments in research, technology, and infrastructure. These gains in productivity have led to lower food costs for U.S. consumers, but at the same time, have made financial survival more difficult for producers. Success now relies on more fertilizer, more pesticides and new seed varieties. More recently, farm practices have begun to reduce inputs while maintaining productivity, reflecting a response to both market and regulatory conditions.

The last 40 years have also seen a rise in forest sector productivity and new management practices in privately-owned forests. Timber, however, does not receive price supports and the industry profitability is directly linked to market demand. Business has been especially difficult, with a slow domestic recovery from the economic crisis, uncertainty in European markets, and other factors. As in agriculture, private and public investments have led to research and programs that have increased productivity, but these investments cannot be viewed as a one-time effort.

Recent decades have also brought new stakeholders to the table. Policy discussions about land management once involved mostly the people that were on the land. Today, from the local level to the federal, these policies attract people from many different organizations, viewpoints, and value systems. Environmental and wildlife organizations have strong positions on Farm Bill provisions, as do growers, processors, and exporters. We need much better ways of handling diverse agendas than the current approach of regulation and litigation — and a multi-stakeholder dialogue is an important first step.



Challenges for Land Management

Now more than ever, land management must take into account a wide range of goals that address both production and environmental sustainability. This means shifting the focus from single commodities to a broader range of goods and services — including food, fiber, and meat to biodiversity, clean water and air, carbon sequestration, and more. This transition must take place alongside the pressure of increasingly "urbanized" rural neighborhoods and the associated loss of prime farmland to development. Land managers need to understand and address the uncertainty that derives from these challenges, both as they exist now and as they are poised to change in the future.

1. **Loss of working lands:** Between 1982 and 2007, most of the rural land converted to development included more than 11 million acres of cropland, 12 million acres of pasture and rangeland, and 16 million acres of forestland. These conversions cut into agricultural production and are, for all practical purposes, permanent. Private forestland is also being lost to development, especially in fast-growing areas such as the South; increasingly smaller parcels can be more difficult to manage, provide fewer wildlife benefits, and be more vulnerable to invasive species and insect pests.
2. **Conflicting policies and inadequate rewards for ecosystem services:** Land managers contend with a dizzying array of uncoordinated regulations and policies for production, conservation, energy, and climate concerns. They also face layered administrative requirements that add to the cost of managing land, whether or not the net environmental trade-offs are consistent with the public interest. Sustainable production chains and ecosystem markets could help achieve some policy objectives more efficiently, but they have not yet been developed to their full potential.
3. **Declining investments in research and innovation:** Public support for research and outreach programs has declined severely in recent years. Challenges also lie with the dissemination and use of research. An overwhelming quantity of useful information has not been effectively integrated, interpreted, and presented to those who can use it.
4. **The changing climate:** To the extent that the predictions of global climate change are borne out, the impacts on agriculture and forestry, as well as the protected lands such as parks or wilderness areas, will be significant. A change in carbon dioxide levels could increase weed growth and leave animal agriculture with less nutritious forage, needing to consume more to achieve the same level of nutrients. Higher temperatures, along with greater extremes of rain and drought, will strain crops, forests, and livestock.
5. **Managing risk, market volatility, and multiple demands:** Land managers regularly grapple with a large degree of risk, and market volatility is increasing. Markets are increasingly global, opening up the potential for events in one region to create effects that ripple across the world. As markets are globalizing, they are also more regional and local in the United States. Specialized production is transforming some of our lands and changing producer decisions. Organic products like walnuts command a high price that rewards a sustainable supply chain. Population and affluence are increasing food demand, and a change in either demand or supply when the supply-demand balance is already tight can increase volatility. Demand for biofuel production will only tighten the balance. Agricultural commodity prices are becoming increasingly correlated with oil prices, which further contribute to volatility.

Achieving the Vision

Unfortunately, the policies and practices of the past will not meet the needs and challenges of tomorrow. Solutions from the Land hopes to shift our vision toward a future in which U.S. agriculture, forestry, and conservation take effective, collaborative steps toward facing 21st century challenges. Rather than defending outdated policies and searching for "silver bullet" solutions to production or conservation issues, we should look at examples of innovation across the nation, and adopt pivotal actions that can fundamentally shift land use management toward practices that achieve multiple goals. We have identified five focus areas for this effort.

1. **Implement landscape-scale solutions and partnerships:** We need to build broad coalitions of land managers, regulators,

scientists, and civil society around agro-forest ecosystems or landscapes to ensure continued production of essential food, feed, fiber, energy, and similar products, while improving the delivery of environmental and economic values from the land. This multi-stakeholder approach should be the foundation for advancing land use and management policies that meet economic, social, and environmental objectives through consensus-driven solutions. They should also help to set regional objectives for land management and identify the relevant voluntary and/or regulatory strategies that will meet those objectives.

2. **Harmonize policy frameworks:** Land owners and land managers often face regulations and policies that have overlapping or even contradictory objectives, not to mention redundant procedures and paperwork. Collaborative efforts to align policies and balance outcomes at the federal and state level are essential for sustaining land productivity and reducing implementation and transaction costs for both land operators and public agencies. We must reduce or eliminate conflicting regulations while also advancing the use of ecosystem service markets and sustainable supply chains as tools to meet policy goals.
3. **Reward stewardship of ecosystem services:** New markets for ecosystem services have the potential to substitute for conservation payments, but are rarely structured to adequately provide returns comparable to traditional production. Producers are concerned that these markets do not meet all stakeholder demand and/or reflect consumption pressures. Without better clarity on the value of the ecosystem services provided, uncertainty limits the scope for landowner/operator decisions and choices. Land management indices, metrics, and other measurements that are understood by land owners and operators will be important to allow the social interaction needed for market evolution.
4. **Energize and coordinate research:** To achieve the goals of Solutions from the Land, we need a reliable base of information and knowledge. Investments in research and innovation should be restored. A designated research council or overarching organization should set a research agenda that integrates agricultural, forest, and conservation goals. Research should be focused on real-life applications and decision makers, with improved methods for transforming research findings into on-the-ground tools.
5. **Transform and modernize information networks:** We need to foster a transparent, widely available system of information networks to both collect and share information with a spectrum of public and private sources. These systems should include a science-based scale-responsive network to meet the needs of land managers. This requires moving away from a provider-centric information system, in which research results are communicated outward in the hopes of finding an audience, to a

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"Solutions from the Land has articulated a new and compelling vision for adaptive, resilient land management."

user-centric system where information is readily available to users when they need and seek it. This work should be accompanied by better monitoring systems for regional-level systems such as air quality, water quality, and biodiversity, with new "meta-metrics" that can serve as broad indicators of sustainability.

A Path Forward

Through collaboration and dialogue, Solutions from the Land has articulated a new and compelling vision for adaptive, resilient land management to meet the multiple goals of the 21st century — global food and energy security, economic development, biodiversity, and climate change adaptation. We have spotlighted the need for land, water, and other natural resources to be managed both in an integrated manner and at the scale necessary for our vision to be realized.

While the recommendations offered in this report provide pathways to change, they are incomplete. Each requires further development, vetting, and broadening. Towards this end, we encourage interested partners and stakeholders to join in our continued dialogue.

Several important near-term opportunities exist for collaboration, such as:

- Create a centralized database or inventory of integrated land management projects that are either planned or under way across the country.
- Identify policies and regulations that work at cross purposes and stymie progress, along with successful resolutions to such problems.
- Sponsor and facilitate regional dialogues to inventory, explore, and assess market-based mechanisms for ecosystem services and sustainable supply chains.
- Develop ways to prioritize and streamline research processes in a way that would integrate agriculture and forestry with conservation goals and ecosystem services.
- Identify "meta-metrics" that can serve as broad indicators of sustainability.

Going forward, Solutions from the Land will seek partners to facilitate a national conversation with farmers, ranchers, foresters, and other practitioners and leaders who are seeking ways to produce more food, feed, fiber, and energy while preserving and restoring healthy ecosystems. The goal is to draw experienced and well-networked agricultural, forestry, and land management leaders into conversations about solutions that can realistically be delivered from the land. We will also encourage greater participation in the global dialogue, sharing our vision while listening and learning from others. As our work evolves, Solutions from the Land will make an ongoing effort to recruit champions and change agents who will proactively advocate for the policy, market, and institution reforms necessary to achieve our vision. These leaders will forge consensus on strategies for effecting change and will support the formation of coalitions to accelerate further action.

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The Solutions from the Land Design Team would like to thank the scores of agricultural, forestry, conservation, academic and business leaders who have participated in the SFL Dialogue to date. During the period of 2011-2012, four work groups, composed of a diverse cross-section of supporting partners, worked to forge consensus on initial action steps necessary to ensure the realization of the SFL vision and produced free standing reports outlining their findings and recommendations. In producing the Solutions from the Land Report, the Design Team drew heavily from the products of each work group, melding and integrating their work into the Achieving the Vision section (Chapter Three) of this report. Work Group participants and their reports can be viewed at **www.SFLDialogue.net**.

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