

Agri-environmental programs in the US and EU and the future of the WTO
a Political Economic Study
August 10, 2003
Research Proposal

It has been widely recognized in both the US and EU that in order to construct agricultural policy packages that are both politically sustainable and in compliance with the requirements of the World Trade Organization (WTO), it is necessary to incorporate environmental provisions into these packages. The goal of this proposal is to investigate and compare the trend toward melding agricultural and environmental policy in the two regions, and to relate these developments to the current, Doha Round of negotiations over the WTO. As a preliminary step, we are presently completing a comparative analysis (Baylis et al., 2004) of the agri-environmental nexus in the US and the EU.¹ In that paper, we identify a number of key differences in the nature of this nexus in the two regions, and argue that they can be traced in large part to fundamental differences in the European and American political-economic landscapes. We now propose to explore the implications of these differences for the role that the WTO can play in promoting trade liberalization.

The primary role of the WTO is to promote trade liberalization through its impact on the internally negotiated domestic and trade-related policies of its member countries. It follows that the primary measure of the WTO's ultimate success must be the overall quality—measured in terms of trade friendliness and market orientation—of the policy packages—e.g., the US's Farm Bill and the EU's CAP—that are negotiated by its members. The challenge confronting participants in the Doha Round, then, is to impose discipline on WTO member countries' internal policy-making processes, yet provide stakeholders within these countries with sufficient negotiating room to build politically sustainable coalitions in support of WTO-compatible trade-friendly policy packages. In the context of agri-environmental policy, the difficulty of this task is compounded because a common set of policy restrictions must be super-imposed on multiple, quite distinct political-economic landscapes: a protocol that strikes the right balance between discipline and flexibility within one landscape may, in another, be too rigid, too permissive, or prohibit tradeoffs which might lead to compromise. Our proposed research will provide a framework for investigating this challenge. We propose to incorporate the political-economic differences identified in Baylis et al. (2004) into a pair of computable, multilateral negotiation models of the agri-environmental policy formation processes within the US and EU. We will then use these models to analyze and contrast how the internal ag-environmental policy negotiations within the two regions will be impacted by alternative Doha Round negotiating proposals.² Our ultimate objective is to develop a framework within which such proposals can be evaluated not only on their purely economic/trade-theoretic merits but also on the extent to which they are, first, politically implementable,³ and, second, achieve a degree of balance between marginal social economic benefits and marginal political costs.

¹ In that study and the present proposal, we restrict our attention to the two largest trading blocs, and model the Rest Of The World as an aggregate, exogenous factor. We recognize, of course, that by not incorporating issues such as EU enlargement and the needs of developing countries, our analysis will be significantly incomplete. Tractability, however, dictates specialization.

² It should be emphasized at the outset that it is *not* the Doha Round of negotiations itself that we are modeling. In our models, we treat WTO provisions as parameters, and focus on the negotiations at the member-state (or member-region) level that will take place once the Doha Round has been completed.

³ In its published documents, the EU appears to be more sensitive to the implementation issue than the US. For example, the preamble to the EC Comprehensive Negotiating Proposal to the WTO states: "The EC believe that in order to achieve (the goals of the WTO), it is vital to muster strong public support, which can only be achieved if other concerns are met..." (European Community, 2000, p. 1). On the other hand, the corresponding US document (United States (2000)) appears to have been written without any regard to implementability.

Descriptive study (Baylis et al., 2004): Traditionally, agricultural production has received significant financial support from governments in both Europe and America. Since the Uruguay Round and the inauguration of WTO, the production-linked methods by which support has traditionally been administered are now much more difficult to defend. Nonetheless, in the late 'nineties, levels of agricultural support have increased in both the EU and the US. In particular, in both regions, more agricultural funding has been funneled through environmental programs, reflecting the fact that that agri-environment programs are widely viewed as a trade-friendly way to transfer income to farmers while responding to growing pressure from an expanding environmental lobby. It is notable, however, that the nexus between agriculture and the environment has evolved in strikingly different ways in the two regions. In our paper we advance three hypotheses relating to these differences. To support these hypotheses, we provide evidence obtained from a detailed comparison of agri-environmental programs in the US and EU. Finally, we consider explanations for the observed contrast, distinguishing between purely economic considerations—primarily supply-side differences in relative factor endowments and demand-side differences in consumer preferences—and political considerations, ranging from ideological factors and cultural norms to differences in the structure of the policy-making process. We argue that supply-side economic considerations alone are insufficient to explain the contrast, and conclude that certain fundamental differences between the two regions' political-economic landscapes (reflecting, in part, differences in social preferences) are important explanatory factors.

Of the three hypotheses we advance in the paper, our primary one is that US agri-environmental policy has traditionally treated agricultural production and the environment as if they were substitutes, whereas EU policy treats them more as complements. Specifically, the agri-environmental programs that have evolved the US reflect a perceived intrinsic conflict between the goals of expanding (or even maintaining) agricultural production and preserving the environment. The programs that have evolved in Europe, on the other hand, reflect a view that an appropriately managed expansion of agricultural activity can actually benefit the environment. Our second and third hypotheses are subsidiary to the first. To the extent that the EU does acknowledge the potential negative environmental externalities resulting from agricultural production, its policy focus has been on pollution caused by intensification—e.g., high livestock density, increased use of chemical inputs. In the US, by contrast, the focus has been on environmental problems resulting from extensification: pollution has traditionally been associated with the use of marginal land—e.g., highly erodible soil, drained wetlands. Our third hypothesis is that the EU agri-environmental programs tend to target the inputs associated with agricultural production processes—e.g. organic farming, pesticide use, animal welfare—whereas US programs tend to focus on the anticipated environmental outputs associated with these processes—e.g. acreage restored to natural habitat, levels of chemical run-offs, soil erosion.

After reviewing the evidence in support of our three hypotheses, we consider alternative explanations of the observed contrasts. We emphasize in particular the explanatory roles played by variations across regions in social preferences, cultural norms/ideology and the processes by which policy decisions are made. A striking difference between US and EU social preferences concerns the general attitude of the taxpaying public towards agriculture. On average, the European voter tends to have closer family ties to agriculture than does the American voter, and is more attuned to the positive externalities—appealing rural landscapes, etc—associated with agriculture. As a result, it is more likely in Europe that popular support can be crystallized around concepts such as multi-functionality that are founded upon these externalities. As an example of cultural/ideological

variations, we cite a widely noted difference between the American and European concept of “natural” as it applies to land use. In the EU, where land has been farmed for millennia, “natural” is generally interpreted as “farmed in the traditional way.” In this view, environment and wildlife has adapted over time to agricultural activity, and would be negatively impacted if the land were left idle. In the US, by contrast, farming is a relatively recent activity, and “natural” is equated with a state of wilderness. The third variation listed above—in policy decision-making processes—is readily apparent. While the EU can loosely be described as a “federal” structure, the “federal government,” obviously plays a much weaker decision-making role in Europe than in America. By contrast, the member-states of the EU play a stronger role in the agricultural policy formation process than do the states of the US, where lobbying efforts are organized by commodity group rather than individual states. Another difference is that in the EU, a super-majority vote is required for legislative approval, while in the US, only a simple majority is required.

Taken together, these variations have important political-economic implications. In particular, they lead us to predict that in the US vs the EU, significantly different domestic compromises will need to be crafted if sustainable political coalitions are to be built in support of WTO-compliant packages of agri-environmental programs. The research proposed below will provide a formal framework within which to develop this idea.

Proposed analytical framework: Our analytical work will draw on and complement the descriptive study summarized above. We will develop a formal framework within which to study the ways in which WTO modalities interact with the domestic political economies of the EU and US. Our proposed framework will provide a rigorous methodology within which to test hypotheses about how the various possible outcomes of the Doha Round of WTO negotiations will impact the domestic policy formation processes in the two regions. Our ultimate objective is to gain insight into the problem of crafting sustainable, trade-friendly, environmentally sound policy outcomes within both the EU and the US.

The framework for our analysis will be the bargaining model developed in Rausser and Simon (1999). This is a computer simulation model designed to analyze complex multi-issue, multi-agent negotiation problems. (See for example Adams et al. (1996), Thoyer et al. (2001) and Simon et al. (2002).) We will develop two parameterizations of the model, representing the policy formation processes within the EU and US. The parameterizations will include:

- (a) a list of political actors, or *players*;
- (b) a vector of *access probabilities*, reflecting the relative political power of the players;
- (c) a space of policy variables, called the *bargaining space*, over which the players will negotiate; each element of the bargaining space is vector of settings on policy instruments, called a *policy package*.
- (d) a *default outcome*, which is a reduced form representation of what would happen if negotiations were to break down;
- (e) a *payoff function*, which is a mapping assigning to each policy package in the bargaining space a vector of payoff numbers, one for each player.

We anticipate that the US version of the model will be structured as follows. The set of actors will include the traditional farm interests, a composite environmental lobby, a composite consumer/taxpayer group and the Federal government. Each policy package will be a stylized representation of the Farm Bill. Since there is no clear consensus on what would happen if negotiations over the Bill were to break down, we will model the default outcome as a lottery over a number

of possible scenarios. The payoff function will reflect the objectives of the various parties at the negotiating table. For agricultural stakeholders, the first step toward constructing the mapping from policy packages to payoffs will be to determine, for each proposed package, the profits that these stakeholders can expect to earn, given the prices and economic activity levels induced by that package. To complete the specification of this function, however, we will need to make a number of judgment calls, such as: how should we quantify the non-pecuniary benefits that farmers clearly derive from farming, or the weights that our composite environmental stakeholder assigns to the various environmental quality indices? Similar difficulties will arise when we specify the European model: for example, how should we quantify the benefits that European taxpayers derive from non-trade concerns? Some of these difficult quantification problems will be resolved when we calibrate our parallel models to the status quo in the two regions. We anticipate, however, that the calibration exercises will involve more unknowns than equations, leaving us with a number of unspecified utility parameters that will have to be assigned based only on qualitative information.

WTO rules and modalities will impact our models in a number of ways, depending on whether they are more appropriately modeled as “hard” or as “soft” constraints on the regions’ internal policy formation processes. A “hard” constraint amounts to an unequivocal proscription on certain domestic policies; we assume that players will never propose such policies and incorporate the WTO rule into the model as a restriction on the bargaining space. In most cases, however, a WTO modality will constrain domestic bargaining processes in a less stark way, by raising the probability that certain agricultural policies will generate either negative political fallout (as did the current Farm Bill) or, depending on how domestic and world economic conditions unfold, WTO economic sanctions. We refer to such modalities as “soft” constraints and incorporate them into the model as negative increments to players’ utility functions. Typically, this will involve a chain of subjective speculation. Consider, for example, how a WTO Aggregate Measure of Support cap will affect a particular agricultural stakeholder’ payoff function? To answer this question one must estimate, for each package in the bargaining space: (a) the probability that the package will result in future economic activity levels—and hence program payouts—that violate the cap; (b) the probability that this violation, if it occurs, will result in actual WTO sanctions; and (c) if they are imposed, the probability that the sanctions will negatively impact the particular stakeholder. To represent this subjective uncertainty, soft constraints will be represented in the model as lotteries over outcomes, including a range of outcomes representing possible sanctions with different distributions of incidence and hence different implications for players’ utilities. (For political stakeholders such as the Federal government, policy packages that have even the potential to contravene WTO provisions will have more direct, negative utility implications. The task of representing these implications in quantitative terms, however, will be no less difficult.) A third way in which a WTO provision can affect the specification of our domestic games is through its impact on the lottery over default outcomes. The higher is the probability that this lottery will result in WTO sanctions with significant negative utility consequences, the more scope will there be within the bargaining space for a compromise outcome to be reached.

Once the base-case versions of our models have been specified and calibrated, we will proceed to the analysis phase of the project. In this phase, we will utilize the numerical comparative statistics techniques for analyzing the Rausser-Simon model developed and described in Adams et al. (1996) and Simon et al. (2002). We will focus narrowly on how various perturbations of the major Doha Round proposals currently under consideration will affect the scope for melding agricultural and environmental policies, in the service of constructing politically sustainable policy

packages—Farm Bills and CAPs—which reduce protection and trade-distorting domestic support in accordance with Article 20 of the URAA. To reiterate, our starting point is that Doha Round proposals should be evaluated not only on their economic/trade-theoretic merits but also on the extent to which they are politically implementable. Moreover, since the configurations of internal political-economic forces relating to the agri-environmental nexus are so different in the two regions, we anticipate that any given WTO proposal will impact their policy negotiations in quite different ways. Consequently, proposals designed with a view to facilitating compromise within a particular political-economic context may have counter-productive political implications when imposed upon others. For example:

- In the EU, a politically acceptable form of agri-environmental support is to assist producers who convert to organic production. If the specification of the Green Box were modified so that an increase in the production of certain quality attributes—“organicness”—were to be classified as more than minimally production distorting, then this class of assistance would be located in the Amber Box. Since the US tends not to support farmers for increasing production quality attributes, we would expect this modification to have significant political ramifications in Europe, but not in America.
- In the US, a politically acceptable form of agri-environmental support is to assist producers, through EQIP, to adopt certain technologies such as drip irrigation, no-til, or pasture management (through fencing). A stricter version of the Green Box might classify these innovations as production-increasing or cost-decreasing, in which case the assistance would be classified as Amber. In the EU, by contrast, significant payments are directed towards preserving “traditional”—and, by implication, lower-yield—production methods. Consequently, we would expect this modification to have significant political ramifications in America, but not in Europe.

When analyzing the political implications of a Doha Round proposal, we need to do more than evaluate each of its individual components in isolation. Because of our concern with implementability, we need to evaluate the entire proposal as a whole, paying particular attention to how its components will interact with each other. If all of these components are very tightly specified, then participants in either of our internal negotiating games may be denied sufficient degrees of freedom to build any sustainable coalition in support of any WTO-compliant policy package.

- This issue is most readily apparent when the components in question are the various “boxes” into which subsidies are classified. Doha Round proposals typically discuss each box in turn, without addressing the interactions between them. In practice, on the other hand, policy debates at the member state level often center about how to move payments between boxes in a WTO-compliant way.⁴
- For example, one way that the EU currently mitigates farmers’ political opposition to CAP reform is by converting some of its commodity payments into payments targeted towards extensive agriculture, particularly preservation of pasture. Under the current, relatively imprecise specification of the Green Box, this redirection shifts Amber Box payments into the Green Box. However, if the specification of the Green Box were tightened along lines

⁴ The language in the preamble to the US’s Phase One Doha proposal does not suggest that facilitating tradeoffs across boxes is high on the list of US concerns: “The specific elements of the United States approach entail reforms across all measures that distort agricultural trade and that once adopted will reduce levels of protection, close loopholes that allow for trade-distorting practices...” The proposal then goes on to propose changes would that, in effect, tighten the specification of all boxes simultaneously. (United States, 2000, p. 1).

that the US has advocated, to the point that preservation of pasture is determined to be more than minimally production distorting—because it increases the production of lamb or beef, or lowers its cost—then this European application of the agri-environmental nexus in the service of WTO compliance would no longer be available. Indeed, if the proposed tightening were combined with the US proposal to shift Blue Box programs into the Amber Box, then the EU’s problem of constructing a WTO-compliant package that its farmers will accept might well become insoluble.

On the other hand, if many of a proposal’s components are broadly specified, there may be so much room for interpretation that the proposal will prove ineffective as a vehicle for imposing discipline within any context. The challenge, then, is to find a middle ground. One goal of our project is to gain insights into the nature of this challenge, by exploring the scope for designing rules and modalities that can strike a balance between interfacing effectively with diverse political economic systems, while acting as a disciplinary force on all of them.

The scope of our study goes beyond the issue of implementability. To evaluate any political-economic reform proposal, one must weigh its political costs against its economic benefits. As usual, a necessary condition for political optimality is that the ratio of marginal social benefits from increasing the pace of reform in two different directions must equal the ratio of marginal political costs of doing so. In our context, the primary component of political cost is the purchase of farmers’ acquiescence at the negotiating table. The role of the agri-environmental nexus is that it provides the Doha Round community with political “funds” with which to “buy down” from these farmers traditional forms of agricultural distortions in exchange for possible increases in collateral distortions associated with the pursuit of environmental objectives. In the extensive debate on the Doha Round to date, little has been said about the nature of the tradeoffs involved in this buy down, in terms of either costs or benefits. In this context, of course, relative costs and benefits are both enormously difficult and controversial to quantify in monetary terms. Moreover, as we have observed in our descriptive paper, the valuation of environmental distortions and benefits varies significantly across regions. These difficulties, however, do not diminish the need for a conceptual framework within which to investigate these tradeoffs. The formulation outlined in this proposal will, we believe, be one of the first formal attempts to provide such a framework.

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