

The political economy of the emergent agri-environmental transition in the U.S.

A economia política da transição agroambiental emergente nos EUA

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RESUMO: Este artigo é uma avaliação da mais recente lei agrícola americana do século XX [Lei Federal de Melhoria e Reforma Agrícola (FAIR) de 1996] no contexto da atual transição agroambiental. Os argumentos estão organizados como respostas a quatro perguntas básicas: (1) Qual é a transição agroambiental emergente? (2) Como está se manifestando nos EUA? (3) Por que a lei agrícola de 1996 é tão importante? (4) Quais são suas principais disposições?

PALAVRAS-CHAVE: Agricultura; sustentabilidade; legislação.

ABSTRACT: This article is an assessment of the latest 20th Century American farm bill [the Federal Agricultural Improvement and Reform (FAIR) Act of 1996] in the context of the current agri-environmental transition. The arguments are organized as answers to four basic questions: (1) What is the emergent agri-environmental transition? (2) How is it manifesting itself in the US? (3) Why is the 1996 farm bill so important? (4) What are its key provisions?

KEYWORDS: Agriculture; sustainability; legislation.

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INTRODUCTION

This article is an assessment of the latest 20th Century American farm bill [the Federal Agricultural Improvement and Reform (FAIR) Act of 1996] in the context of the current agri-environmental transition.¹ The FAIR Act breaks with the core

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of a sixty-year-old protective pattern: price support through supply control. It will not do away completely with the commodity programs, nor will it provoke a radical change in the current agricultural practices. But it does signify that the new mode of sector regulation will have to respond to increasing social pressure for environmental protection and healthier food. And the research system will have to bridge the “islands empires” of agriculture, environment, and health to explore a new pattern for agriculture.

The arguments are organized as answers to four basic questions: (1) What is the emergent agri-environmental transition? (2) How is it manifesting itself in the US? (3) Why is the 1996 farm bill so important? (4) What are its key provisions?

1. TRANSITION

The intense process of technological, social, and economic changes that occurred throughout almost all of Europe and in some regions of European colonization between the 18th century and the mid-nineteenth century was christened by historians as the *Agricultura! Revolution*. The principal characteristic of this “first” revolution was the expansion of annual cultivation of a single plot of land. This practice, made possible by substituting the fallow with the plantation of forages in rotation with cereals, generated a virtuous circle: it included livestock in the system of cultivation, favoring at the same time, the progress of animal traction and greater availability of the main source of fertilization, manure. The result was an exponential increase in the productive capacity of each farm family, in flagrant contrast with the stagnation of medieval agriculture. It was a great leap forward that ended the chronic food scarcity (Augé-Laribé, 1955; Van Bath, 1960; Chambers and Mingay, 1966; Bloch, 1968; Thompson, 1968; Gervais, Jollivet and Tavernier, 1976).

Until today we discuss whether the rapid growth of the European population was the effect or the cause of this change. But no one can ignore that the technological basis of the revolution was no novelty. It had been in use for many centuries in gardens and orchards. And its application to the cultivation of cereals did not arise in England, as the encyclopedias continue to insist. In fact, it began in the urbanized north of today’s Italy and moved to the Norman region (the north of France and England), passing through densely populated Flanders (Belgium and Holland). In other words, the technological innovation of the so-called “first” Agricultural Revolution was not a sudden “discovery” or “invention” of the 18th century. It was the result of a complex social-economic process that still demands much research in order to be fully explained (Boserup, 1965, 1981; Jones and Woolf, 1969). The pressure of continuing demand on food production induced more radical changes, this time improvements in the quality of inputs. This “second” agri-

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cultural revolution started in England in the mid-nineteenth century and spread to other countries of Europe in the second half of the century. Industrial and scientific inputs were applied to raise output more rapidly. From the mid-20th century, motor mechanization, chemical fertilizers, and pesticides produced an extremely rapid transformation, especially in the United States. And when the new varieties of rice, corn, and wheat allowed this transformation to be exported to third world countries, this “second” agricultural revolution became known as the Green Revolution (Hazell and Ramasamy, 1991).

In all cases the term “revolution” was used to characterize a phase of very rapid changes which crowned much longer and more profound processes. The fusion of agriculture and livestock that characterized the “first” Agricultural Revolution was the result of a progressive convergence of almost a millennium (Servolin, 1985). Similarly, the Green Revolution was the apex of almost two centuries of industrial appropriation of parts of agricultural production. It began with the mechanization of the work instruments needed for the preparation of the soil for sowing and harvest, concentrating on the “external” side of the productive process. Then, it was the vital biological cycles of this process themselves that became the object of partial appropriation, through the production of fertilizers and hybrid seeds. At the same time, genetic, nutritional, and veterinary advancements also transformed livestock, separating it once again from the systems of cultivation (Goodman, Sorj and Wilkinson, 1981).

It is quite possible that, in the future, another phase of intense transformations will come to be characterized as the “third” revolution of the series. But we must be very cautious when speculating on the impacts promised by modern biotechnology, microelectronics, robotics, new sources of energy, etc. The hasty prognoses about the “biorevolution” (such as Rifkin, 1995) hold illusions about the autonomous development of science, technology, and its systematic application to production. They underestimate the interrelationship of the three decisive variables: scientific advancement, economic factors, and social-institutional environment. These last two variables function as powerful and unpredictable “filters”, because they limit and orient the freedom of innovation and diffusion. Many analytical efforts lead to unrealistic predictions about the future of the agri-food system precisely because they underestimate the importance of these “filters”.²

As with the two revolutions mentioned above, the next may also be the apogee of a profound process of developmental changes in norms, conventions, and behavior. There has been no shortage of skilled mediation of the conflict between defenders of conventional agriculture and those who intend to stimulate the adoption of alternative practices considered more sustainable. Though compromises are not easy (and do not always result in good agreements), there is some discussion going on, at least in the more mature processes. In these talks we can already identify the emergent transition (Beus and Dunlap, 1990, 1991, 1992, 1994; Buttell,

² See Dockes and Rosier (1992) for a theoretical analysis of the dialectic of innovations and conflicts.

1995; Hamlin and Shepard, 1993; Hassanein and Kloppenburg, 1995; Kloppenburg, 1991; Norgaard, 1994; Ruttan, 1994).

We are not dealing with a “return” by any means, although something of the sort may even occur in the agrarian systems that entered the “second” revolution without having passed through the first. In more advanced agriculture, the next step will be very different from the others. What the American case indicates is that, in the more developed countries, agriculture and food production tends more and more to be molded by pressures arising from their relationship with health and the environment. There is a growing movement in the United States to fight the degradation of agricultural ecosystems inherent to the “second” revolution, demand new disciplinary rules for the agri-food system, and that intends to promote practices more adequate for the preservation of natural resources and the supply of healthier food.

But this movement will advance little while their proposals signify, in practice, a retrogression to the productive systems of the beginning of the 20th century, no matter how environmentally beneficial they are (Buttel, 1995).

The principal opposition of the social movement for sustainable agriculture states, today, that to feed a population of ten or eleven billion inhabitants in the mid-21st century it will be necessary to take the conquests of the Green Revolution further, by means of heavy investments in biotechnological research, and to dissuade nations from pursuing food self-sufficiency. These detractors insist that international trade liberalization will lead to the intensive use of the best available lands with the most advanced technologies, minimizing the economic and environmental costs. With this, biodiversity could be developed on those fragile soils that would no longer be in use. So, by adding more “free trade” to more “green revolution” it would be possible to feed many more people with the use of less resources. According to the defenders of this approach, changes in the direction of agricultural research motivated by environmental concerns would only aggravate the food insecurity of the planet (Avery, 1995).

It is difficult to evaluate what the degree of acceptance of this thesis will be among the leading elites of the First World. It is certainly very attractive. The perspective that the world’s demand for grain will triple in the next fifty years is already greatly influencing decisions related to farm policy. It is obvious that this is the thesis behind the slogan “freedom to farm”, the key idea of the 1996 farm bill, and the flag of the more reform-oriented republican segments involved in its preparation. A side effect of this new flexibility will be that cereal farmers might diversify and intensify rotations with forages, and so, move toward more sustainable systems. In practice, two scenarios are coming together which tend to be presented as if they were propositions of an alternative: a handful of industrialized countries continue to produce food surpluses exportable to the underdeveloped world, while part of this immense periphery attempts to increase its level of food self-supply by prioritizing investments in agricultural development.

Agriculture research maintains its preference for intensification in areas of high potential, while it is encouraged more and more to deal with the areas of lower

potential, where the rural poverty and environmental degradation associated with it are concentrated. Those who wish to see farm research oriented towards sustainable food security of the South claim that the current challenge is to bring about a “Doubly-Green or Super Green Revolution”. In other words, they aim at an even more productive revolution than the last and one that manages to preserve natural resources and the environment (CGIAR, 1995).

This is a noble and generous intention, which, unfortunately, seems impracticable. Mainly because agriculture that preserves natural resources and the environment will not result in the diffusion of any new easily adopted generic technology. The current sustainable solutions are not multipliable. They are specific to the agroecosystem and demand agroecological knowledge, besides not being very competitive, either from the economic or the political viewpoint.

This situation may change under the social pressures for healthy food and respect for nature. These pressures will certainly help conventional farmers and researchers to complement the alternative agriculture movements (“organic”, “biodynamic”, “natural”, and “biological”) in the search for more sustainable solutions. But this process cannot have the speed implied by the idea of a “Super or Doubly Green Revolution”. Almost two centuries were needed for agronomy to generate the miraculous high-yield varieties. It is an illusion to think that molecular biology added to the emergent agroecology will come to revolutionize food production in only thirty years, no matter how fast the ideological conversion of the CGIAR system (Consultative Group on International Agricultural Research).

So, instead of a “fall of the Green Revolution” and a rise of a “third” (super green) revolution, it is much more likely that the legitimization of the sustainable proposals will occur in parallel with the oscillating decline of the current standard of modern agriculture. For this reason, the idea of an agricultural-environmental transition (Buttel, 1995) is much more rigorous, for it can include, in the distant future, a phase of sufficiently accelerated changes to become characterized as a new revolution. But any attempt to describe it in 1996 would be nothing more than an exercise in prophesying.

2. THE TRANSITION IN THE USA

The emergent agri-environmental transition includes a slow disintegration of a package of generic technologies and the concomitant interruption of the global homogenization of the social structures and food production practices. Moreover, it involves very complex and varied processes, which should not have a common end. In areas especially favorable to the maintenance of the technological model of the “second” revolution – such as the Corn Belt – it is very likely that resistance to the transition will last a long time, even if external pressure increases and government support decreases (Buttel, 1995).

Simultaneously, the transition may move rapidly in ecosystems that are less permeable to the miracles of the high-yield varieties, creating a diversity of agrar-

ian systems comparable to that, which prevailed until the beginning of the 20th century. The key-variable in determining the rhythm of these processes will certainly be the social dynamic and, in particular, the concrete possibilities of isolating the more conservative forces (such as interest groups linked to the supply of fossil energy) and, above all, of overcoming the enormous political inertia of the “second” agricultural revolution.

In those countries that underwent the two agri-revolutions, the process of industrial appropriation of agriculture quickly generated a food overproduction. In the pioneer nation, the United States, the surpluses that were accumulating during the twenties curbed the high food prices, but brutally reduced the standard of living of millions of rural families. The adjustment only began to appear with the first AAA (Agricultural Adjustment Act), signed into law by F. D. Roosevelt on May 12, 1933. The New Deal launched the organic structure of the price support programs that characterize, until today, the protective farm policies of the developed world. Besides helping to recover the purchasing power of farmers, the farm policy launched in May 1933 ended the unrest, and helped to legitimize moderate leaderships. The formulators’ aim was to produce the coveted relief. Farmers needed some kind of compensation for the magnificent help they had been giving society since accepting to enter the technological race (Veiga, 1994).

The more dynamic farmers, those, who first adopted the innovations, benefited from reductions in production costs. But, as their example was followed by a larger and larger number of producers, the supply expansion tended to knock down the prices and narrow the profit margin for everyone. Those who were slow to adopt the new technologies were squeezed out of business, as prices tended no longer to cover their costs. These farmers did not keep up with the “treadmill” and ended up selling their lands and other assets to the vanguard who managed to make the temporary profits. Those who succeeded in keeping pace in the race were caught in the productivist “trap”. The main effect of the government price support was to increase the competition among those who remained in the sector, as their income began to depend essentially on the dimension of their assets, particularly real estate. And the consequent rise in land prices once again caused the profit margin to diminish (Cochrane, 1958, 1979).

The farm lobby organized in the twenties thought the best way to compensate the farmers was to freeze the terms of exchange (“parity”). The businessmen preferred supply management (“allotment plan”), despite its going against their belief in the market. The AAA was the result of a compromise between the defenders of the “allotment plan” and the defenders of “parity”. In fact, what the farm policy of the New Deal achieved was the establishment of a sort of implicit “social contract” between society and agriculture. According to this contract, the former committed itself to protecting prices and farm incomes, while the latter committed itself to guaranteeing food abundance (Veiga, 1991, 1994).

Over the last 63 years American farm policy has gone through various metamorphoses without altering the essence of this original contract. Its period of consolidation did not last through the events of World War II, and its obsolescence

only began to appear in detail over the last ten or fifteen years. Even so, the complex political dynamic that generates resistance to proposals for change showed that it is alive and well in the debates over the latest American farm bill of this century.

Since it has been on the defensive, beginning in the early 50s, the farm lobby has avoided a direct confrontation with three other lobbies: consumers, taxpayers, and environmentalists. The first was slowly neutralized with successive bargains, in which they were seduced by plans for consumption subsidy, mainly food stamps. The heavy offensive of taxpayers, in the 80s, was neutralized by the unleashing of a sector crisis comparable only to that of the 1920s. And the environmental movement has slowly matured, at least in relation to agriculture. Its influence only begins to be taken seriously with the 1990 farm bill. However, the obsolescence of farm policy's protective pattern has caused discomfort and indignation among the elites, and has also divided the farmers themselves more and more.

Despite the advanced process of deterioration of commodity programs, nothing guaranteed that their end was near, or even that the new bill would begin the break. Even at the end of 1995 it seemed highly unlikely that price support would be substituted by direct income payments. It seemed unlikely that this kind of proposal would be accepted among those who would directly influence the preparation of the new bill. But this impression began to disintegrate in the early February 1996 when the Senate opted for the gradual dismantling of the commodity programs. The idea that the international market perspectives favor the expansion of the American grain production was a common factor in the two original proposals by the Republicans: Roberts in the House of Representatives and Lugar in the Senate. Both aimed at – albeit through very different approaches – reducing planting restrictions, thus giving the farmers incentive to increase the cultivated area. But the two leaders would never have taken the initiative in this direction had they not felt support from at least some of the wheat farmers in Kansas and the soybean farmers in Indiana. The backdrop for this behavior is very clear in the editorial of the *Wall Street Journal* of September 20, 1995:

“By keeping production down, it [farm policy] has also caused US farmers to lose world markets share in grains and oilseeds. When the US idles land, farmers elsewhere gladly make up the difference. So, while world grain consumption rose by 18% from 1981 to 1993, non-US producers met nearly all of the growing demand because American farmers were paid not to farm.”

Evidently, these are not the perspectives for those areas in which the United States cannot achieve the same level of competitiveness and, much less, for those products to which imports and acreage control is crucial. Thus the fury of the sectors of cotton, sugar, peanuts, rice, dairy, etc. and the consequent incoherence in the vote in Congress.

Despite its vast defects, vagueness, and ambiguities, Pat Roberts' project broke with the core of a sixty-year-old protective pattern: price support through supply

control. By “freeing” the farmers from planting restrictions, without an abrupt end to the income supplement offered by the commodity programs, the republican platform went beyond the most optimistic predictions of what would come out of the decision-making process of the new bill.

Even if it were hurt in the complex negotiations between the republicans and democrats (the outcome of which was unpredictable), the essence of the farm platform included in the republican budget proposal was in itself a novelty. Not only that, but it was also considered highly unlikely by the analysts. And this novelty was a symptom of the break with the pattern generated by the New Deal; that is, a split with one of the characteristics of the so-called “second” agricultural revolution, with the core of the “social contract” constructed during the Great Depression.

This break was being propelled by the most conservative political party and opposed not only by special interest groups (sugar, cotton, etc.), but also by liberal and radical segments of the Democratic Party, the main speakers for the environmental movement in general, and the organizations which participate in the Campaign for Sustainable Agriculture (CSA).

Much more than a strange combination of circumstances, this beginning of a rupture may indicate one of the fundamental contradictions of the emergent agri-environmental transition. And, perhaps, the main contradiction in the process in the specific case of the United States.

The congressional debate did not clarify this contradiction and ended up polarizing around the maintenance of the “safety net”, directly reflecting the ambivalence of the farmers’ attitudes demonstrated in surveys. The republican project (Roberts), which sought to comply with the wishes of those who wanted the gradual dismantling with more productive flexibility and less bureaucracy, confronted the opposition of those congressional members who represented the more “fearful” or “insecure” segments. And this polarization greatly upset the coalition of the agrienvironmental organizations.

3. THE IMPORTANCE OF THE NEW BILL

Both the birth and the death of the New Deal pattern of farm policy clearly show the contradiction between economic dynamics and the political process. The overproduction crisis of American agriculture became obvious in the summer of 1920, but the adjustment only appeared effectively in May 1933 with the first AAA. The pattern of state intervention arduously constructed during the Great Depression was already obsolete in the middle of the Golden Age (1950-1973), but various patches allowed it to resist until the end of the century. The bill of 1996 will certainly initiate the rupture, though with much ambiguity, as some of the programs of supply control will remain untouched.

This absence of synchronicity between the real situation of the agri-food system and the government’s corrective action certainly confounds economists more than it does political scientists. Economists cannot disguise their inability to respond how

and why an intervention pattern that emerged when one-fourth of the American population was rural/agricultural, and its income much lower than the average, survives even when both of these factors are inverted. An honorable way out would be to say that it is essentially a political phenomenon, which deserves, therefore, a political explanation and not an economic one. In other words, the mission of economics would be to demonstrate that the farm policy is obsolete, period. Explaining why society opted to maintain it until now is a task for political science.

Notwithstanding, if there is one thing that cannot be said of economists it is that they are capable of modesty. They do not want to understand and explain only the economic issues. The majority thinks they can give purely economic explanations for everything. And the dominant contemporary theories stimulate this presumption.

Modern economic (*laissez-faire*) liberalism has modeled agents' political behavior on "premium seeking," "revenue seeking," "rent seeking," or "tariff seeking" to demonstrate its "unproductiveness", despite its "legitimacy and democratic value" (Bhagwati, 1982). At the other extreme, the "public choice" model denies any incompatibility between these two rationalities, as the competition between the interest groups would promote a balance in which everyone maximizes their income while optimizing their expenditures on political pressure (Becker, 1983, 1985). What these two approaches have in common is the presupposition of the passivity of public institutions. The government would simply be a set of conventions that organizes and mediates disputes between interest groups, along with legitimizing the results of the confrontations.

Even though they did not manage to produce a third theoretical option, the economists who sought to apply these models to their analyses of American agriculture noted their heuristic poverty. They showed, for example, that the American farm policy of the 20th century combined very "productive" programs (which improve economic efficiency) with frankly "predatory" programs, which only served to transfer income to powerful groups (Gardner, 1983, 1987, 1989, 1990, 1992, 1995, Rausser, 1992; de Gorter et. al., 1992; Rausser and Zusman, 1992; Foster and Rausser, 1995). These applications concluded that the proportions between these two categories tended to balance each other out. Income transfers, which can seem simply "predatory," are actually, in some cases, politically necessary in order for society to optimize the "productive" policies. Clearly "productive" public interventions can also become "predatory" schemes. And public institutions are not at all passive. Exercising certain autonomy, the government seeks to respond to public interest by coordinating the interest groups. In other words, in the concrete analysis of a concrete situation, both models turn out to be inoperative.

For a long time this coordination of the interest groups on the part of the government was denied by political scientists. They tended to affirm the opposite, using precisely the example of agriculture, with which it appeared easy to show how the interest groups manipulated the Congressional committees and, through them, the Department of Agriculture (Lowi, 1973).

This type of interpretation, popularized by the image of the "iron triangle",

was also completely contradicted by the advancement of research on the theme. Even if such a “triangle” had functioned at some time in the past, it is imperative to recognize that it was transformed in a sort of immense cone, whose base is formed by the electoral districts. The relative force of the interest groups is more directly related to their capacity to influence the Congress members through their respective electoral bases than through the circuits and networks, which surround Capital Hill. These serve more as sources of information than as forms of political influence (Salisbury, 1990, 1995; Browne, 1995).

The main current tendency of political science is to consider that the capitalist economic activity needs to be “coordinated” (or governed) by institutional arrangements; and that the set of institutions that guarantees this coordination forms the economy’s “governing system”. This means that political science also counters the principle of mainstream economics, according to which there would exist only two essential mechanisms of governance: markets and corporate hierarchies. Besides the State itself, reluctantly introduced into the economists’ large theoretical models, political scientists emphasize “informal networks” and the “association”. These five mechanisms of coordination – market, hierarchies, states, networks, and associations – are present, in varying degrees, in any economic sector. And in the search for a good theory for this “sectoral economy”, political scientists tend to choose among two alternative avenues of inspiration: that of “self-organization” and that of “administration” (public policies) (Hollingsworth et.al., 1994).

The distance between this political approach and the economic regulation theory seems only a question of terminology. To the latter, the “mode of regulation” is a set of procedures and behaviors that has the capacity to reproduce social relationships, support the accumulation and guarantee systemic cohesion (Boyer, 1986, 1990, 1995; Debailleul, 1989; Lipietz, 1989).

Well then, in the United States, the mode of regulation of the Golden Age (which the regulationists christened as “Fordist”) was developed during the fifteen years that separated the New Deal from the famous workers’ agreement of 1948, between General Motors and United Auto Workers. It was during this period that the institutional bases were established and later guaranteed the continuous and accelerated growth of 1950-1973. One of these institutional arrangements – farm policy – was effectively born from a great settlement promoted by F. D. Roosevelt’s administration together with the interest groups of the sector. The compromise between the “allotment” and “parity” plans had a decisive historical importance, as it produced the organic structure of 20th century farm policy.

This compromise allowed for a price stabilization whose essential role was to lessen the force of the impact of new technologies and productivity gains. In the previous decades, the necessity of cheap food had led the American society to incite a strong supply expansion. In 1933, it created the institutional arrangement that combined the food cheapening achieved in the 1920s with the necessity of guaranteeing farmers an acceptable standard of living.

The New Deal farm policy established an intrinsic contract between society and agriculture, according to which the former committed itself to protecting price-

es and farm incomes, while the latter committed itself to guaranteeing food abundance (Cochrane and Runge, 1992; Paarlberg, 1990). This was the essence of the sector regulation during the Golden Age, or rather, the agri-food component of its mode of regulation.

The period of economic listlessness which began in the 70s and drags on until today has made clear the prostration of the mode of regulation of the Welfare State and the Keynesian policies, inappropriately referred to as “Fordist”. With the successive defeats of the parties with a labor and social-democratic orientation over the last fifteen years – beginning with the spectacular victories of Thatcher and Reagan – perhaps we have been seeing the appearance of the institutional bases that will guarantee the next phase of capitalist expansion. There are still many unknown factors about the new mode of regulation, but we can see that the previous one is in tatters in all the advanced capitalist countries (Weisskopf, 1991).

The preparation of the latest American farm bill highlighted even more the two principal weak points of the agri-food component of the mode of regulation of the Golden Age: (a) the income stabilization mechanism connected to supply control and (b) the environmental impacts of the dominant productive systems.

The 1996 FAIR Act will not do away completely with the commodity programs, nor will it provoke a radical change in the conventional agricultural practices. But it does signify that the new mode of sector regulation will have an income policy disconnected from planning restrictions and will have to respond to the increasing social pressure for environmental protection and healthier food. In a future social contract, American farmers will have to commit to continue guaranteeing food abundance, but now with clean work. And society will have to commit to continue guaranteeing an acceptable standard of living for farmers, without the use of so many controls and so much public spending. In the North, it is precisely the difficulties in negotiating this new contract that are responsible for the sluggishness of the emergent agri-environmental transition.

4. KEY PROVISIONS

As American agriculture starts to move away from restrictive commodity programs, the government’s role will become increasingly important in trade, research, conservation, food safety, food security, and rural development. It remains the role of the Federal government to keep open access to world trade; to ensure research on new production systems and new crops; to safeguard the quality of soil and water and protect wildlife; to inspect food before it reaches dinner tables; to provide needy persons with access to a more nutritious diet; and to provide support for rural infrastructure. Regarding the new farm bill, four of these aspects need to be emphasized.

Increasing market reliance

The 1996 FAIR Act (104-127) removes the link between income support payments and farm prices by providing for seven annual fixed but declining payments. Farmers who have participated in the wheat, feed grains, cotton, and rice programs in any one of the past five years can enter into seven-year “production flexibility contracts for 1996-2002.” That contract will require participating producers to comply with existing conservation plans for the farm. Participants may plant 100% of their total contract acreage to any crop, with limitations only on fruits and vegetables. Land must be maintained in agricultural use. Unlimited haying, grazing, planting and harvesting of alfalfa and other forage crops is permitted with no reduction in payments.

The payment share allocated to each commodity will be apportioned to individual farms based on each contracting farm’s payment quantity of a contract commodity. Total payment levels for each fiscal year is fixed at \$5,570 billion in 1996, \$5,385 billion in 1997, \$5,800 billion in 1998, \$5,603 billion in 1999, \$5,130 billion in 2000, \$4,130 billion in 2001, and 4,008 billion in 2002 (1996 FAIR Act, title I). And the budget authority for agriculture spending will drop from \$63,087 billion in fiscal 1996 to \$52,684 billion in fiscal 1997, as passed on June 12, 1996 by the House of Representatives.

Zulauf and Tweeten (1996) obtained insights into producer decisions in this “post-commodity-program world” by examining how producers responded to the flex acreage provision enacted in 1990. This provision reduced the number of program base acres on which a farmer received deficiency payments by 15%. Any crop could be planted on these “flex acres” except fruits, vegetables, and other crops designated by the secretary of agriculture. There are four important consequences among the implications suggested by the authors: a) US feed grain production may become even more concentrated in corn, continuing a long-run trend which has seen the share of corn in US feed grain production grow from 72% in 1960-64 to 88% in 1990-94; b) the production of corn, wheat, oats, barley, and sorghum will move toward joining cotton and rice as regional crops; c) the concentration of feed grain production in the central states may act as a brake on the movement of beef, dairy, and hog production to the South and West, or that move will act as a brake on the concentration of feed grain production in central states; d) some cropland, especially in more marginal regions, will shift to grazing. Other cropland will shift to trees. Little land will lie idle, although some currently marginal grazing land may return to its natural state.

Increasing trade

American agriculture’s dependence on international markets is growing. Already more than double that of the US economy as a whole in the proportion of products traded, the farm sector is expected to be about 2,5 times as reliant on trade by the year 2000. Thus, trade is considered to define agriculture’s future far more than income support payments.

In the 1996 FAIR Act (title II), trade and food aid programs are reoriented with more emphasis on high-value and value added products. As important as grains and other bulk commodities are to agricultural exports, the high-value, consumer-ready, and semi processed agricultural products are the fastest growing segments of the market. In the 1970's, nearly 70% of US exports were bulk commodities. These now account for less than half. Consumer-ready foods grew from 13% of all exports to about 35% in the same time period.

While China is expected to be the key source of global growth in bulk trade, it is also an expanding market for US consumer-ready products. Japan, Korea, Indonesia, India, and the other developing Asian markets are growing as well. And for the Secretary of Agriculture, Mexico, although still recovering from the peso devaluation, remains an excellent long-term market for US exports (Glickman, 1996).

Maintaining conservation

A conservation amendment on the farm bill backed by Sherwood Boehlert, a Republican Representative of New York, sailed easily through the House (372-37), a credit, he said, "to a newfound sensitivity to environmental concerns." Leading environmental groups, including the Natural Resources Defense Council and the Environmental Defense Fund, offered qualified support of this amendment, which appealed to a broader coalition. Boehlert included provisions for farmers and hunters that gave a big boost, including a seven-year authorization for the 36,4 million-acre Conservation Reserve Program, which pays farmers to idle environmentally sensitive land. The House also approved (299-124) an amendment by Mark Foley, Republican-Florida, that appropriates \$210 million to buy land and provide for other environmental protection in the Everglades in South Florida. And several other senior Republicans observed that these environmental provisions would not have passed just a year before, when the GOP demonstrated less support for the issue. "There is emerging within the majority a majority that is environmentally sensitive," Boehlert said. As a matter of fact, some Republicans have become concerned about how the issue will play in November 1996, as they took a beating on their environmental record in 1995 (Freedman, 1996).

The Environmental Conservation Acreage Reserve Program was continued, to serve as an umbrella to enable the Secretary to operate conservation programs in a consistent manner. And an Environmental Quality Incentives Program (EQIP) is authorized at \$1,3 billion over seven years to provide technical, educational, and cost-share assistance and incentive payments to crop and livestock producers in implementing structural and management practices to protect soil and water resources. At least half of the fund is allocated to livestock practices.

Reorienting REE strategies

Agriculture is increasingly accountable for its own sustainability. There is continuing public concern about the safety and nutritional value of food, the impact

of technology (biotechnology, irradiation, and information technology), and the effect of production practices on the environment, communities, and animal well-being. The development and adoption of these new technologies will bring about significant changes in agricultural practices and markets. All of these issues will put significant pressure on the agricultural institutions and intensify the need for focused problem-solving programs of the Research, Education and Economics (REE) mission area (USDA, 1996).

The REE is one of the seven major divisions of the Department of Agriculture (USDA). It is composed of four agencies: the Agricultural Research Service (ARS), the Economic Research Service (ERS), the National Agricultural Statistics Service (NASS) and the Cooperative State Research, Education and Extension Service (CS-REES). The 1996 FAIR Act consolidated three existing boards into a single National Agricultural Research, Extension, Education and Economics Advisory Board with 30 members to advise the USDA on national research priorities and policies. This Board replaces three separate advisory committees. The new Act also authorizes a task force to develop a comprehensive plan for consolidation of federally supported agricultural research facilities.

REE is in the process of developing a strategic plan that will guide its programs into the 21st century. This plan will take effect with the beginning of the 1999 fiscal year and until that time will continue to be considered a draft. It delineates five desired outcomes. Each outcome is defined with a brief description. A set of strategic objectives follows for each outcome. The strategic objectives reflect high-priority issues that will be emphasized during the five years of the plan. Prior to the initiation of this strategic plan, each of the strategic initiatives will be further developed with benchmark data, milestones, and definitive measurable outcomes and outputs. The objectives and initiatives will guide REE decisions during the timeframe of this plan.

A summary of the allocation of budget across program outcomes, which is based on scientists' and educators' division of funds, is in the following table.

REE Resource Summary
(Million dollars per year*)

Outcomes	M\$/year	%
Competitive agricultural system in the global economy	444.6	25.4
Safe and secure food and fiber system	444.9	25.4
Healthy, well-nourished population	277.1	15.8
Agriculture's interface with the environment	272.5	15.6
Economic enhancement and quality of life	311.9	17.8
TOTAL	1,751.0	100.0

All the above budget values are based on 1996 appropriated dollars
Source: USDA. REE Draft Strategic Plan, May 15, 1996

CONCLUSIONS

The legitimization of more sustainable agricultural proposals will occur in parallel with the oscillating decline of the protective pattern of US farm policy. This transition involves very complex and varied processes.

Despite the advanced deterioration of commodity programs, nothing guaranteed that their end was near, or even that the new bill would begin the rupture. Even at the end of 1995 it seemed highly unlikely that price support would be substituted by direct income payments. It seemed unlikely that this kind of proposal would be accepted among those who would directly influence the preparation of the new bill. The environmental provisions of the 1996 FAIR Act could not have passed just a year before, when Republicans demonstrated almost no support for the issue.

Despite its vast defects, vagueness, and ambiguities, the new bill broke with the core of a sixty-year-old protective pattern: price support through supply control. By “freeing” farmers from planting restrictions, without an abrupt end to the income supplement offered by the commodity programs, Congress went beyond the most optimistic predictions about what would come out of the decision-making process of the new bill. The 1996 FAIR Act will not do away completely with the commodity programs, nor will it provoke a radical change in the current agricultural practices. But it does signify that the new mode of sector regulation will have to respond to the increasing social pressure for environmental protection and healthier food.

The long term impacts of the 1996 FAIR Act can be easily assessed:

“In the future, farmers will have to commit to continue guaranteeing food abundance, but now with clean work. And society will have to commit to continue guaranteeing an acceptable standard of living for farmers, without the use of so many controls and so much public spending. The ‘islands empires’ of agriculture, environment, and health will have to be bridged. A new pattern for agriculture will have to be explored.”

On the other hand, the short term impacts of the 1996 “FAIR” Act are very difficult to predict:

“It is obvious that producers will have to respond quickly to market changes. But it is simply impossible to say in advance if, in the next seven years, they will capitalize on opportunities and avoid barriers to trade. It is also obvious that producers will have to adapt to changes in how food is produced, processed, and handled until it reaches the consumer tables. However, it is impossible to say in advance if, in the next seven years, they will be able to ensure enhanced safety and health to consumers. Moreover, it is obvious that producers will have to better understand the relationship between agricultural trade, natural resource use, and en-

vironmental quality. Nevertheless, it is impossible to say in advance if, in the next seven years, they will really use more cost-effective, environmentally friendly production practices and systems.”

The fundamental strength of the US farm economy provides ample grounds for optimism. American agriculture is the most competitive in the world. Its competitiveness is attributable to the ability of US agricultural research system to enhance agricultural productivity. Moving away from planting restrictions linked to price supports was an unintentional, but crucial, initiative to foster further agri-environmental innovations.

REFERENCES

- ALLAIRE, Gilles & BOYER, Robert (eds.). (1995). *La grande transformation de l'agriculture*. Paris, Economica.
- AUGÉ-LARIBÉ, Michel. (1955). *La révolution agricole*. Paris, Éditions Albin Michel.
- EVERY, Dennis T. (1995). *Saving the Planet with Pesticides and Plastic: The Environmental Triumph of High-Yield Farming*. Indianapolis, Indiana, Hudson Institute.
- BECKER, Gary S. (1983). “A theory of competition among pressure groups for political influence”, *The Quarterly Journal of Economics*, August, n. 3, pp. 371-400.
- BECKER, Gary S. (1985). “Public Policies, Pressure Groups, and Dead Weight Costs”, *Journal of Public Economics*, 28, pp. 329-47.
- BEUS, Curtis E. & DUNLAP, Riley E. (1990). “Conventional versus Alternative Agriculture: The Paradigmatic Roots of the Debate,” *Rural Sociology*, 55(4), pp. 590-616.
- BEUS, Curtis E. & DUNLAP, Riley E. (1991). “Measuring Adherence to Alternative vs. Conventional Agricultural Paradigms: A Proposed Scale,” *Rural Sociology*, 56(3), pp. 432-60.
- BEUS, Curtis E. & DUNLAP, Riley E. (1992), “The Alternative-Conventional Agriculture Debate: Where Do Agricultural Faculty Stand?,” *Rural Sociology*, 57(3), pp. 363-80.
- BEUS, Curtis E. & DUNLAP, Riley E. (1994), “Agricultural Paradigms and the Practice of Agriculture”, *Rural Sociology*, 59(4), pp. 620-35.
- BHAGWATI, Jagdish N. (1982). “Directly Unproductive, Profit-seeking (DUP) Activities”, *Journal of Political Economy*, vol. 90, n. 51, pp. 988-1001.
- BLOCH, Marc. (1968). *Les caracteres originaux de l'histoire rurale française*. Nouvelle Édition, Seti-rage, Paris, Armand Colin (2 tomes).
- BOSERUP, Ester. (1965). *The Conditions of Agricultural growth*. London, George Allen & Unwin.
- BOSERUP, Ester. (1981). *Population and Technological Change; A Study of Long-Term Trends*. The University of Chicago Press.
- BOYER, Robert. (1995). “Secteurs, régions et modes de régulation,” in: Gilles Allaire & Robert Boyer (eds.) *La Grande Transformation de l'Agriculture*, Paris: Economica, pp.227-240
- BOYER, Robert (1990), “Les problématiques de la régulation face aus spécificités sectorielles. Perspectives ouvertes par la these de Pierre Bartoli et Daniel Boulet”. *Cahiers d'Économie et Sociologie Rurales*, n. 17, I RA-ESR Paris, pp. 39-76.
- BOYER, Robert (1986), *La théorie de la régulation: une analyse critique*. Paris, Éditions La Découverte.
- BROWNE, William P. (1995). *Cultivating Congress: Constituents, Issues, and Interests in Agricultural Policymaking*. University Press of Kansas.
- BROWNE, William P. (1988), *Private Interests, Public Policy, and American Agriculture*, University Press of Kansas.
- BUTTEL, Frederick H. (1995a). “Twentieth Century Agricultural-Environmental Transitions: A preliminary analysis”, *Research in Rural Sociology and Development*, vol. 6, pp. 1-21.

- BUTTEL, Frederick H. (1995b), "Some Observations on Agro-food Change and the Future of the Sustainability Movement", Paper Presented at the Workshop on The Political Economy of the Agro-Food System: Queries, Questions, and Issues; Institute of International Studies, UC -Berkeley & Center for the Study of Global Transformations, UC-Santa Cruz, September 28th – 30th 1995.
- BUTTEL, Frederick & GILLESPIE JR., Gilbert W. (1988). "Agricultural Research and Development and the Appropriation of Progressive Symbols: Some Observations on the Policies of Ecological Agriculture", *Bulletin n. 151* (July 1988). Cornell University: Department of Rural Sociology.
- BUTTEL, Frederick H., KENNEY, M. & KLOPPENBURG JR., J. (1985) "From Green Revolution to Biorevolution: Some Observations on the Changing Technological Bases of Economic Transformation in the Third World", *Economic Development and Cultural Change*, 34 (1): 31-55, October.
- CGIAR. (1994). *Sustainable Agriculture for A Food Secure World, A Vision for International Agricultural Research*, July 1994. Stockholm, SAREC/CGIAR.
- CGIAR (1995a), *Renewal of the CGIAR; Sustainable Agriculture for food Security in Developing Countries*, Ministerial-Level Meeting, *Summary of Proceedings and Decisions*. Lucerne, Switzerland, February 9-10, 1995.
- CHAMBERS, J.D. & MINCAY, G.E. (1966). *The Agricultural Revolution, 1750-1880*. London & Sidney, B.T. Batsford Ltd.
- COCHRANE, Willard W. (1958). *Farm Prices: Myth and Reality*. Minneapolis, University of Minnesota Press.
- COCHRANE, Willard W. (1979), *The Development of American Agriculture*. Minneapolis, University of Minnesota Press.
- COCHRANE, Willard & RUNGE, C. Ford. (1992). *Reforming Farm Policy: Toward a National Agenda*. Ames, Iowa State University Press.
- DEBAILLEUI, Guy. (1989). *L'évolution de la politique agricole américaine: une approche régulationniste*, These de Doctorat, Institut National Agronomique Paris-Grignon, 372 p.
- DOCKÈS, Pierre & ROSIER, Bernard. (1992). "Long Waves: the Dialectic of Innovations and Conflicts", in: Kleinknecht, Alfred, Ernest Mandel & Immanuel Wallerstein (eds.) (1992). *New findings in Long-Wave Research*. London, Macmillan, NY, St.Marrin's, pp. 301-315.
- FOSTER, W.E. & RAUSSER, G.C. (1995). "Coalition Breaking and Policy Reform", in Gordon C. Rausser (ed.) *GAIT Negotiations and the Political Economy of Policy Reform*. Springer-Verlag, pp. 107- 24
- FREEDMAN, Allan. (1996). "A Change in the Environment?," *Congressional Quarterly*, March 2, p. 544.
- GARDNER, Bruce. (1983). "Efficient Redistribution Through Commodity Markets", *American Journal of Agricultural Economics*, n. 65 (May), pp. 225-34.
- GARDNER, Bruce. (1987), "Causes of U.S. farm commodity programs", *Journal of Political Economy*, vol. 95, n. 2 (April), pp. 290-310.
- GARDNER, Bruce. (1989), "Economic theory and farm policies," *American Journal of Agricultural Economics*, 71 (1989), pp. 1165 -71.
- GARDNER, Bruce. (1990), "The United States" in Fred H. Sanderson, *Agricultural Protectionism in the Industrialized World*, Washington DC, Resources for the Future.
- GARDNER, Bruce. (1992), "Changing economic perspectives on the farm problem", *Journal of Economic Literature*, XXX (March), pp. 62-101.
- GARDNER, Bruce. (1995), "Practical Policy Alternatives for the 1995 Farm Bill", in Brian D. Wright & Bruce L. Gardner (1995). *Re forming Agricultural Commodity Policy*. AEI Studies in Agricultural Policy. Washington D.C. The AEI Press, Publisher for the American Enterprise Institute, pp. 69-146.
- GERVAIS, Michel, JOLLIVET, M. & TAVERNIER, Y. (1976). *Histoire de la France Rurale*. Paris, Seuil (5 tomes).
- GLICKMAN, Dan. (1996). "Agricultural Policy for a New Century", *Agricultural Outlook*, April, pp. 2-4.

- GOODMAN, David, SORJ, B. & WILKINSON, J. (1981). *From Farming to Biotechnology. A Theory of Agro-Industrial Development*. London, Basil Blackwell.
- GOODMAN, David & WATTS, Michael. (1994). "Reconfiguring the Rural or Forging the Divide?: Capitalist Restructuring and the Global Agro-Food System". *The Journal of Peasant Studies*, vol. 22, n. 1, Oct., pp. 1-49.
- DE GORTER, Harry, NIELSEN, David J. & RAUSSE R, Gordon C. (1992). "Productive and predatory public policies: research expenditures and producer subsidies in agriculture". *American Journal of Agricultural Economics*, 74 (February), pp. 27-37
- HAMLIN, Christopher & SHEPARD, Philip T. (1993). *Deep Disagreement in U.S. Agriculture: Making Sense of Policy Conflict*. Westview.
- HASSANEIN, Neva & KLOPPENBURG JR., Jack. (1995). "Where the Grass Grows Again: Knowledge Exchange in the Sustainable Agriculture Movement". *Rural Sociology* 60(4), pp.721-40.
- HAZELL, Peter B.R. & RAMASAMY, C. (eds.). (1991). *The Green Revolution Reconsidered : the Impact of High-Yielding Rice Varieties in South India*, Published for the International Food Policy Research Institute, Baltimore and London, The Johns Hopkins University Press.
- HOLLINGSWORTH, J. Rogers SCHMITTER, Philippe C. & STREECK, Wolfgang (eds.). (1994). *Governing Capitalist Economies: Performance and control of Economic Sectors*. Oxford University Press.
- HOLLINGSWORTH, J. Rogers SCHMITTER, Philippe C. & STREECK, Wolfgang (1994a). " Capitalism, Sectors, Institutions and Performance" in J. Rogers Hollingsworth, Philippe C. Schmitter & Wolfgang Streeck (eds.). (1994). *Governing Capitalist Economies: Performance and control of Economic Sectors*. Oxford University Press.
- JONES, Eric Lionel & WOOLF, Samuel J. (1969). *Agrarian Change and Economic Development*. London, Methuen.
- KLINKENBORG, Verlyn (1995) "A Farming Revolution: Sustainable Agriculture". *National Geographic*, December, pp. 60-88.
- KLOPPENBURG JR., Jack. (1991). "Social Theory and the De/Reconstruction of Agriculture Science: Local Knowledge for an Alternative Agriculture". *Rural Sociology*, 56(4). pp. 519-48.
- LIPIETZ, Alain. (1986). *Mirages et miracles: problemes de l'industrialisation dans le tiers monde*. Paris, La Découverte.
- LOWI, Theodore J. & RIPLEY, Randall B. (eds.). (1973, 3rd edition). *Legislative Politics*. U.S.A., Boston, Little, Brown and Company.
- NORGAARD, Richard B. (19 94). *Development Betrayed: The End of Progress and a Coevolutionary Revisioning of the Future*. Routledge.
- PAARLBERG, Robert. (1990). "The Social Contract Between Society and Agriculture", *apud* Cochrane & Runge (1992: 18).
- PAARLBERG, Robert. (1989), "The Political Economy of American Agricultural Policy: Three Approaches," *American Journal of Agricultural Economics*, 71 (dec. 1989), pp. 1157-64.
- RAUSSER, Gordon C. (1982). "Political Economic Markets: PESTs and PERTs in Food and Agriculture". *American Journal of Agricultural Economics*, 64 (December), pp. 821-33.
- RAUSSER, Gordon C. (1992), " Predator y versus Productive Government: The Case of U.S. Agricultura! Policies". *Journal of Economic Perspectives*, vol. 6, n. 3, summer 1992, pp.133-57.
- RAUSSER, Gordon & Zusman, Pinhas. (1992). "Public Policy and Constitutional Prescription". *American Journal of Agricultural Economics*, 74 (may), pp. 247-57.
- RIFKIN, Jeremy. (1995). *The End of Work: The Decline of the Global Labor Force and the Dawn of the Post-Market Era*. The Putnam Berkley Group Inc.
- RUTTAN, Vernon W. (ed.). (1994). *Agriculture, Environment, and Health: Sustainable Development in the 21st Century*. University of Minnesota Press.
- SALISBURY, Robert H. (1990). "The Paradox of Interest Groups in Washington: More Groups, Less Clout", in Anthony King (ed.) *The New American Political System*, 2d version. Washington D.C., American Enterprise Institute Press, Reprint in Salisbury (1995: 339-64).

- SALISBURY, Robert H. (1995), *Interests and institutions: Substance and Structure in American politics*. Pittsburgh and London, University of Pittsburgh Press.
- SERVOLIN, Claude. (1985). "Les politiques agricoles", in *Traité de science politique*, t. 4, Paris, PUF.
- SERVOLIN, Claude (1989), *L' Agriculture Moderne*. Paris, PUF.
- THOMPSON, F.M.L. (1968). "The Second Agricultural Revolution, 1815-1880". *Economic History Review*, vol. 21 (1).
- USDA. (1996). "REE Draft Strategic Plan". May 15, 22 p.
- VAN BATH, B.H. Slicher. (1960) *De Agrarische Geschiedenis van West-Europa 500-1850*. Het Spectrum. (*História Agrária da Europa Ocidental: 500-1850*. Lisbon, Presença, 1984)
- VEIGA, José Eli. (1995). "Sustainable Agriculture: Critical Transition Issues," (paper) Conference *The Politics of Sustainable Agriculture*, University of Oregon, Eugene, October 7-8.
- VEIGA, José Eli. (1994), *Metamorfoses da política agrícola dos Estados Unidos*. São Paulo, Annablume/FAPESP.
- VEIGA, José Eli. (1991), *O desenvolvimento agrícola: uma visão histórica*. São Paulo, EDUSP e Hucitec.
- WEISSKOPF, Thomas E. (1991). "Marxian Crisis Theory and the Contradictions of Late Twentieth-Century Capitalism". *Rethinking Marxism*, vol. 4, n. 4, pp. 70-93.
- ZULAUF, Carl & TWEETEN, Luther. (1996). "The Post-Commodity-Program World". *Choices*, First Quarter, pp. 8-10.

