

How to Make it Work: Required Policy Transformations for Agroecosystem Restoration



the
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project

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***“A land ethic, then, reflects the existence of an ecological conscience, and this in turn reflects a conviction of individual responsibility to the health of the land. Health is the capacity of the land for self-renewal. Conservation is our effort to understand and preserve this capacity.”
Aldo Leopold***

***“Conservation is a state of harmony between men and land.”
Aldo Leopold***

***“Men and nature must work hand in hand. The throwing out of balance of the resources of nature throws out of balance also the lives of men.”
Franklin D. Roosevelt, Message to Congress on the Use of Our Natural Resources, Washington, D.C., January 24, 1935***

“Every blade of grass is a study; and to produce two, where there was but one, is both a profit and a pleasure.” Abraham Lincoln, Address before the Wisconsin State Agricultural Society, September 30, 1859

“It’s not easy being green.” Kermit the Frog

PROLOGUE

Agriculture happens. It has happened for nearly ten centuries, and as Jared Diamond in Guns, Germs and Steel points out, agriculture has happened to enhance the calorie status of human societies. [Diamond, J. 1999. *Guns, Germs, and Steel: The fates of human societies*. Norton, N. Y. 480 p.] More calories mean more people. Denser populations mean more need for food, and when human societies acquired domestic animals, the major source of their protein was secured. Man had become an agriculturist. The ecosystem that humans live in includes agriculture. As Daniel Quinn's Ishmael stated, ***"This is how things came to be this way."*** [Quinn, D. 1992. *Ishmael: An Adventure of the Mind and Spirit*. Bantam/Turner, NY. 262p.]

Recognizing that things are now "this way," society must continue to struggle with how to keep things "this way"; that is, to maintain agriculture on a sustainable course. How can we grow enough food while keeping soil, water and nature healthy for future generations, so they can continue the cycle? Will Leopold's land ethic be enough? So far, it appears the answer is NO. The powers of persuasion have little impact on either the powers of economics or the powers of necessity, both of which strongly drive agriculture.

VISIONS

One could say that the sustainable agriculture movement provides a vision of where we want to be. However, this is a fragmented vision, with some concentrating on the land, some on the people, and some on the economy. Getting all three right, which is the hope and definition of sustainable agriculture, is going to be very difficult, probably requiring both luck and skill. Concepts such as the working landscape, regenerative agriculture, organic agriculture, and others have been used to try to project this vision.

Natural systems agriculture is perhaps the most comprehensive vision of a sustainable landscape. Wes Jackson and the Land Institute (www.landinstitute.org) have proposed the concept of "Natural Systems Agriculture" as one vision of an agriculture that combines stewardship and food production patterned in the image of the natural prairie. Natural systems agriculture can be defined as ***"a domestic grain producing prairie with the four functional groups represented (warm-season and cool-season grasses, legumes, and the sunflower family. These mixtures could comprise domesticated wild species and/or domestic annuals made perennials. Here is the prototype ecosystem toward solving the 10,000-year-old problem of agriculture."***

Sustainably grazed pasture or rangeland would also be part of this vision. However, transition to food producing perennials on the landscape – so that soil does not have to be disturbed annually – is a goal that will take decades and will be strongly resisted by some vested interests. There will be enormous amounts of work required to influence policy, to develop appropriate perennial polyculture food producing systems and to get the infrastructure in place to utilize these systems. In the meantime, the world economy continues to grow, and populations, particularly in Third World Nations, continue to

increase. Therefore, while the long-term vision is essential, short-term results are also essential lest it be too late to incorporate changes. The world moves on.

Perhaps the question to address here is how to find ways, both policy driven and private enterprise driven, which will lead to a sustainable agriculture that includes biodiversity.

WHAT DRIVES THE WAY AGRICULTURE IS TODAY?

The world needs agriculture to feed and clothe us, and increasingly to supply us with energy and chemicals. Agriculture converts the sun's energy through plants and animals for our sustenance. Agriculture is the source of employment and revenue for much of the world's indigenous peoples, and even in depopulated areas such as the Midwestern U.S., agriculture sustains communities and protects the land and water. It provides many environmental goods and services not usually recognized in the marketplace

This past century has seen unprecedented mistreatment of natural resources. New tools including machines, fertilizers, pesticides, plant breeding, genetic engineering, and now information technology, have increased yields and enabled farmers to use land more "efficiently," or with less labor (Table 1.) Adoption of the automobile has increased mobility of the farm family and hastened the exodus of young people, the very life-blood of agriculture, from the land.

The commoditization of agriculture, meaning the focus on producing undifferentiated products at lowest possible price for the open market, has reduced most farms to a few crops and animals and has lessened greatly the need for management. This has encouraged and indeed rewarded increasing size of farms (Table 2), while neighbors buy out neighbors when they retire or go out of business. Agriculture, by the very nature of commodity markets, has become the low cost suppliers of grain and animal products in an increasingly global market.

Table 1. Factors affecting farm productivity and size, and ecological outcomes

Factor	Reasons for adoption	Outcomes
Technology Machinery Pesticides Crop genetics Animal confinement	Commodity emphasis in agriculture has made commodity producers seek lowest cost inputs to cope with low prices. New technologies benefit first adopters, then others must follow to keep up.	Input costs continue to climb so technologies must add yield to pay for their adoption. Each technology increases efficiency, requiring more land area per farmer to pay for the technology. Farm sizes continue to increase. Unintended consequences rarely considered.
Higher yields as a result of technologies	Claimed to be necessary to feed the world, but actually keeps on the production treadmill of surpluses and low prices.	Makes land more valuable, causes increase in input prices. Net result is that farmer makes no more profit than previously. Land in long-term crops/perennials is converted to row crops.
Government subsidies for commodities Corn Soybeans Wheat Rice Sugar Cotton	Claimed to be needed to stabilize returns, save family farms. Stabilizes supply of commodities for animal, processing, fuel and export industries. Cheap food. Subsidizes each bushel produced.	Promotes overproduction, driving down prices, increasing exports to countries at below cost of local production. Reinforces yield-increasing inputs such as chemicals, drives up costs of land. If cut, some fear land prices would plummet, sending agriculture into recession.
Government interventions (disaster payments, ethanol subsidies, barge subsidies, allowing animal confinement pollution, trade agreements that favor US commodities,)	Many subsidies are special interest driven.	Disaster payments often useful to help farmers overcome short term weather problems, but prop up inappropriate farming systems. None of these interventions are beneficial for biodiversity.
Research and extension programs at Land Grant Universities and USDA oriented to row crop production	Driven by commodity group and agribusiness to help provide lower cost commodities.	More disincentives to biodiversity. Maintains and extends current cropping systems.

Table 2. Farm numbers and size over time in Iowa

Year	Total Farms	50-499 acres	> 1000 acres
1900	228,622	192,341	340
1930	214,928	185,092	134
1950	203,159	173,802	254
1969	140,354	114,254	1,012
1987	105,180	66,627	3,724
1997	90,972	55,443	5,887

Agriculture in the 1950's and 1960's moved rapidly to the business (industrial) model, with an emphasis on specialization, simplification, and less diversity, with little thought that the unintended consequences would eventually endanger not only the biodiversity of the landscape, but also its very infrastructure. Over time, agriculture policy was formulated to reward large producers, although it was an unintended consequence of commodity subsidy policy. However, policy makers have not yet found a way to provide government support for a commodity-based agriculture without rewarding large producers the most and pushing agriculture to larger unit sizes.

Commodity prices in general offer only marginal returns to the producer. To stay in business, the producer must be producing at low cost. Yet, the producer has to produce enough units to make sufficient total return. This is true of widgets or corn. Witness the loss of the television manufacturing industry from the United States as one of literally thousands of examples. As these industries restructure, there are major winners and losers.

Technology has a major effect on commodity producers, allowing the production of more units at equal or less unit cost. Willard Cochrane states, "***The high value that society places on technological advances guarantees a continuous outpouring of new technologies. The incentive to reduce costs on the many, many small farms across the country guarantees a rapid and widespread adoption of the new technologies. Rapid and widespread farm technological advances drives the aggregate supply relation ahead of the expanding aggregate demand relation in peacetime, and given the highly inelastic demand for food, farm prices fall to low levels and stay there for long periods.***" [Cochrane, W. C. 2003. *The Curse of American Agricultural Abundance*. Univ. of Nebraska Press. Lincoln NE, p. 45.]

The biological system of food (agricultural commodity) production has many constraints not encountered in the manufacture of widgets. It relies on tangible inputs such as favorable soil, and weather and intangibles including management and manipulated markets. Land is virtually always planted to something and thus farmers are not responsive to markets or price (Darrell Ray, 2004, pers. Comm.). When situations for a profit are unfavorable, smaller producers are unable to find financial leverage to continue, and eventually leave the farm and sell the land. Because of high entry costs to farming, few farmers are able to take their place. Even having the farm passed on by inheritance is very difficult. Instead, the land is sold to an investor or larger operator. As a result, farm

size increases (Table 2). Fewer operators, more land, means less time to devote to management.

The overall effect of technology development coupled with farm policies that favor commodity agriculture has had devastating effects on natural ecosystems. For example, Iowa is perhaps the most developed state in the U.S. Virtually all of its land has been converted from original forests, prairies and wetlands to farmland, residential and commercial development, and roads. Some recent major industrial and confined animal accidents resulting in dumping of toxics to the streams killed few fish, because there were so few fish left. The state is losing its state flower (the wild rose) and its state bird (the goldfinch) because of lack of habitat. Prairies are difficult to establish and maintain because of the high level of atmospheric ammonia (from the confined feedlots) that upsets the natural nitrogen economy of native systems.

Laura Jackson has analyzed the landscape changes that have occurred over time in the upper Midwest. [Jackson, L.L. 2002. Restoring prairie processes to farmlands. P. 137-154. In *The Farm as Natural Habitat: Reconnecting Food Systems with Ecosystems*. Dana L. Jackson and Laura L. Jackson, eds. Island Press. Washington.] She calls the “**The great plowdown**” is what she calls the time of the first the great conversion of prairies to agriculture, followed in the 1960’s by the conversion of traditional rotation-based farming systems to the now dominant corn-soybean monoculture (Table 3). Corn acres have held relatively steady, but instead of being rotated with grains and hay, they are now rotated with increasing acreages of soybeans. Soybeans is a crop notorious for leaving bare ground much of the year with very little residue to protect the soil from erosion. The restoration of ecosystem services will require innovative approaches to farming and to farm policy to create rotations and biodiversity. The pre-1950 farming systems will not work today, and indeed had many drawbacks even then including relatively low productivity, high soil erosion, and even at that time, high nitrate in groundwater.

Table 3. U. S. and Iowa Corn and Soybean Plantings, 1,000 acres

Year	US Corn	US Soybeans	IA Corn	IA Soybeans
1960	81,425	24,440	12,658	2,615
1970	66,883	43,082	10,760	5,709
1980	84,043	69,930	14,000	8,300
1990	74,166	57,795	12,800	8,000
1997	79,537	70,005	12,200	10,500
2000	79,551	74,266	12,300	10,700

The upper Midwest’s conversion to row crop agriculture now dominates the landscape. Pockets of diversity remain, especially where dairy and cattle livestock are integrated into a diverse farm operation, but many are threatened because of their limited size and lack of access to profitable markets. In addition, even these are under threat; conversion and drainage of wetlands continues, prairies become less stable, and forests are under stress from air pollutants and development. Can this be turned around?

CAN AGRICULTURAL POLICIES DRIVE INCREASED BIODIVERSITY?

Why Deal with Ag Policy?

Farm policy is complex and intimidating. The long history, the many failed initiatives, numerous acronyms and seeming control of Washington by strong vested interests are major turnoffs. However, agriculture is the predominant land use of our nation, the biggest source of water pollution, and quite possibly the biggest hope for future habitat and biodiversity. This requires that concerned citizen must grapple with the public policies that have contributed greatly to the current situation. Policies can be changed to bring about very different results.

Furthermore, in the evolution of agriculture policy lie the seeds of change for future policies. If we understand how we got to today's policy, we can look for the avenues of change that farmers and environmentalists can both get behind – even if for different reasons – so that new policies can be identified which will bring about the restoration of ecosystem functioning which so essential to the world.

This is not to say that all agricultural policies and programs have been negative. Table 4 outlines many excellent programs that have been advanced since the late 1980's. The main problem has been to get these programs funded and policies implemented.

Table 4. Government policies that have promoted sustainable agriculture and biodiversity

Program	Description	Outcomes
Sustainable Agriculture Research and Extension (SARE)	Broad range of farmer, citizen and university driven projects that bring on-farm research and academic groups together. Competitive grants for research and outreach, awarded by regional committees.	While always marginally funded, invaluable in promoting biodiversity and sustainability, and in changing the direction of academic teaching and research and land grant institutions.
Conservation Reserve Program (CRP)	Long term land rental by the government to convert erodible land to grass and trees	Lowered erosion, increased biodiversity, but also reduced number of working farms and reduced rural community viability.
Conservation Security Program	Finally being implemented in pilot form two years after enabling legislation in 2002. Difficulties with funding, Administrative tightening of rules. A critical component is the payment to farmers and landowners for carrying out conservation practices.	When implemented as per law, will be an important part of U.S. conservation programs. Wetlands will be restored, soil erosion cut, biodiversity increased, and farmer income and stability increased. It will help keep working farms viable.

What is the Purpose of Farm Policy?

We start by asking, what is the public interest in agriculture policy? Nearly all would agree that securing an adequate and safe food supply for the nation is in the public interest, although recurring surpluses make that seem almost a moot point throughout the decades. Protecting the nation's soil and water for present and future generations is well established as a public goal. Ensuring price and income stability in a volatile market has turned out to be the primary driver of past policies, aiming to prevent wild swings that would drive farmers off the land. The interests of the users of program commodity crops, including those feeding animals, producing corn sweeteners and ethanol, and exporting grain worldwide, also play into the equation. These groups desire cheap commodities.

Other goals have received plenty of lip service but have not been unanimously supported, and surely have not been achieved. Saving the family farm, that is, keeping owner-operators on the land, has been a driving purpose for many, but for others interfering with industrial farm structure or slowing the trend to larger corporate farms is anathema.

Similarly, building a foundation for rural prosperity is often mentioned but not very squarely addressed in US agriculture policy, nor in any other policies.

What Does U.S. Farm Policy Achieve?

What farm policy achieves is not synonymous with its goals. The reality is that farm income stability was the primary driver of U.S. farm policy from the beginning, and that has not changed over the years. During the Depression of the 1930s, low prices were responded to with supply management of a few major crops, intended to reduce production and raise prices, along with a check from the government to farmers in times of low prices. With only slight modifications of purpose but a dizzying evolution of programs and acronyms, this policy continued for sixty years. The 1996 farm bill turned a corner to embrace a free market approach, dropping supply management but keeping the checks flowing to farmers who had been growing the few favored commodity crops all along, with a combination of fixed payments based on past production and subsidies when prices got low. The 2002 farm bill made few changes to that formula.

This approach to agriculture policy – highly focused on price and income for commodity producers -- may have helped some farmers survive and it surely promoted plenty of commodity production. But it rewarded investment and efficiency, not labor, and so inevitably it led to consolidation of farms, greater investor ownership and control, depopulation of the countryside, and a de facto land and environmental policy for private lands – rewarding intensive row crop production with its attendant loss of biodiversity and damage to soil and water quality.

Through these seventy years of farm policy, conservation also grew, with the establishment of programs, research, education, and financial incentives for farmers to do better protecting their resources. In 1985 the Conservation Reserve Program was created and continues to be a popular program that has temporarily turned over 30 million acres

of cropland back to grass and permanent cover. Even at some \$3 billion a year, the dollars invested were always a pittance compared to the commodity subsidy programs. Traditional cost-share programs have limped along with relatively small appropriations. The conservation incentives for any farmer for were always a pale shadow compared to the incentives for all-out row crop production.

Green Payments

[The words payment, subsidy and program evoke subtle differences in interpretation. However in reality, they all mean the same honorable thing: using public resources to encourage certain private behaviors that result in public benefits. We use the words as they are commonly employed; hence we have commodity subsidies, conservation programs, and green payments.]

An entirely different approach to farm policy is possible, addressing the same overall set of goals – adequate food supply, conservation of soil and water, and financial support for farmers. Instead of supporting commodity production, it would support farming systems that provide environmental benefits for all of society. In effect, this is a green payments approach to providing income stability and food security.

Perhaps the best way to define a green payments policy is to contrast it to our current commodity and conservation programs.

In contrast to commodity subsidies that tie payments to what or how much is produced, green payments would tie payments to the environmental services produced by the farm. These societal benefits would include historic concerns of soil quality and water quality, but would also include inclusion of nature and biodiversity on working farmlands.

Instead of targeting only the 40% of farmers who grow favored commodities – corn, soybeans, wheat, cotton, or rice – green payments would be for all farmers. Like commodity subsidies, green payments would provide real income that contributes to the bottom line profitability of the farm. It would be an entitlement in the sense that all who meet the conservation standards of the program would be entitled to the payments, just as all who qualify for commodity payments are entitled to receive them. It should not be subject to budget caps that leave some eligible farmers out.

In contrast to conservation programs where the vast majority of money is now spent retiring sensitive lands from production, green payments would reward conservation activities integrated with production on working lands. In contrast to other conservation programs that pay for individual practices, green payments would reward farming systems that use management to bring about a constellation of environmental benefits. Environmental outcomes would be the measure, not prescriptive government micromanagement of farming decisions.

Instead of targeting funds to the worst cases for cleanup (which tends to give the advantage to the bad actors), green payments would reward those who have used

conservation practices on their own in the past, as well as those who want to adopt more in the future.

Finally, instead of merely compensating for the costs of conservation or for land retirement, green payments would provide real income support for the efforts farmers make to enhance the environment in the midst of their production practices.

One highly significant public goal is not inherent in green payments, but could either be reinforced or ignored. That is the aim to direct benefits to family farmers. Any policy can theoretically be designed to be scale neutral, but that outcome is rare. We have already described how commodity policies tend to favor large industrial operations. Likewise, environmental regulations such as for livestock feedlots tend to favor the large operations that can spread costs over more units of production. If a green payments approach employs and enforces modest payment limitations, then it will spread more equitably to moderate and small operations. However, if the bulk of payments go to the largest operations it will reinforce subsidies' negative impacts on consolidation. If a green payment approach rewards practices that use more intensive management or labor, it will favor smaller operations. If on the other hand it is acreage-based or favors very expensive, high-tech practices, then large industrial farms will have the advantage.

This is not only a significant public policy decision for the structure of agriculture, but will have huge implications for funding. Since the full flowering of a green payments approach would be an alternative to commodity subsidies and would naturally take the money from subsidies, the inherent redistribution of benefits among different sizes and types and locations of farmers will define the political battles.

A recurring problem in providing for equitable income transfer in agriculture while achieving environmental and social goals is the lack of an accepted definition of a family farm, along with the realization that many farmers do not own the land they are farming. Working farms, those that provide income for the farm family and their employees, are the norm, but increasingly many farmers are renting land from absentee property owners. A farmer may manage several thousand acres. How do the benefits get spread equitably? Will the benefits end up increasing the cost of land, thereby supporting the landowner but not benefiting the farmer? Can farms of thousands of acres be managed to truly provide conservation benefits? These and other questions, including the public's willingness to pay for environmental goods and services, will help frame the discussion and advancement of green payment legislation.

A Quarter Century of Green Payments Evolution

The green payment concept is not new. It was explored prior to the 1985 farm bill when there was widespread agreement that commodity subsidies and the resultant all-out-production activity were having unintended consequences of erosion and wetland drainage. However, the desire to find a no-cost policy led to the adoption of conservation compliance (or cross compliance), where minimum treatment of highly erodible lands

and prohibition on draining wetlands and plowing up grasslands became a precondition for receiving commodity subsidies.

The 1990 farm bill made few changes, but it did add the Integrated Farm Management Program Option – an option that farmers could choose to allow crop rotations without losing the right to future subsidies.

Another reform perking along parallel with conservation compliance was decoupling – the notion that farm program payments should be separated from crop production requirements that kept farmers planting their designated base acres to the maximum in order to stay eligible for maximum payments. Even worse, annual “set-asides” required to dampen production and help stabilize prices (the famous “paid to not farm” element) had led too many farmers to plow up their marginal lands just so they could then stop and call it their set-aside. The combination of requirements for the commodity subsidy program drove monoculture production and maximum production and hindered use of beneficial crop rotations. The environment suffered in every way. Decoupling payments from requirements theoretically let farmers use their own better judgment both in conservation practices and in producing for the market. It is interesting that supply side management has never managed to help crop prices. However, it is still a policy desired by many (Ray, 2003.) [Ray, D et al. Rethinking US Agricultural Policy. Univ. of Tennessee.]

A decade later, the country seemed ready for decoupling, and the 1996 farm bill removed the planting requirements – mostly. Farmers still could not produce fruits and vegetables on their base acres. However, the supply management elements of farm policy were banished. And the same 40% of farmers who always got subsidies continued to get them – now in a regular check tied only to their past crops.

However decoupling was short-lived, for the country was apparently not really ready for its outcomes. In the late 1990s when prices tumbled, farmers needed their subsidies again and production-tied payments were reinstated, the fixed payments were doubled again and again, and decoupling that would leave agriculture to the free market was discredited, probably forever.

During the 1996 farm bill debate, some were suggesting that green payments should be available as an alternative to commodity subsidies, for those who choose it. However, the powerful commodity groups opposed it. One pilot program was passed, the Conservation Farm Option, which would have given farmers in pilot areas the choice to combine commodity payments with conservation payments in the context of a whole farm plan. However, slow creation of the rules and budget skirmishes resulted in failure of USDA to implement the program.

The 2002 farm bill marked the first time green payments were accepted as policy – the Conservation Security Program was adopted not as a substitute for commodity payments, but as an add-on entitlement program funded from the same open-ended pot of money as commodity programs.

The Conservation Security Program

The Conservation Security Program (CSP) was shaped by farmers and sustainable agriculture groups as a fundamentally different type of program. It is a conservation incentives package that brings to the forefront features never before included in U.S. policy.

It is the first program to reward farmers for producing conservation benefits instead of just producing commodities. The payments can go beyond cost share for conservation practices to contribute to the bottom line of the farmer. It contains the full menu of resource needs and opportunities – soil, water, wildlife, energy, and more -- so that farmers can integrate their conservation and production systems in a holistic manner. It requires a whole farm plan and lets farmers choose their own level of involvement by selecting from among three tiers. Resource problems must be fully solved to a non-degradation standard. The CSP treats all farmers the same, no matter what they grow or what size their operation is.

Most important, it was passed into law as an open-enrollment program where there is no ranking or denial of applicants. All farmers are to be eligible if they can achieve the high environmental standards. Congress enabled funding for CSP from the same “entitlement” source of funds as commodity programs. Heretofore only commodity subsidies enjoyed freedom from annual appropriations fights, with actual spending resulting from the need and demand for the programs.

When the legislation was first introduced by Senator Tom Harkin (D-IA) and Representative David Minge (D-MN) in 2000, it drew much attention. Indeed, the Clinton Administration proposed a \$600 million pilot CSP program to try it out, but Congress did not fund it. By the time the 2002 farm bill was seriously underway, Senator Harkin had become the Chairman of the Senate Agriculture Committee, and he made the CSP his top priority. It was fully included in the Senate’s bill, cosponsored with Senator Gordon Smith, (R-OR), although absent from the Republican-controlled House bill. In the end The CSP emerged virtually unscathed from the bruising conference committee, including its full entitlement funding status, and was signed into law with the farm bill in May, 2002.

Fights over CSP Implementation

Implementation of the new law has been fraught with difficulties and needless delays. USDA dragged out the writing of rules for a year and a half. Congress temporarily “capped” the funding for CSP over ten years to pay for a farm disaster assistance bill. Although they later restored the entitlement funding for future years, they only allocated \$41 million for what was left of fiscal year 2004 due to USDA’s slowness in launching the program. The Bush Administration seemed to latch onto this initial funding limitation as an indication of Congress’ future intent – despite the fact that entitlement funding had been restored.

The result was that USDA chose to draft a rule to tightly limit use of CSP. They added layer upon layer of restrictions, limitations, and funding reductions. The largest number of comments ever received on a conservation rule came thundering back with 14,000 comments in near unanimous opposition to the rule. Nevertheless, USDA announced the first signup under a slightly modified “interim final rule.”

At present, eighteen watersheds are open for CSP, less than one percent of watersheds nationwide. With only a few weeks notice, farmers had less than one month to enroll, possibly with no recurring opportunity for many years to come. A stunningly complex set of enrollment ranking factors and eligibility criteria were imposed, including requiring proof of a two-year prior history of fully meeting soil and water resource goals instead of using the CSP to meet those goals. Eligible new practices were slashed, as were conservation enhancements. Finally, payments were slashed with a myriad of complex formulas. The per acre payment was halved on average; cost share for taking care of previous practices was reduced to a small blanket percentage; enhancement payments were arbitrarily capped in a fashion that gives the advantage to the largest farms; and new practices were severely limited.

Even the most generous observer had to wonder if the Administration was trying to kill the CSP. Nevertheless, in an amazing show of support for the eventual realization of the CSP, all interest groups tried to promote the CSP in the first signup in the eighteen watersheds. Time will tell if farmers can see through the restrictions in order to enroll and work toward larger payments in the future.

The next few months will be critical to the future of CSP. After a comment period, USDA has the opportunity to drastically rewrite the rules to implement the CSP as the law intended. Just as important, Congress has the chance to dramatically increase funding and continue to support the open enrollment vision of CSP.

The Next Farm Bill

The next farm bill, slated for 2007, is shaping up to be the forum for the first open debate about shifting away from production subsidies to green payments. The conversion might be gradual, reducing subsidies while farmers become used to producing environmental benefits to earn more under CSP. Alternatively, it might be more dramatic, replacing subsidies with a new evolution of CSP.

Either way, the shift in beneficiaries will define the political battle. The 10% of farmers who now collect 70% of subsidies will either have to be convinced they can live with the change, or be defeated in their historical sway over Congress.

WTO Could Change Everything

Driven by hopes for export markets, U.S. commodity groups pushed for the U.S to sign the General Agreement on Tariffs and Trade (GATT) in 1994, and thus create the World Trade Organization (WTO.) With a goal of leveling the playing field for free trade by

reducing and eliminating the various financial advantages countries give to their own producers, the WTO has set about regulating the world's trade and subsidy policies.

A decade later, those same agriculture groups seem surprised that their own commodity subsidies are being challenged as unfair by other countries. In a landmark ruling in June 2004, the WTO ruled on a challenge from Brazil that almost all of the U.S. cotton subsidies are illegal, as well as some export subsidies for other crops. Of great significance was the finding that direct or fixed payments and counter cyclical payments created as part of "decoupling," are trade distorting and therefore must be banned or limited. Brazil argued that the subsidies led to overproduction, U.S. dumping (selling below the cost of production) on global markets, and suppressed prices, thus giving the U.S. an inequitable share of the world market. While the decision will likely be appealed and included in future trade negotiations, it nevertheless brings into question much of the 2002 farm bill, as subsidies for corn, soybeans, wheat, rice, dairy, and sugar are based on similar assumptions and laws and therefore subject to additional challenges.

The WTO classifies agricultural subsidies in four categories based on the impact on international trade. Green box programs are not subject to limits, but these must not be linked to current agricultural production or prices, so that do not impact on trade. Note that the WTO's green box includes green payments and other conservation programs, but it also includes rural development, renewable energy, and numerous other programs that are not necessarily green in the environmental sense. The Conservation Security Program would fall into the green box. It is unclear whether most EU programs are in the blue or the green box.

Amber Box programs have impacts on trade, and are subject to intensely negotiated limits that are intended to decline over time. The current U.S. annual limit is \$19.1 billion. Clearly, loan deficiency payments and marketing loans are amber box, as are supplemental payments to dairy producers and other livestock payments, because they are influenced by price and production. Direct payments, counter cyclical payments, and crop insurance subsidies were thought to be green box because they were based on past production and yields, but the WTO ruled otherwise and recommended eliminating or placing them in the amber box.

Blue Box programs are explicitly allowed without limit. The U.S. may try to negotiate some subsidies into the blue box. If successful, domestic subsidies will no longer be a focus of WTO and instead it will only focus on market access and tariffs. Finally, Red Box programs and policies are outlawed by the WTO.

The WTO and its arcane colored boxes may seem unimportant, but it is causing a seismic shift in what is possible in farm policy. Powerful farm and commodity groups are seeing a real threat to their subsidies and are looking for alternative ways the U.S. might support farmers. As Bob Stallman, President of the American Farm Bureau Federation testified to the House Agriculture Committee's conservation subcommittee on June 15, 2004, "International Trade issues and budget pressures may cause a future evaluation of the means of supporting agriculture. The conservation programs authorized under Title II of

the farm bill, which fit within the “green box” of the World Trade Organization Agriculture Agreement as non-trade distorting programs, are important to these policy considerations.” He went on to say that in the future we might look to the CSP for basic funding for agriculture. CSP provides an opportunity to, if necessary, transition out of program crop subsidies. Chairman Frank Lucas (R-OK) on that same day appeared to give genuine consideration to the idea, as he asked if farmers understand that this would dramatically change the whole agriculture program, so that a whole farm plan meeting USDA standards would be necessary, that it would not be free money. Mr. Logan of the National Farmers Union answered that a shift in thinking is going on, with conservation as an essential component. He said that with CSP we leave a door open that we may desperately need in the future. Craig Cox of the Soil and Water Conservation Society, representing many other conservation groups, said that CSP created excitement about new options, a different type of commodity program. Mr. Lucas raised the valid point that there have been no good cost estimates of CSP as an entitlement program.

Darrell Ray (2003) points out the need of the government to manage excess production capacity. He points out that someone will farm the land available, and that farmers do not tend to respond to market forces. He also points out that it will take more than eliminating direct payments to farmers to allow farmers to raise incomes via market access. However, slowing down the production train is not easy, and would take incredible skill to keep supply and demand in somewhat close proximity. Policies he proposes include acreage set-asides concentrating on environmentally sensitive land, a fairly effective way of also increasing biodiversity. Set asides have the disadvantage that they come and go depending on crop supplies, government interventions and federal budgets, so they are not terribly stable. Indeed, the CRP was as much a supply control program as it was an environmental program. Its success was due to the long-range easements that were an inducement for farmers to retire sensitive land. However, even CRP had unintended consequences. Many farmers rented their entire farm and used the easement payments for retirement. This increased the rate of depopulation of the countryside, and hurt many rural economies.

Private Initiatives

Policy cannot make sustainable agriculture happen all by itself. Even a huge infusion of money from the public purse simply will not support the major changes required. There must be good financial reasons for people to change. There are a large number of alternate uses of land that are more sustainable than row crop agriculture. Biomass energy (perennial grasses and forests), tourism, hunting, are among the many possibilities. Carbon trading could bring more perennials on the land. The increasing emphasis on source identity foods from Farmers Markets and Consumer Supported Agriculture is increasing local incomes and allowing farmers and their families to enjoy the benefits of rural life.

Perhaps the most promising of near future ways to conserve soil, protect water and increase biodiversity is the use of grass based grazing and the development of viable biomass based energy production. Grazing is an age-old practice, minimized by the

advent of feedlots, huge dairies and cheap grain. Nevertheless, policies along with increasing emphasis on the benefits of grazing can help. Adoption of intensive grazing management (rotational grazing) is critical to the future of grass based agriculture. Additionally, development of technologies to extract energy economically from perennial ecosystems must be part of future energy policy.

EPILOGUE

In the end, the struggle on the countryside between farmer incomes, biological stability, environmental benefits and rural economies will probably never end. However, policies and private incentives can make things better.

President John F. Kennedy often told the story of the aged Marshal Lyautey of France debating with his gardener the wisdom of planting a certain tree. "It will not bloom," the gardener argued, "for decades." "Then," said the Marshal, "plant it this afternoon."

Daniel Quinn ends his epic Ishmael with the poster prepared by the famous Gorilla.

On one side of the poster is:

**WITH MAN GONE,
WILL THERE
BE HOPE
FOR GORILLA?**

On the other side of the poster is

**WITH GORILLA GONE,
WILL THERE
BE HOPE
FOR MAN?**