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Briefing Book of Abstracts from:
Global Agricultural Trade in the New Millennium

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Department of Agricultural Economics
Texas Agricultural Experiment Station•Texas Agricultural Extension Service
The Texas A&M University System

Center for North American Studies

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Foreword

This Briefing Book summarizes the results of the national conference entitled *Global Agricultural Trade in the New Millennium* held May 25-26, 2000 in New Orleans, Louisiana. Seventy international trade economists presented analyses of the impacts and issues related to major changes in trade and trade policy expected over the next several years. Abstracts summarizing 36 papers presented by university, government and private sector economists from 25 states and 5 foreign countries are included. A set of the final complete papers presented at the conference will be distributed later this year.

Multilateral trade negotiations on agriculture began in earnest on March 23-24, 2000 in Geneva, Switzerland under the auspices of the World Trade Organization (WTO). These negotiations, which will occur under the WTO Committee on Agriculture, will be crucial in continuing the process of trade liberalization and market expansion begun in the Uruguay Round Agreement on Agriculture (URAA) of the General Agreement on Tariffs and Trade (GATT) which was implemented in 1995. Some analysts argue that greater access to international markets is important to the continued growth and prosperity of U.S. agriculture. Trade growth will be especially important if U.S. farm programs change and producers become more dependent on commercial markets to maintain the size and scale of their farm and ranch operations.

The complexity of trade issues, along with rising protectionism in the United States, has slowed U.S. efforts to pursue new trade arrangements. Trade has been identified as a key source of instability affecting U.S. agriculture. Even so, many major farm group and commodity association leaders are supportive of trade expansion. Others are less convinced of the merits of freer trade, citing the impacts of import competition, unfair trading practices by other countries, and trade gains accruing only to multinational corporations as examples. This Briefing Book addresses these and other critical issues affecting agriculture as the negotiations continue and U.S. negotiators and policy makers seek solutions to complex trade problems. Updated information on the progress of the WTO can be found at http://www.wto.org.

The conference was organized by members of S-287 Southern Regional Research Committee on “The Impacts of Trade Agreements and Economic Policies on Southern Agriculture” and the Southern Extension International Trade Task Force of the Farm Management, Marketing, and Public Affairs Committees. Co-sponsors were the Farm Foundation (Oak Brook, Illinois), the Center for North American Studies (Texas A&M University and Louisiana State University), the Northern Plains Trade Research Center (North Dakota State University), the National Center for Peanut Competitiveness (University of Georgia), the International Agricultural Trade and Development Center (University of Florida), the Arkansas Global Rice Project (University of Arkansas), and the International Trade Center (North Carolina A&T State University). Contributions by

the Louisiana Agribusiness Council and the Costa Rican Consulate of New Orleans are gratefully acknowledged.

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KEYNOTE ADDRESS

Progress in Agricultural Trade Negotiations

Andrew Schmitz, University of Florida

Highlights:

- Policy harmonization among countries has to focus on the issue of farm programs and their impacts on trade.
- The extent to which farm programs fit the green box category is open to debate and should be the subject of an entire conference.
- Analysis is badly needed regarding the Free Trade area of the Americans accord and how such an accord would influence the U.S. position on free trade.
- Major changes in farm policy implemented in 2002/03 will likely impact freer trade outcomes more than will formal world trade negotiations.

Many special-interest groups, including environmentalists and labor unions, were successful in scuttling the 1999 round of trade talks in Seattle. This paper deals specifically with key agricultural trade roadblocks to future trade talks. Freeing up agricultural trade will require coming up with ingenious schemes to deal with those sectors in agriculture that will lose under free trade. Two major players, the U.S. and the EU, are once again heavily transferring income to their farm sectors. Farm programs may or may not be consistent with free trade solutions.

One of the arguments used under the North American Free Trade Agreement (NAFTA) and the Canada-U.S. Trade Agreement (CUSTA) was that progress towards freer trade would require policy harmonization among participating countries. But what happened to policy harmonization? Policy harmonization has not happened as the United States and Canada are moving in opposite directions in the policy arena. Government support per bushel is less than $1.00, compared to $2.25 in the United States and nearly $6.00 in the EU.

Some of the key roadblocks to freer trade in agriculture are outlined in this paper. Policy harmonization among countries has to focus on the issue of farm programs and their impact on trade. (NAFTA and CUSTA should be enforced.) The extent to which farm programs fit the green box category is open to debate and should be the subject of an entire conference. In addition, analysis is badly needed regarding the Free Trade Area of the Americas accord and how such an accord would influence the U.S. position on free trade. Freeing up trade among the countries comprising this block could have significant impacts on U.S. agriculture.

The role of special interest groups in blocking the move to freer trade cannot be overemphasized. There are losers and gainers from freer trade. Producer groups which lose obviously are going to attempt to block trade unless compensatory schemes are implemented. Although there seems to be little agreement, some argue that the biggest losers from freer trade in agriculture are the majority of farm interests. Major beneficiaries include consumers and tax payers. Given the political climate and the mood among U.S. farmers at least, special interests seem to be lobbying the U.S. government for increased protectionism. It seems clear that this mood will impact what, in my opinion, will be a slow movement in re-entering the free-trade negotiations arena. Likely, major changes in farm policy, for example, the major U.S. farm policy to be implemented in 2002/03, will impact freer trade outcomes more than will formal world trade negotiations. It is possible that the 2002/03 U.S. farm program may move the U.S. towards protectionism rather than towards freer trade.

KEY ISSUES INFLUENCING AGRICULTURAL TRADE NEGOTIATIONS

Issues in the WTO Negotiations: Overview and Biotech/GMO Issues

Tim Josling, Stanford University

Highlights:

- The current round of WTO will not be a success unless a substantial step is taken to reduce the high levels of agricultural tariffs.
- The practice of subsidizing exports of agricultural products has been constrained by the Uruguay Round, but most of the subsidies are allowed to continue in a reduced form.
- It is one of the ironies of the Uruguay Round that, even though the biggest conceptual breakthrough was the acceptance by countries that domestic policies were a legitimate concern of trade talks, the actual disciplines imposed on those policies through the reduction of the Aggregate Measure of Support (AMS) were rather weak.
- Perhaps the main determinant of the timing and ambitiousness of the agricultural talks is the decision as to whether they should be a part of a large, multi-sector negotiation or whether they will be self-contained.

The new round of agricultural negotiations was launched on March 24, 2000 in Geneva. The issue is weather any significant progress can be achieved in agriculture in the absence of a more general set of trade talks. The WTO Agriculture Committee, meeting in “special session,” decided on a timetable for the first phase of the talks. The WTO Director-General, Mike Moore, remarked on the “constructive and businesslike” manner in which delegates had conducted the first meeting, and said that the “goodwill” shown at the meeting was a good omen for the talks. Starting the talks, of course, is easier than bringing them to a successful conclusion, but after the chaos in Seattle any good news is welcomed in trade circles.

WTO members are well prepared for the next round of agricultural talks. The issue now is whether any significant progress can be achieved in agriculture in the absence of a more general set of trade talks.

The overall objective of the next round of agricultural talks will be to continue the progress made at the Uruguay Round. This implies negotiations on improved market access, further constraints on export subsidies and, if exporters get their way, some tightening of the rules for domestic support. But there are a number of other issues which have emerged as a result of the experience with the Uruguay Round Agreement which can be thought of as "extensions" of the URAA core agenda, such as the administration of TRQs and the issues of state trading and of export restrictions. As if this was not enough, several other items are clamoring for a place on the agenda. These parallel topics include the sensitive questions of health and food safety along with a number of environmental issues relating to agriculture and biotechnology. Also important to agriculture are a resolution of the issues of regional trade agreements and preferential trade arrangements.

The market access negotiations will be at the heart of the next agricultural round. The current round of WTO will not be a success unless a substantial step is taken to reduce the high levels of agricultural tariffs. With varying degrees of enthusiasm, countries have endorsed the objective of improving market access. If the high level of protection at the border sets agriculture apart, the widespread use of export subsidies is perhaps the most disruptive element in the operation of world markets. The practice of subsidizing exports of agricultural products has been constrained by the Uruguay Round, but most of the subsidies are allowed to continue in a reduced form. In the next round of negotiations, it will be more difficult than ever to persuade countries who export agricultural goods with little or no subsidy

to allow countries such as the EU and the U.S. to continue their market-distorting practices. It is one of the ironies of the Uruguay Round that, although the biggest conceptual breakthrough was the acceptance by countries that domestic policies were a legitimate concern of trade talks, the actual disciplines imposed on those policies through the reduction of the Aggregate Measure of Support (AMS) were rather weak. The key question for the next Round is therefore whether to strengthen or abandon the attempt to constrain domestic policies.

The next "round" of agricultural talks will be different in many respects from the Uruguay Round. In some ways the task of the negotiators will be more clear-cut, in large part because of the transparency introduced by the Uruguay Round Agreement on Agriculture. Tariff levels are easier to negotiate than non-tariff barriers, and the defined commitments on export subsidies and domestic support can be subject to further cuts without revisiting the definitions. But there are several countries that would prefer not to pursue the path toward a more open trade system for agriculture, or at least not be pushed in that direction by international pressure. Moreover, as always, negotiations will take place in the context of contemporary events. These events could overshadow and even derail the talks. The agenda already has been influenced by a number of issues that were not on the table during the Uruguay Round. There is no reason to believe that the agenda will stop shifting with the formal start of talks.

There are a few fixed points that give an indication as to the timing of the agricultural talks. Starting the talks does not mean that they will move fast or far without further incentives or deadlines. The WTO Agriculture Committee, meeting in negotiating mode, has sketched out a series of steps for the next few months. The aim is to receive position papers from all members by the end of this year, in time to allow a review of these positions in March 2001.

One of the few deadlines for the talks to end is the year 2003, when the Peace Clause expires. Thereafter, unless the Peace Clause is renewed, the general WTO rules governing subsidies and dumping will apply to agriculture. This will presumably give a useful boost to negotiations if they are not complete by that date. The promise to renew the Peace Clause may also be a useful incentive for countries such as the EU to continue reforms. But the impact of removal of the protection of the Peace Clause depends crucially on the effectiveness of the dispute settlement process. If countries lose their confidence in this aspect of the WTO, as the demonstrators on the streets of Seattle have clearly done, then the threat of action through panels is greatly diminished. This then could be the ultimate impact of Seattle.

Perhaps the main determinant of the timing and ambitiousness of the agricultural talks is the decision as to whether they should be a part of a large, multi-sector negotiation or whether they will be self-contained. Most commentators argue that a negotiation that only included agriculture would be difficult to conclude. However, in the wake of the Seattle debacle no agreement has yet been reached on the scope for the next round, and so it is uncertain what “package” will be possible.

Developing Countries and a New Round of WTO Negotiations
Thomas W. Hertel, Purdue University; Bernard M. Hoekman, World Bank and CEPR, and Will Martin, World Bank

Highlights:

- Many developing countries have expressed concern about the impacts of the Trade-Related Investment Measures (TRIMs) agreement and the prohibition on export subsidies on their ability to develop their industrial sectors.
- Resource constraints and the small size of many developing country markets impede their ability to identify and defend their interests in the WTO.

- There is considerable international agreement that core labor standards should be recognized and protected

- There is a clear need for international cooperation on a wide range of environmental issues, with preference given to the use of policy instruments targeted directly to the heart of environmental problems rather than through trade measures that typically address the problems only indirectly.
- There appears to be a good case for proceeding with a relatively narrow agenda for negotiations that addresses the concerns of developing countries with implementation of Uruguay Round agreements and emphasizes the expansion of market access that has been the core strength of the GATT/WTO process in the past.

For developing country policy makers, a key question is whether to support initiation of a new Round of WTO negotiations and, if so, what type of Round to support. Clearly, this need raises some difficult questions given the wide-ranging nature of the issues under discussion, their complexity, and the wide dispersion in the interests and capacities of developing economies. This paper reviews some of the key findings from the World Bank's project on developing countries and the WTO 2000 negotiations with a view to providing information that can help policy makers with their decisions on the Round.

In agriculture, we note that the average barriers imposed in both developed and developing countries tend to be relatively high. Economic analyses of reductions in these barriers suggest that the resulting gains to the world economy could be substantial, despite the relatively small share of agricultural products in world trade. A forty percent reduction in average protection levels has been estimated to increase world real income by around $60 billion per year. The largest absolute gains accrue to the developed countries that impose the highest rates of protection, but the largest gains as a share of income arise in developing countries. There are also some important implications for the modalities of negotiation. First, it seems unlikely that a simple, proportional cut in tariff bindings will be very effective—some combination of formula cuts seems likely to be much more effective. The presence of tariff rate quotas is also likely to be important because of the transfers associated with quota rents. It seems likely that some expansion of TRQs, as well as reduction in tariff bindings, will be needed if a consensus in favor or reform is to be achieved.

A key development since beginning of the Uruguay Round has been a dramatic increase in the importance of manufactures exports for developing countries. Since the early 1980, the share of manufactures in developing country merchandise exports has risen from around 30 percent to over 70 percent. Partly as a consequence, there has also been a sharp increase in the importance of trade between developing countries. The average tariff levied on developing country exports of manufactures to industrial countries (3.4 percent) is four times as high as that on exports originating in industrial countries (0.8 Percent). However, the average tariff levied on developing country exports to other developing countries is almost four times as high again (12.8 percent). Over 70 percent of the tariffs levied on developing country exports of manufactures are levied by other developing countries. Analyses suggest that developing countries would receive most of the benefits from inclusion of manufactures trade in negotiations. The gains to developing countries are particularly large because of improvements in market access, and because of the efficiency gains resulting from cuts in their own protection. Developing countries have a strong incentive to press for inclusion of industrial products, which are not included in the built-in agenda established in the Uruguay Round.

The potential benefits from liberalization of services trade are much more difficult to evaluate than those from merchandise trade because the barriers affecting trade in services are much more difficult to characterize and assess. However, trade in services is clearly important for developing countries.

While the OECD countries dominate global trade in services, developing countries dominate the list of countries most dependent on exports of services. Recent research suggests that the next Round of the General Agreement on Trade in Services (GATS) negotiations should focus on three issues: (i) expanding the scope of specific commitments, (ii) increasing transparency of prevailing policies, and (iii) improving multilateral disciplines. Expanding the coverage of commitments on national treatment and market access is particularly important for major developing countries, where only 15 percent of service sectors are currently covered. A desirable goal is to move towards complete coverage of services trade, with specific exceptions made where this is politically necessary. A formula approach to increasing coverage of service sector disciplines might be a useful step in this direction. Transparency in services trade could be greatly increased by a negative list approach that required all countries to spell out the barriers they impose on services trade. Multilateral disciplines could be improved in a number of ways, including a shift from focusing on specific sectors to a more general approach, and the introduction of more general principles to increase competition.

Many developing countries have expressed concern about the impacts of the Trade-Related Investment Measures (TRIMs) agreement and the prohibition on export subsidies on their ability to develop their industrial sectors. Generally, however, the instruments outlawed by these agreements are inefficient means of achieving policy goals, and WTO rules allow for instruments, such as production subsidies or taxes targeted to specific externalities, that are likely to be more effective. There could be potential payoffs from a wider agreement on investment, but these benefits would be difficult to realize, and most of the gains might be obtained through greater use of the provisions on establishment trade for services under the GATS agreement.

Resource constraints and the small size of many developing country markets impede their ability to identify and defend their interests in the WTO. In part because of this, there was a tendency for many agreements in areas such as intellectual property (TRIPS) and customs valuation to follow established practice in the industrial countries. Frequently, the resulting rules are ill-suited to conditions in developing countries, and dealing with these problems effectively requires complex and expensive capacity building. The expansion of the trade agenda to “behind the border” issues such as these has created a situation very different from that under the GATT, where trade liberalization typically had low or negative implementation costs.

There is considerable international agreement that core labor standards should be recognized and protected. However, it is far from clear that inclusion of such standards into the WTO would be helpful in achieving these objectives. More likely, their inclusion would worsen the problems to which they were addressed, by forcing workers into informal or illegal activities outside the export sector, and through protectionist capture in the industrial countries, by reducing the opportunities available to workers in developing countries. Attainment of core labor standards is much more likely to be achieved through policies targeted to these goals, such as policies that increase the access of poor children to education, and improvement of labor market policies.

There is a clear need for international cooperation on a wide range of environmental issues, with preference given to the use of policy instruments targeted directly to the heart of environmental problems, rather than through trade measures that typically address the problems only indirectly. As the number and effectiveness of international environmental agreements increases, better rules to handle interactions between environmental agreements and trade rules are likely to be needed.

There appears to be a good case for proceeding with a relatively narrow agenda for negotiations that addresses the concerns of developing countries with implementation of Uruguay Round agreements, and emphasizes the expansion of market access that has been the core strength of the GATT/WTO process in the past. Approaches need to be developed to ensure that future rules are written in a way

that will be consistent with the constraints and development needs of the poorer WTO members, and that assistance promised to these countries for implementing these agreements is actually delivered. A major need will be a strong focus on negotiations in areas that are clearly strongly trade related; for which the institution has, or can realistically develop, the necessary expertise; and where there are realistic prospects of reaching agreement.

Agricultural Trade Liberalization and the Environment: Issues and Policies
Wesley Nimon and Utpal Vasavada, USDA/ERS

Highlights:

- Many of the negotiating positions of developed countries were marketed in terms of their environmental benefits, and a few of the environmental NGO's positions were largely adopted by either the U.S. or EU.
- Although the Seattle Ministerial meeting failed to agree on objectives for a new round of negotiations, the built in agenda of the Uruguay Round Agreement on Agriculture allows WTO member countries to launch a new round of agricultural negotiations.
- Recent U.S. announcements regarding voluntary labeling of GMO free foods suggest that compromise may be possible, but substantial progress will likely require higher level meetings than those of the built-in agenda on agriculture.

While economists have long argued that a country serves its own self-interest by adopting free trade, recent attempts at further trade liberalization by the World Trade Organization (WTO) came under heavy criticism. Environmental, consumer, labor, and church groups formed a broad "civil society" coalition, which blamed trade liberalization for numerous maladies including domestic job losses, environmental damage, low wages, and child labor in less developed countries (LDC's). This paper focuses on the environmental impacts of trade liberalization and discusses the argument for free trade and the circumstances under which trade liberalization may induce adverse environmental outcomes. Environmental impacts are inherently an empirical question and may vary over time.

This paper briefly surveys the empirical evidence on the environmental impact of agricultural trade liberalization, which is found to vary significantly across pollutants, sectors, and countries. Since trade liberalization can, in some instances, degrade environmental quality, environmental NGO's have proposed specific WTO reforms to mitigate adverse environmental impacts. In fact, a subset of these demands was reflected in the negotiating positions adopted by some WTO member nations at the recent Seattle Ministerial meeting. To a large extent many of the negotiating positions of developed countries were marketed in terms of their environmental benefits and a few of the environmental NGO's positions were largely adopted by either the U.S. or EU. For instance, the U.S.'s positions on transparency and fishery subsidies, and the EU's positions on the precautionary principle and multi functionality closely resemble those of environmental NGO's. To some extent these arguments may be merely convenient political cover for policies of national interest, but at the very least environmental NGO's have influenced the terms of the debate, if not the debate itself.

Although the Seattle Ministerial meeting failed to agree on objectives for a new round of negotiations, the built in agenda of the Uruguay Round Agreement on Agriculture allows WTO member countries to launch a new round of agricultural negotiations. Environmental NGO's will likely continue to influence these negotiations.

Unresolved agri-environmental issues continue to divide WTO member nations and will likely slow

the pace of further agricultural trade liberalization. Recent U.S. announcements regarding voluntary labeling of GMO free foods suggest that compromise may be possible, but substantial progress will likely require higher level meetings than those of the built-in agenda on agriculture. The differences surrounding multi functionality, biotechnology, and animal welfare are agri-environmental issues that are likely resurface in future negotiations for some time.

OBSTACLES TO PROGRESS IN MULTILATERAL AGRICULTURAL TRADE NEGOTIATIONS

The European Viewpoint

David Blandford, Pennsylvania State University

Highlights:

- The first major obstacle to achieving progress in the future trade negotiations is the difficulty in reaching consensus among the EU Member states on changes to the Common Agricultural Policy (CAP) that would permit the EU to move to world price levels in all key commodity sectors and absorb new members, without placing major additional demands on the budget.
- The second obstacle is the difficulty of reconciling the EU's view of agriculture as a "multifunctional" activity, yielding various public goods in addition to food and fiber, with further trade liberalization
- Other concerns associated with agriculture, in particular food safety and animal welfare, are likely to complicate the trade negotiations for the EU. Public opinion surveys suggest that these two issues are at the forefront of public concern about the future of European agriculture and the CAP.

The European Union's (EU) attitude to international trade and trade negotiations has evolved substantially since the Uruguay Round negotiations were launched in 1986. While trade is still viewed as being secondary to the achievement of domestic objectives, there is greater willingness to take international implications into account in framing domestic agricultural policies. In some commodity sectors, most notably cereals, the EU has moved to a more market-oriented position through reductions in internal support prices. There is growing acceptance that such market orientation is necessary in order to avoid costly surpluses and the trade conflicts generated by subsidized exports.

Despite this, from a European perspective, there are two major obstacles to achieving progress in future trade negotiations. The first is the difficulty in reaching consensus among the Member states on changes to the Common Agricultural Policy (CAP) that would permit the EU to move to world price levels in all key commodity sectors and absorb new members, without placing major additional demands on the budget. Although changes made to the CAP as part of its Agenda 2000 initiative are supposed to prepare the EU for a further expansion of its membership, it seems unlikely that this will be achieved. Furthermore, Agenda 2000 provides very limited flexibility for achieving further liberalization of EU agricultural trade in the WTO negotiations.

Second, there is the difficulty of reconciling the Union's view of agriculture as a "multifunctional" activity, yielding various public goods in addition to food and fiber, with further trade liberalization. A major issue is how to ensure the desired supply of public goods without affecting the volume of production and trade. If internal EU prices are reduced in order to liberalize trade, the desired supply of environmental services, for example, can only be guaranteed if EU direct payments are linked to particular production practices. It would be difficult to argue that such payments would be minimally trade distorting, as required by the green box criteria. It is not clear that production objectives can be met through current blue box policies nor whether the other parties to the negotiations will be willing to accept an indefinite continuation of the blue box exemption for the Union's compensatory payments.

Other domestic concerns associated with agriculture, in particular food safety and animal welfare, are likely to complicate the trade negotiations for the European Union. Public opinion surveys suggest that these two issues are at the forefront of public concern about the future of European agriculture and

the CAP. The recent beef hormone dispute with the United States and controversy over the introduction of genetically modified organisms into the food chain show that consumer concerns about the food system are highly emotional and politically charged issues in Europe. Reaching an accommodation with other trading partners on how these issues are treated in international law will be very difficult.

There is a long way to go before we can find a resolution to the concerns that the European Union brings to the trade negotiations. This is partly due to the fact that the EU's thinking on objectives and the ways to achieve these is not sufficiently advanced. However, it will be necessary to deal with these issues if EU negotiators are to be able to conclude an agreement that will be acceptable to key domestic political constituencies.

Accommodating the Needs of Developing & Transition Countries
Don McClatchy, Agricultural & Trade Policy Consultant

Highlights:

- Developing and transitional country governments have a need to protect their farmers and consumers against external shocks particularly shocks arising from world market price instability.
- Many developing countries emerged from the Uruguay Round with bound tariffs quite high relative to applied tariffs.
- Clarification is needed about which types of variable tariff practices are to be allowed and which are not.
- As a 'special and differential' concession, developing and transition countries should be allowed to retain relatively high tariff bindings, thus providing a capacity for using variable tariffs as a safety net measure.

Although the WTO Agreement contained many provisions for 'special and differential' treatment of developing and less developed countries, it is now generally accepted that these countries have yet received few real benefits from the Uruguay Round. The hunt is on to find ways to better address the needs of these countries in the new Round; some suggest the credibility and viability of the WTO itself is at stake. Several suggestions already exist about what further might be done. This paper proposes an additional step which might be taken in the agricultural field.

Developing and transitional country governments have a need to protect their farmers (and, often, consumers) against external shocks, particularly shocks arising from world market price instability. Typically lacking fiscal resources, their only feasible approach to do this may be through the use of border measures to moderate the transmission of change in world price to the domestic market. With non-tariff barriers and export subsidies now effectively removed from the choice set for most, what remains are variable tariffs and variable export taxes (and, to a limited extent, export controls).

Many developing countries emerged from the Uruguay Round with bound tariffs quite high relative to applied tariffs. This gives them considerable 'room' to vary the applied tariff as a domestic price stabilizing measure and some have formal policies in place to do it. However, questions have been raised about the WTO-legality of such practices because the Agreement on Agriculture explicitly bans some types of variable tariffs ('variable import levies' and 'minimum import prices'). The reality is that such 'banned' schemes are still in operation in the EU and Japan, and some other existing forms of variable tariffs (e.g., 'seasonal' tariffs) have not been challenged, and appear to be widely acceptable.

It is concluded that clarification is needed about which types of variable tariff practices are to be

allowed and which are not. Rather than opposing developing countries' use of 'price band' schemes and lamenting their high levels of tariff bindings, the OECD group should recognize these countries needs, not exaggerate the costs to themselves, and endorse the practice. As a 'special and differential' concession, developing and transition countries should be allowed to retain relatively high tariff bindings, thus providing a capacity for using variable tariffs as a safety net measure. Conditions could be attached to ensure transparency, predictability, and a principally stabilizing (not permanently protective) tariff use. Any new disciplines on export taxes or controls should take into consideration the logical linkage and be made consistent with such a concession. As a profession, we should recognize the limitations of analyses based on a 'steady state' assumption on which, to date, we have relied so heavily.

U.S. Policy and Agricultural Progress in WTO Negotiations
Daniel A. Sumner, University of California, Davis

Highlights:

- Several U.S. domestic agricultural support policies may limit progress because they may limit how much the U.S. will pursue its stated objective to reduce trade barriers.
- Another set of trade policies that deserve discussion relate to indirect export subsidies that escaped discipline in the Uruguay Round.
- Trade barriers that protect U.S. sugar or peanut industries are obviously inconsistent with open borders. The current U.S. position is vague on how much reduction in trade barriers the U.S. favors and this vagueness may be a sop to powerful protectionist interests in sugar and other industries.
- Leading advocates of trade reform, especially in the Cairns group point to U.S. subsidy programs as problematic.
- The U.S. has targeted state trading enterprises (STEs) as a significant issue in this round. The U.S. listed its own CCC as an STE, and one may ask the degree to which the U.S. would be willing to accept WTO disciplines on the CCC.

Progress is like beauty. And, in the eye of this beholder, "progress" in trade negotiations means more open markets with fewer barriers and with trade conducted primarily on a commercial basis. Of course, that is not a universal view and, after Seattle it is not at all clear that the economic way of thinking on these issues has made much progress in capturing popular opinion in the last century or so.

Even economists do not generally claim optimality for completely open borders with no trade restrictions. For example, even many otherwise liberal economists allow for a government role in regulating trade that may spread harmful plant, animal or human pests and diseases or regulating trade when national defense risks are at stake. In this paper negotiating "progress" means movement towards more open agricultural markets with a few exceptions for just the sorts of cases listed. The paper does not cover war or national defense, but I do discuss food security and phytosanitary and sanitary regulations. The paper categorizes the various potential barriers to progress in the WTO negotiations in agriculture. Some of these are traditional. Some might be called "post-Seattle," because that event raised the general awareness of some of these issues.

Among the various issues the following seem potentially important:

(a) Nature of the WTO and the process of negotiation and agreement: For some the WTO and it s processes have become issues, but the negotiations are proceeding roughly as expected.
(b) Global anti-globalization sentiment: some popular sentiment is simply anti-economic growth

or anti-foreign, WTO negotiations are a natural focal point for these sentiments. So far these groups remain a distinct minority.

(c) General political situations or calendars in certain countries: In particular the U.S. Presidential and Congressional elections in 2000 certainly slows the ability of the U.S. to make strong commitments in the WTO negotiation and it also limits the willingness to table their own serious proposals. Similar calendars apply in other countries.

- Broader issues in international relations: In the past trade negotiations have been a part of overall foreign policy. This linkage is muted after the fall of communism, but it is still possible for trade concessions to be offered to gather support for non-trade initiatives.

(e) WTO positions and issues in nonagricultural areas: In the Uruguay Round, progress in agriculture was aided by gains that some countries, that were otherwise resisting opening agricultural markets, expected in non agricultural negotiations. The current round does not yet have such linkage and there is less left to gain in the non-agricultural goods markets.

(f) Agricultural market conditions: Extremely low global farm prices have four effects on the negotiations underway. First, low prices emphasize the urgency of removing barriers and allowing more trade to raise world prices. Second, anti-trade forces emphasize that the opening achieved in the Uruguay Round did not solve any fundamental problem and thus it is false to attempt to solve the problem with more market opening. Third, low prices have generated a new set of popular farm subsidies that may seem vulnerable to negotiations. Fourth, low market prices in global markets reinforce the concerns and resolve of those commodity interests in the U.S. and especially in other countries that do not want to be exposed to these sorts of market forces.

(g) Opening stated positions of parties: Some have argued the high visibility of the strong opening position of the United States blocked progress in the early years of the Uruguay Round. There are no such strong positions this time, but of course, that has not yielded an early harvest of progress.

(h) Historic or current agricultural policies of WTO members: One reason that GATT progress in agriculture was limited was that more open borders were inconsistent with the policies that countries had established to protect and support agricultural interests. This is the fundamental reason that progress has been slow for five decades.

Any country may choose unilateral free trade in agriculture. Most do not. Some policies are pursued as responses to policies of other countries that would be reversed in a multilateral reform, but many WTO members act as if opening agricultural markets is simply not in their national interest. It is hard to see what is likely to change that policy behavior in the short run. Countries such as Korea, Japan, Norway, and etc. have powerful agricultural interest groups that command sympathy from the rest of the population. These nations have generally defined progress in WTO negotiations as the exact opposite of the way I use the term here. The EU is at least partially in this camp. Canada is more mixed. The grains industry wants open markets and the dairy industry wants to keep Canada's market closed. The government claims to think having both is feasible.

The core of this paper investigates the extent to which U.S. farm policies may create barriers to progress in WTO negotiations toward more open agricultural trade. Although it is too early for formal positions, the United States continues to favor as much liberalization as possible, as quickly as other nations are willing (Barshefsky). One may question whether this position is consistent with existing U.S. farm policies.

Several U.S. policies may limit progress because they may limit how much the U.S. will actually push for its stated objective to reduce trade barriers. This conflict occurs across commodities. For example, trade barriers that protect U.S. sugar or peanut industries are obviously inconsistent with open borders. The current U.S. position is vague on how much reduction in trade barriers the U.S.

favors and this vagueness may be a sop to powerful protectionist interests in sugar and other industries.

A second set of policies that deserve discussion relate to indirect export subsidies that escaped discipline in the Uruguay Round. The U.S. has listed elimination of export subsidies as one of its goals for this round. But, at the same time the U.S. has maintained or expanded its use of government subsidies for foreign market promotion and for foreign market credit guarantees—two measures that have an export subsidy component. In addition, the U.S. use of food aid has at least some export subsidy character. It is not clear how far the U.S. is willing to go if its own policies are challenged as a part of the export subsidy problem. The U.S. position with respect to domestic support also has raised controversy. While urging reductions in trade linked farm subsidies, the U.S. has increased its outlays for farm subsidy by 400%. Leading advocates of trade reform, especially in the Cairns group point to U.S. subsidy programs as problematic. Finally, the U.S. has targeted state trading enterprises (STEs) as a significant issue in this round. The U.S. listed its own CCC as an STE, and one may ask the degree to which the U.S. would be willing to accept WTO disciplines on the CCC.

COMMODITY TRADE ISSUES

Trade Liberalization in Rice

Eric Wailes, University of Arkansas

Highlights:

- Expanded market access remains as one of the most important issues for rice trade, particularly in Japan and South Korea.
- Another issue likely to receive attention is the tariff distortion that discriminates among rice types, particularly in the degree of processing i.e. rough, brown and milled rice tariffs.
- Rice is on the verge of commercialization of transgenic rice varieties and related trade disputes are anticipated.
- Multifunctionality is likely to become an important issue for rice with respect to food security and the environment**.**

After five years of experience with WTO trade liberalization and with another round of negotiations on the horizon, this paper gives a brief review of what has been accomplished with respect to rice trade liberalization. It provides preliminary analysis of some current research that focuses on product differentiation in rice trade liberalization and finally closes with a discussion of issues and challenges for analysis in the next WTO negotiation round.

Rice accounts for more that 20 percent of global calories consumed, but rice trade as a percent of production is only 5% compared to wheat trade at 20%, coarse grains at 12%, and soybeans at 25%. Rice is characterized by a high degree of domestic and border protection, and geographic concentration with 90% of production and consumption in Asia, much of which is subject to volatile monsoon weather. Finally, there is substantial market segmentation by rice type and quality. The combination of high levels of domestic protection, concentrated weather effects, inelastic price response in production and end-use markets, and relatively thinly traded volumes results in relatively volatile prices and trade.

Trade liberalization is having a profound impact on the international rice market. The relatively modest terms of agreement in the Uruguay Round Agreement on Agriculture (URAA) have contributed to global rice trade growth. The URAA for the international rice markets has been implemented to reduce trade barriers by reducing import tariffs, increasing market access, reducing export subsidies and lowering domestic support.

The most significant impact of the URAA on rice has been the implementation of minimum access (MA) commitments for Japan and South Korea. Japanese imports, in particular, have stimulated resource adjustments in the rest of the world, such as, Australia, China and the United States. WTO discipline on the rice sectors in other countries has not had a substantial impact on world rice trade. Differential tariff rates by rice type are important to understanding the WTO impacts on rice trade.

Expanded market access remains as one of the most important issues for rice trade, particularly in Japan and South Korea. The WTO accession negotiations with China and Taiwan give considerable attention to market access. Another issue likely to receive attention is the tariff distortion that discriminates among rice types, particularly in the degree of processing i.e. rough, brown and milled rice tariffs. State trading is important in world rice trade and WTO discipline is needed to bring greater transparency to pricing of rice to determine if implicit export subsidies or tariffs are within the country's WTO commitment. Rice is on the verge of commercialization of transgenic rice varieties and related trade disputes are anticipated. Multi functionality is likely to become an important issue

for rice with respect to food security and the environment. However, rice production is resource intensive and on balance has many more negative environmental impacts than positive.

Major Issues for the U.S. Wheat Industry: Implications of China's Entry into the WTO
Won W. Koo, North Dakota State University

Highlights:

- A major concern for the U.S. wheat industry is the potential impact of China's entry into the WTO on the world and U.S. wheat industries.
- The trade liberalization policy of China would raise the world price of wheat about 2 to 5 percent and the U.S. domestic price about 3 to 6 percent.
- The total value of China's imports from the United States in 2005 is predicted to increase by $221 million to $842 million.

The Uruguay Round of GATT negotiations, which was effective in 1995, has affected trade flows of wheat from exporting countries to importing countries. In addition, recent financial crises in several Asian countries, including South Korea, Thailand, Indonesia, and Taiwan, also have affected the world wheat market. Import demand for wheat from those countries has been reduced substantially, resulting in depressed wheat prices in the world market.

The objective of this paper is to assess the outlook of U.S. and world wheat industries under the UR Agreement. Special attention is given to evaluate the impacts of China's WTO entry on trade flows of wheat from exporting countries to major importing countries and its implications for the U.S. wheat industry.

The major exporting countries use internal support programs and several export promotion policies, including export subsidies, credit arrangements, and long-term agreements, to protect or enhance their positions in the world market. On the other hand, most importing countries have been using various trade barriers to protect domestic agricultural sector. The UR Agreement restricted internal support and export subsidies, and also reduced trade barriers, but wheat trade is still far from a free trade.

Issues related to the U.S. wheat industry for the upcoming round of WTO agricultural trade negotiations include further reduction in internal supports and export subsidies, state trading enterprises, China's WTO entry, and agricultural biotechnology.

A major concern is what would be the impacts of China's entry into the WTO on the world and U.S. wheat industries. The United States and China signed the comprehensive bilateral trade agreement on November 15, 1999. Under this agreement, China is expected to adopt a TRQ in which import tariff is 1 percent for import quantity smaller than 7.3 million metric tons. The import quota will be raised to 9.5 million metric ton in 2005. Imports above the quota levels will face a higher duty of 76 percent. This tariff will be reduced to 65 percent by 2004.

The Global Wheat Policy Simulation Model, which is operational at the Northern Plains Trade Research Center, was used to analyze the impacts of China's trade liberalization policy on the U.S. wheat industry. The model differentiates wheat into common and durum wheat.

The trade liberalization policy would raise the world price of wheat about 2 to 5 percent and the U.S. domestic price about 3 to 6 percent. The trade liberalization policy would lower the Chinese domestic price of wheat. However, the lowered prices of wheat would not affect domestic consumption and production in China, mainly because Chinese producers and consumers are not very sensitive to

changes in wheat prices.

The total values of China's imports from the United States in 2005 are predicted to increase by $221 million to $842 million. However, net changes in U. S. export value would range from $127 million to $577 million in 2005 because of reductions in wheat exports to the rest of world.

New Agricultural Trade Negotiations: Issues for the U.S. Coarse Grain Market
Linwood Hoffman, USDA/ERS

Highlights:

- A lack of transparency in the pricing and operational activities of state trading enterprises (STEs) may lead to tighter disciplines since some have claimed that they can be used to avoid URAA commitments on market access, export subsidies, and domestic support.
- Some U.S. competitors might argue that export credit guarantees be treated as an export subsidy, even though the WTO does not classify them as export subsidies.
- China's accession to the WTO has positive trade implications for the U.S. coarse grain sector.
- Trade in biotech coarse grains has become an issue, especially with the EU.

Under the Uruguay Round Agreement on Agriculture (URAA), WTO member countries agreed to cut average tariff levels on all agricultural products, lower the volume of and expenditures on subsidized exports, and reduce aggregate spending on trade-distorting domestic support programs for agriculture. In addition, the Uruguay Round established a new process for settling trade disputes, and a new agreement was reached on the use of sanitary and phytosanitary (SPS) measures, which have been used to restrict trade based on health and safety concerns.

For the U.S. coarse grains sector, early estimates of longer-term effects of the URAA suggested that exports and prices would increase, primarily due to reduced export subsidies and improved market access. Although U.S. exports initially declined, mostly due to the Asian financial crisis and increases in China's exports, U.S. global market share for coarse grain exports grew from 55.9 percent in 1990-94 to 57.9 percent in 1995-99. Assuming no new WTO agreements in agriculture, global coarse grain import demand is anticipated to increase 2.3 percent annually between 1999 and 2009. This is a substantial improvement from the negative 1 percent annual average growth rate in the 1980s and 0.5 percent annual growth rate in the 1990s, but well below the 8.7 percent growth rate of the 1970s. World credit constraints and structural reform in the former Soviet Union and Eastern Europe and increased self sufficiency in the EU are some of the factors that caused a slowdown in coarse grain trade in the 1980s and 1990s.

In the new agricultural negotiations, issues important to the U.S. coarse grain industry include those remaining from the last round: increased market access and continued reduction in domestic support and export subsidies. Although generally less distorted than the food grain market, trade distortions continue to exist in the global coarse grain market. Many countries, particularly developing ones, still have high bound tariff rates, and many of the major importers have TRQs that continue to limit market access.

Market distortions are currently most significant in the barley sector. Import tariffs for barley are generally low, but are much higher for barley malt - a situation known as tariff rate escalation. In the coarse grains market, export subsidies are also used mostly for barley, with the EU accounting for the largest share. In addition, barley has received the most domestic support of all coarse grains, especially in the EU and Japan. The International Barley and Malt Coalition for Free Trade is calling

for a "zero for zero" trade agreement for barley and malt, which would eliminate all trade-distorting policies. Import tariffs are relatively low for corn, with many of the major importers maintaining an applied tariff or in-quota tariff of less than 12 percent. China's applied tariff for corn is over 100 percent, but this would change after accession to the WTO.

In addition to the issues remaining from the last round, other issues of importance to the sector are likely to emerge. A lack of transparency in the pricing and operational activities of state trading enterprises (STEs) may lead to tighter disciplines since some have claimed that they can be used to avoid URAA commitments on market access, export subsidies, and domestic support. Some U.S. competitors might argue that export credit guarantees be treated as an export subsidy, even though the WTO does not classify them as export subsidies. China's accession to the WTO has positive trade implications for the U.S. coarse grain sector. Trade in biotech coarse grains has become an issue, especially with the EU.

In addition to trade policies, income and corresponding per capita meat consumption are key factors in consumption and trade of coarse grains, especially within developing countries. About two-thirds of global coarse grain supplies are used as animal feed with the remainder used for seed, industrial, and food uses. Most of the coarse grains traded are used for feed. Feed use of coarse grains is more price-responsive than food or industrial uses. Approximately 10 to 11 percent of the world's coarse grain production is traded, down from the 15 percent traded during the record 1980/81 high. Corn is the major component of global coarse grain trade, accounting for 72 percent during 1997-99 crop years. Barley is second in size with 17 percent, sorghum 7 percent, oats 2 percent and rye 1 percent.

Because of increased economic growth, coarse grain trade during 2000-2009 is expected to increase to China, North Africa, Southeast Asia and Latin America. East Asian imports are expected to remain steady. The United States, EU, Argentina, China, Australia, and Canada have averaged slightly more than nine-tenths of global coarse grain exports during crop years 1997 through 1999. A more diverse group of countries -consisting of Japan, Mexico, South Korea, Saudi Arabia, Taiwan, Egypt, EU, United States, and China - claim an average of nearly two-thirds of global coarse grain imports.

The United States is the largest world exporter of corn and sorghum, but is a minor exporter of barley and ranks only fourth. More than seven-tenths of U.S. coarse grain export value goes to four countries, Japan, South Korea, Taiwan, and Mexico, but the remainder is widely dispersed among many countries. About one-fourth of U.S. coarse grain export value goes to projected growth markets which should put the U.S. in good position to compete for additional market share. Progress in the new round of agricultural negotiations should improve U.S. coarse grain export prospects.

The World Trade Organization and Southern Agriculture: The Cotton Perspective
Darren Hudson, Mississippi State University

Highlights:

- The URAA has likely accelerated the pace of the displacement of U.S. textile manufacturing that was already occurring.
- The primary displacement is occurring in labor-intensive goods and processes such as cutting, sewing, and assembly.
- Future WTO negotiations are not likely to have direct impacts on the U.S. cotton sector or global cotton production.

The implementation of the Uruguay Round Agreement on Agriculture (URAA) and the World Trade Organization has led to changes for agricultural commodities, many of which are relevant to the

Southern United States. Despite the impact on other commodities, cotton has not seen a major direct impact from the URAA and future negotiations are not likely to change that result. This is because most of the major cotton producing countries practice no or negative protection, thus the URAA has no real impact on domestic policies.

The impacts of the URAA on textile policy, however, does have an indirect impact on cotton. The URAA calls for the phase-out of the Multi-Fiber Arrangement (MFA), a set of bilateral trade agreements between textile producers and consumers limiting the flow of textiles, by 2000. The elimination of the MFA will likely increase textile production in developing countries that were previously limited on the volume of textile exports. This redirection in location of textile production will likely lead a change in the global flows of cotton. Thus, the phase-out of the MFA will likely enhance U.S. cotton exports, but will serve to displace some U.S. textile production through increased imports of finished goods.

This does not say, however, that the URAA has generated a displacement of U.S. textile manufacturing. Rather, the URAA has likely accelerated the pace of the displacement that was already occurring. The U.S. still maintains a competitive advantage is capital-intensive goods and processes such as spinning and weaving. The primary displacement is occurring in labor-intensive goods and processes such as cutting, sewing, and assembly.

Thus, future WTO negotiations are not likely to have direct impacts on the U.S. cotton sector or global cotton production. However, to the extent that future negotiations alter textile policy, it will have indirect impacts on global cotton trade flows.

International Trade in Dairy Products: Current Situation, Issues and Prospects
David Anderson, Texas A&M University; Hal Harris, Clemson University;
Joe Outlaw, Texas A&M University; and Mark Stephenson Cornell University

Highlights:

- The U.S. has not been a dominant player in world dairy product trade.
- The EU is a major stumbling block to freeing up world dairy trade.
- The road dairy trade negotiations will follow will be long and bumpy.
- It is uncertain where the road further trade liberalization will lead, except that Japan, the EU, and Canada are sure losers and New Zealand and Australia are sure winners.
- Low-cost production could be achieved on a wide scale in countries which have vast underutilized capacity, such as Argentina and Brazil.

The passage of NAFTA along with the formation of the WTO have prompted much interest in trade in dairy products. In a nutshell, even though the U.S. is the leading country in the world in cows milk production, it is a relatively minor player in world dairy markets. About 2-4 percent of domestic milk production is exported. Imports amount to a similar percentage in terms of volume, but are about double U.S. exports in terms of value. This is because a large proportion of imports consists of high valued specialty cheeses.

Despite the domination of the domestic market in the U.S. dairy industry, trade has been a hot topic of discussion among industry participants in recent years. Beyond general reasons brought about by the NAFTA and WTO negotiations, the reasons include: 1) lower levels of support prices, and recurring periods like the present, where dairy product prices hover around support; 2) slowing rate of increase in domestic per capita dairy product consumption; 3) brief periods when world NFDM prices rose to U.S. levels, with resulting surges in exports and U.S. milk prices; 4) incidents of success

by U.S. firms in selling differentiated products in Asia, Mexico and other countries; 5) major customers (McDonald's, Pizza Hut) have taken suppliers, including dairy processors, abroad with them, whether they wanted to go or not; and 6) the Dairy Export Incentive Program, which was fairly heavily used in the early 1990's to subsidize U.S. exports. DEIP exposed processors to the export market and was generally credited with a positive impact on milk prices and a reduction in taxpayer costs of the Dairy Price Support Program. DEIP has been dramatically scaled back because of export subsidy limits under the WTO agreement.

Competition and Trade in Fresh Fruits and Vegetables in the New Millennium

Timothy G. Taylor and Gary F. Fairchild, University of Florida

Highlights:

- Four of the most important factors influencing fresh fruit and vegetable trade are trade policy, the retail segment, technological innovation, and developments in information management and organization of supply chains.
- Trade policy may become less important than national policies in determining the extent and structure of trade in the future, as borders blur with increased globalization of supply chains.
- Perhaps the most profound impact on trade and competition will be created by changes in information technology as supply chains evolve to minimize the cost of information flow and its management.

Trade in fresh fruits and vegetables has exhibited a generally increasing trend over the past 30 years. When viewed against major trade agreements, trade liberalization has served to accelerate growth in trade, rather than cause significant departures from previous trade patterns. Fresh fruits and vegetables are largely unaffected by domestic agricultural policy and were placed on the "import sensitive" list which slowed the rate of tariff reductions. There has been significant growth in trade among NAFTA partners. The EU and Asia-Pacific regions are becoming increasingly important export markets, especially for fresh fruits. While the WTO has had some impact, unilateral country actions and the increased presence of multinationals have also influenced trade. There is some proliferation in the regions to which the U.S. is exporting, as well as diversification of countries supplying the U.S. Trade patterns also demonstrate the continued role of perishability and suggest the geographic distribution of trade is highly correlated with the degree of perishability.

Four of the most important factors influencing fresh fruit and vegetable trade are trade policy, the retail segment, technological innovation, and developments in information management and organization of supply chains. While the past 15 years have witnessed significant trade policy impacts on trade, further refinement in SPS regulations, food safety, and market access will continue to affect trade flows. However, trade policy may become less important than national policies in determining the extent and structure of trade in the future, as borders blur with increased globalization of supply chains. The retail food sector has become increasingly concentrated and the wholesale sector has declined dramatically as long-term retailer/grower-shipper contracts have increased. The retail sector's desire for a continual supply of a large array of products is stimulating global strategic alliances. Increasing incomes relative to fresh produce prices have

increased the demand for high quality and convenience.

The potential is great for biotechnology to decrease economic constraints imposed by perishability, although consumer acceptance of genetically modified products remains uncertain. Innovation in post-harvest handling and transportation have improved significantly, increasing the geographic scope of trade. Increased consumption and trade of greenhouse products suggests that capital-intensive production systems may become more important. Perhaps the most profound impact on trade and competition will be created by changes in information technology. Supply chains evolve to minimize the cost of information flow and its management, thus transaction costs along the supply chain have been altered by access to real-time information at very low cost. Examples include the decline of traditional wholesale distribution channels and the increase in vertical and horizontal strategic alliances in the fresh fruit and vegetable sub-sector.

MULTILATERAL TRADE NEGOTIATIONS: ISSUES AND CONCERNS

The Impacts of Export Subsidy Reduction Commitments in the Agreement on Agriculture on International Trade: A General Assessment

Lilian Ruiz and Harry de Gorter, Cornell University

Highlights:

- A key policy issue is whether the formula for further cuts in export subsidies should focus on volumes or expenditures.
- For the current reduction commitments, value will never be binding. The percent reductions in volume versus value will have to occur within specific ranges for value commitments to be binding.
- For a larger initial per-unit export subsidy, volume reduction commitments are more effective, and for larger initial quantities exported value reductions are more likely to bind.

Limits and reductions on both export volumes subsidized and value of export subsidies in agriculture is deemed as one of the more important accomplishments in the Uruguay Round. This paper assesses the extent to which export subsidy commitments have been effective. We isolate the factors affecting export subsidy expenditures in the intervening years since the Agreement was signed. For example, the choice of base period and world market developments may be contributing to subsidy reductions rather than genuine efforts by governments to reduce price supports that determine export subsidy levels. In addition, aggregation across products and time (through 'banking' and 'front loading') has allowed countries to circumvent specific commitments, thereby negating subsidy limits.

A key policy issue is whether the formula for further cuts in export subsidies should focus on volumes or expenditures. In this regard, we analyze the factors affecting the effectiveness of volume versus value commitments, and they include the level of world prices and internal price supports, elasticities of excess supply and demand, and how the free trade equilibrium changes over time with shifts in excess supply and demand.

For the current reduction commitments, value will never be binding. The percent reductions in volume versus value will have to occur within specific ranges for value commitments to be binding. More specifically, we determine that the ratio of value over volume reduction commitments has to be smaller than the ratio of the initial and reduced per unit export subsidy. This relationship allows us to predict the effects of bindings on the reduction of per-unit subsidies for a given set of market conditions. Therefore, a country can analyze the final per-unit export subsidy resulting from the proposed volume and value reductions for each commodity sector. When reductions are negotiated this will determine the reduction in exports for given supply and demand conditions.

For a larger initial per-unit export subsidy volume reduction commitments are more effective, and for larger initial quantities exported value reductions are more likely to bind. This means that with more price responsive trade curves, value reduction commitments become more effective.

Multilateral Agricultural Liberalization Beyond Uruguay: U.S. Options and Interests

John Gilbert and Tom Wahl, Washington State University

Highlights:

- Estimated global economic gains from agricultural tariff reform are estimated at $75 billion per year, compared to $16 billion for domestic support reform and $2 billion for export subsidy reform, suggesting that the WTO should be concentrating its efforts on market access.

- If China enters the WTO, research indicates global economic gains of $45 billion, of which $33 billion accrue to China and $1.2 billion to the U.S.
- Agricultural reform in the Pacific-5 arrangement (U.S., Australia, New Zealand, Chile, and Singapore) provides limited benefit to most Pacific-5 members, with the exception of $6 billion in economic gains for the U.S.
- Economic welfare gains are available to APEC members from implementing the APEC Food System proposal, including $1.5 billion to the U.S.
- Non-members of these regional groups, such as China and Japan for the Pacific-5 and the EU for both the Pacific-5 and APEC, would experience economic welfare loss should either of the two proposals be implemented.

Under the Uruguay Round agreement the rules governing international trade in agricultural products changed fundamentally. Members of the WTO agreed to a process of tariffication of non-tariff agricultural barriers (NTBs), to bind those tariffs, and to subject them to reductions. They also agreed to institute disciplines and reduction commitments on export subsidies and other domestic support mechanisms. Significant progress has therefore been made towards subjecting agriculture to the same disciplines as trade in manufactures. On the other hand, tariffication and flexibility in implementing the tariff reduction formula has led to increased dispersion and in some cases to highly distorting 'mega-tariffs'. Concern also remains over issues such as tariff escalation.

A range of issues therefore remain to be addressed in the new negotiations. This paper aims to assist in identifying negotiating options for the United States by providing quantitative estimates of the impact of multilateral reform under the WTO, and of alternative possible liberalization arrangements. The regional and commodity group aggregations are chosen to emphasize agricultural commodities and the interests of the East Asian developing countries.

The effects over time of alternative multilateral agricultural liberalization scenarios are simulated, including alternative multilateral reform scenarios under the WTO, the effect of agricultural reform and WTO entry by China, and reform under the auspices of the APEC Open Food System. Simulation allows for the growth pattern in China and other developing countries to be modeled over time, taking into account their expected patterns of growth, and allowing for feedback effects between the accumulation of capital and the year-to-year behavior of the economy as agricultural trade is liberalized.

The results of the simulations highlight the necessity of domestic reform in the U.S. China's entry to the WTO raises U.S. welfare, but only if permanent normal trade relations are secured. Finally, we consider two of the United State's regional alternatives: while a trade agreement within APEC has potential to raise U.S. welfare, such an agreement within the Pacific-5 group is of minimal significance.

Preparing for Trade Liberalization: Alternative Sugar Policies for the United States
David Orden, Virginia Polytechnic Institute and State University

Highlights:

- A combination of cash payment to sugar farmers with less market intervention may not appeal to entrenched ideological critics of the current policies, but it promises to achieve many of the objectives being sought: particularly lower prices and hence less distortions.
- A cash out is a less punitive policy prescription than calls for sugar program termination. It would enable sugar markets to operate with less border intervention, consistent with progress toward freer trade in agriculture that is clearly in America’s interest.

In this paper, I argue that the time is imminent to apply a "cash-out" approach to U.S. sugar policy. Even among U.S. farm programs, the price support and quantitative import restrictions that have been the hallmarks of sugar policy are an anachronism. Many crops and livestock products receive little direct subsidization, and for most of the crops that have traditionally been supported, a long adjustment process has occurred that has shifted policy away from high price levels and supply controls, towards replacing these market-intrusive instruments with direct payments to farmers. This cash out of past farm market interventions has proven far better than no reform at all for most of the field crops.

In the political arena, attempts to end the sugar program have been Quixotic. Tightly organized cane and beet producers and processors have continuously outmaneuvered coalitions of sugar program opponents. To seek a cash out of the sugar program instead of an abrupt program termination would be a bold new strategy for those seeking market-oriented reforms. A combination of cash payment to sugar farmers with less market intervention may not appeal to entrenched ideological critics of the current policies, but it promises to achieve many of the objectives being sought: particularly lower prices and hence less distortions. A cash out is a less punitive policy prescription than calls for sugar program termination. It would enable sugar markets to operate with less border intervention, consistent with progress toward freer trade in agriculture that is clearly in America's interest.

Agricultural Trade in the New Millennium: A Survey of Agricultural Economists
Hal Harris, Gary Wells, Clemson University, and C. Parr Rosson III, Texas A&M

Highlights:

- 45 agricultural economist working in international trade judged three non-tariff barrier issues to be very important negotiation topics—resistance to genetic modification (GM), export subsidies, and the scientific basis of sanitary and phytosanitary trade restrictions.
- Future WTO trade negotiations and reducing levels of protectionism ranked in importance just behind GM, but in both cases respondents estimated the impact would be decidedly positive.
- Policy issues such as Congressional trade negotiation oversight, excluding U.S. agriculture from foreign sanctions, and investigation of the harm caused by specific imports also ranked lower. When compared to an earlier survey of agribusiness leaders.
- The assessments by the two groups differ in several points. For example, extension educators placed more importance on the entrance of new members into the WTO than did Agricultural leaders, while agribusiness placed more importance on formal investigations of possible harm from specific imports and the exclusion of U.S. agriculture from trade sanctions than did extension educators.

A web-based survey assessed international trade issues that experienced agricultural economists judge important for U.S. agriculture during the first years of the new century. Using a 5-point scale ranging from "not at all important" to "very important," respondents addressed the topics described below. Additionally, participants were asked to provide the two most significant factors that will impact U.S. agriculture during the first years of the century. The response rate for the anonymous survey was 53.6 percent (of 84 survey requests).

Participants judged three non-tariff barrier issues to be very important negotiation topics—resistance to genetic modification (GM), export subsidies, and the scientific basis of sanitary and phytosanitary trade restrictions. Market access, tariffs, trade distorting agricultural programs, dumping, and the environment were rated as important. Labor issues and general food safety beyond those already mentioned were rated as neutral.

Respondents judged the importance for U.S. agribusiness (input, farm, and post-farm gate sectors) of selected items along with a judgment whether the impact on net revenue will be positive or negative. GM was again ranked as most important, but respondents had difficulty determining if GM would have a positive or negative impact. Future WTO trade negotiations and reducing levels of protectionism ranked in importance just behind GM, but in both cases respondents estimated the impact would be decidedly positive. The EU, food safety, and environmental issues ranked next with each predicted to have a negative impact on net revenues. The changing structure of agriculture, the Uruguay Round, and NAFTA were rated as important with a positive impact on net revenue. Food security/food terrorism was rated less than important, but any anticipated impact was expected to be negative.

Respondents felt that multilateral trade agreement topics deserved the most attention in teaching, research, and/or extension programs. Topics included the WTO, NAFTA-related trade problems, the Free Trade Area of the Americas, and "fast track" negotiating authority (tied with investigation of federal support to open foreign markets). Lower ranked were single-issue items such as the EU-U.S. growth hormone and banana disputes, the Asian financial crisis, and lifting sanctions on Cuba. Policy issues such as Congressional trade negotiation oversight, excluding U.S. agriculture from foreign sanctions, and investigation of the harm caused by specific imports also ranked lower.

In an open-ended question, 62 percent of the responses related to factors influencing international trade and technological change (e.g., GM). Supply/demand factors were listed 18 percent of the time, policy issues 12 percent and other issues (including the environment) 8 percent of the time.
In an earlier survey, farm and agribusiness leaders were asked to assess the need for educational programs in the same areas listed in this survey. To compare the results from the two surveys responses by Agricultural economists with an extension appointment were broken out separately. The assessments by the two groups differ in several points. For example, extension educators placed more importance on the entrance of new members into the WTO than did Agricultural leaders, and agribusiness placed more importance on formal investigations of possible harm from specific imports and the exclusion of U.S. agriculture from trade sanctions than did extension educators. Agribusiness leaders identified U.S.-Mexico trade problems, the Free Trade Area of the Americas, and federal support to open markets as their major agricultural trade issues. Extension personnel agreed on the first two but not on the third. Both groups also agreed on the importance of fast track negotiation and U.S.-Canada agricultural trade problems.

FOREIGN DIRECT INVESTMENT AND REGIONAL TRADE AGREEMENTS

Assessment of Trade and Foreign Direct Investment on U.S. Competitiveness in Asian Food Markets

Mary A. Marchant and Sayed H. Saghaian, University of Kentucky

Highlights:

- Results indicate that there exists a strong complementary relationship between U.S. exports and foreign direct investment (FDI) in processed foods into China exists.
- The appropriate strategy to access Chinese processed foods markets is to encourage overall business activity, i.e., both FDI and exports into China.

Trade and foreign direct investment (FDI) are the principal strategies for firms to access foreign markets. As the world becomes increasingly interdependent through international trade and investment flows, the linkages between these two strategies become increasingly important. Processed foods are the fastest growing market for U.S. agricultural exports and Asian markets are where exports have grown fastest. Additionally, foreign affiliate sales have grown faster than exports (USDA-ERS, 1997). A key question regarding competitiveness is whether exports and FDI are complements or substitutes, i.e., does FDI displace or enhance exports? The overall objective of this research is to estimate the relationship between U.S. FDI and exports for processed food products into China, to determine whether they are substitutes or complements, and to identify strategies to enhance competitiveness.

As described by Henderson, Handy, and Neff (1996), international trade in processed foods has been the most rapidly growing portion of world food and agricultural trade during the past decade. Processed food's share of global agricultural trade rose from 58 percent in 1972 to 67 percent in 1993, making up two-thirds of the $381 billion global trade in agricultural products and commodities. These global trends mirror developments in U.S. trade, where U.S. exports of semi-processed and processed foods (which are also referred to as high value products) now outpace bulk commodity exports (USDA-ERS, 1997). Historically, bulk commodities accounted for the majority of U.S. agricultural exports. In 1991, U.S. high value products surpassed bulk goods in export value. USDA (1997) identifies this export growth in processed products stemming from a response to growing demand in East Asia and North America, where incomes are increasing, diets are diversifying, and, in the case of some East Asian markets, production capacity is very constrained. Additionally, USDA trade forecasts indicate that "the composition of trade will continue to shift toward high value products. HVP exports are expected to increase about 6 percent a year between 1996 and 2005, while bulk commodity exports are expected to increase slightly more than 3 percent a year" (USDA-ERS, 1997). Thus, high value processed food products are the growth market for U.S. exports.

Results indicate that there exists a strong complementary relationship between U.S. exports and FDI of processed foods into China. This result is consistent with the trade literature for developing countries. Therefore, the appropriate strategy to access Chinese processed foods markets is to encourage overall business activity, i.e., both FDI and exports into China.

Regional Versus Multilateral Trade Arrangements: Which Way Should the Western Hemisphere Go on Trade?

Karen M. Huff, University of Guelph and James Rude, University of Saskatchewan

Highlights:

- Formation of the FTAA results in a high degree of trade diversion from efficient agri-food producers outside the Western Hemisphere to less efficient sources within the region.
- Economic welfare in the Western Hemisphere rises by $9.2 billion as a result of the FTAA, while the remaining regions outside the FTAA experience a combined welfare loss of $6.7 billion.
- When the FTAA is simulated along with a new multilateral trade round, these effects are mitigated.

Although recent discussion on international trade reform has focused on a potential new round of multilateral trade negotiations, Western Hemisphere trade ministers are pursuing their own regional trade agenda through the Free Trade Area of the Americas (FTAA). Given last year's setback at the third WTO Ministerial meeting in Seattle, the anticipated synergy between these two negotiating processes is now uncertain.

Formation of the FTAA results in a high degree of trade diversion from efficient agri-food producers outside the Western Hemisphere to less efficient sources within the region. Some trade creation also occurs as a result of the preferential regional trade agreement (RTA), particularly in the non-agriculture sectors. Economic welfare in the Western Hemisphere rises by $9.2 billion as a result of the FTAA, while the remaining regions outside the FTAA experience a combined welfare loss of $6.7 billion. This loss can be attributed to both a deterioration in terms of trade, declining export prices relative to import prices, and the negative distortion efficiency effects associated with the trade and domestic protection measures in place in the area. When the FTAA is simulated along with a new multilateral trade round, these effects are mitigated somewhat. The inclusion of a new multilateral trade round with the formation of the FTAA results in a slightly lower overall welfare gain in the Western Hemisphere of $8.9 billion. However, under the scenario the regions outside the FTAA experience a combined welfare gain of $12.4 billion. Improved terms of trade and efficiency gains arising from the liberalization of policies both contribute to this positive outcome for the regions outside the Western Hemisphere.

Regionalism and Trade Creation: The Case of NAFTA

Dragan Miljkovic, Southwest Missouri State University, and Rodney Paul, Montana State University

Highlights:

- Analyses indicate that as a result of NAFTA, there was no statistically significant breaks or increases in trade in the following three cases: U.S. agricultural imports from Mexico and Canada and U.S. agricultural exports to Mexico.
- Any concern of import competition that agricultural producers might have had in North America due to NAFTA or CUSTA is only partially justified.
- The potential benefits to agricultural producers in Mexico and Canada via trade creation were never realized.

CUSTA was expected to create new trade between the United States and Canada, while NAFTA was expected to create more trade between the United States and Canada and Mexico. The issue arose not about the increased trade among member countries but rather about welfare implications of that increase. Agriculture was one of the sectors in which there was considerable concern about potential effects of these agreements on domestic producers and consumers. No paper to date, however, answered the question, " has new trade in agricultural products been created at all?" We define trade creation in agricultural products as a statistically significant positive break in the trend function of the growth in exports and imports between member countries. We determine the time of break, providing

one exists, in the post second oil-shock growth trend of real exports and imports between CUSTA and NAFTA member countries for the years 1980 through 1999, and document the scale of the phenomenon. We further discuss why there is or there is no trade creation in agricultural commodities caused by signing of CUSTA or NAFTA in light of trade theory and policy and political economy arguments.

Our results clearly indicate that there was no statistically significant break and increase in trade in the remaining three cases tested, i.e., U.S. agricultural imports from Mexico and Canada and U.S. agricultural exports to Mexico. Any concern that agricultural producers might have had in North America due to NAFTA or CUSTA is only partially justified. U.S. agricultural producers are well protected from potential adversity caused by imports surges from Mexico via a number of side agreements, while they benefitted directly from the expanded exports to Canada. On the other hand, potential benefits to agricultural producers in Mexico and Canada via trade creation were never realized.

MULTILATERAL TRADE AGREEMENTS: REGIONAL IMPACTS

Trade Liberalization and Export Diversification in Trinidad and Tobago

Glenn Ames and Lewell Gunter, University of Georgia

Highlights:

- The largest impact on T&T's economy in the last two decades has been the wide variation in earnings from its natural resource based exports, petroleum and natural gas.
- Cement, steel, ammonia, urea, methanol and other value added products utilizing natural gas have become important export products.

Trinidad and Tobago (T&T) is one of the most developed countries in the Caribbean Basin. After a long recession in the 1980s and application of a structural adjustment program in the 1990s, Trinidad is liberalizing its trade regime through the removal of tariff and non-tariff barriers and expanding its participation in a number of preferential trading agreements.

The largest impact on T&T's economy in the last two decades has been the wide variation in earnings from its natural resource based exports, petroleum and natural gas. Oil, natural gas, and petrochemicals account for over 20 percent of GDP and 73 percent of foreign exchange earnings. In the 1990s, the government has initiated export diversification programs. In addition to fuel and petrochemicals, cement, steel, ammonia, urea, methanol and other value added products utilizing natural gas have become important export products.

The objectives of this study are to describe the structure of the Trinidad and Tobago economy and T&T policy initiatives to reduce import barriers and increase export diversification, and to analyze impacts of import tariff elimination and export price changes on the economy.

Future Mexican Beef Production and U.S./Mexican Beef and Cattle Production

Derrell S. Peel and Lisa D. Hayes, Oklahoma State University

Highlights:

- Current beef demand in Mexico is predominantly for low quality beef, met primarily by domestic production.
- Recent beef demand growth in Mexico and current resource constraints will preclude significant increases in production within the Mexican system.
- Given the current preferences in Mexico, increases in Mexican beef demand suggest increased high quality meat exports from the U.S. to Mexico, decreased feeder cattle exports to the U.S. from Mexico and an overall decrease in beef cow inventories in Mexico.
- If Mexico decides to substitute domestically produced high quality beef for low quality beef, this would lead to greater beef cow inventories in Mexico, more Mexican feedlot production, increased feeder cattle exports to the U.S., and lower exports of high quality beef from the U.S.

The baseline model captures the current situation in terms of resource availability, institutional constraints, and technical productivity. The benchmark solution highlights the fact that current beef demand in Mexico is predominantly for low quality beef, met primarily by domestic production and that recent demand growth and current resource constraints will preclude significant increases in production within the current practices.

Recent Developments in Agricultural Trade of the Newly independent States of the former Soviet Union

Jim Longmire, University of Southern Queensland, Erika Meng, and Prabhu Pingali, CGIAR

Highlights:

- The change to a market-oriented and commercially-driven agriculture in the former Soviet Union has fundamentally altered the incentives faced by livestock and cereal farmers in this region.
- There is considerable potential for productivity improvements and adoption of new technologies in the cropping and livestock sectors.
- The change to a much lower input intensive form of agriculture in Former Soviet countries implies that intensive livestock production levels are likely to remain well below the levels achieved during Soviet times.
- The amount of grain and other concentrate feed going to feed has declined dramatically and is likely to remain well below feed use during the Soviet era.
- For cereals, production in Former Soviet countries is likely to remain below levels achieved during the Soviet era, although considerable recovery is expected from the low level of production in recent years.
- A fundamental change of thinking and approach to the situation faced by farmers in Former Soviet countries is required in research, extension, training and education.

Economic incentives in Former Soviet countries have been radically reshaped since the Soviet era ended in 1991. In the early stages of transition most economies and agricultural sectors of the Former Soviet Union declined by between 30-50 percent. Economic recovery since the early shock resumed generally in the mid 1990s, although Russia's economy faced another shock during 1998. There have been major shifts in the patterns of production and trade in agricultural products since the end of the Soviet era. For example, livestock production in Former Soviet countries declined by more than 50 percent between 1990 and 1999, while grain production declined by around 40 percent. As well net grain imports of the Former Soviet bloc have declined from just over 40 million tons in 1991 to near zero in 1999.

These changes are reviewed in aggregate and from the perspective of the livestock producer and cereal grower in selected parts of the Former Soviet Union. The change to a market-oriented and commercially-driven agriculture has altered fundamentally the incentives faced by livestock and cereal farmers in this region. The changed economic incentives faced by farmers in Former Soviet countries are reviewed and conceptualised using production economics at the enterprise level. Farmers have reduced use of inputs sharply because of the need to pay market prices for feed, fertilizer, fuel and so on. They have severely curtailed investment in machinery and in their farms also. There is considerable potential for productivity improvements and adoption of new technologies in the cropping and livestock sectors. However, farmers are likely to resume investment only slowly and are likely to adopt only those changes that are low cost to them and involving low-input methods of production. Assessed under 1998 conditions, these methods of wheat growing are about 20 percent more competitive than the energy and input-intensive technologies of the Soviet era.

Because of commercial pressures, the production methods of that era are no longer relevant to farmers in the Former Soviet countries. The fundamental changes faced by livestock and cereal farmers have major implications for international trade in cereals and livestock products. The change to a much less-input intensive form of agriculture in Former Soviet countries implies that intensive livestock

production levels are likely to remain well below the levels achieved during Soviet times. The amount of grain and other concentrate feed going to feed has declined dramatically and is likely to remain well below feed use during the Soviet era. For cereals, production in Former Soviet countries is likely to remain below levels achieved during the Soviet era, although considerable recovery is expected from the low level of production in recent years. A fundamental change of thinking and approach to the situation faced by farmers in Former Soviet countries is required in research, extension, training and education. The new circumstances of agriculture in these countries have major implications for trade and competitiveness in cereals and livestock products. The Former Soviet Union has radically shifted its agricultural trade position and has the potential to move into some key commodity markets as a net exporter.

Increased Use of Antidumping Weakens Global Trade Liberalization
Anita Regmi, USDA/ERS

Highlights:

- Many economists question both the efficacy of implementing antidumping (AD) duties and whether economic realities of a firm can allow long-term dumping to be undertaken.
- The current method of computing 'fair' value poses special problems for agricultural products which experience wider and more frequent price variations, especially among perishable products.
- Injury estimation ignores the benefits accruing to consumers and importing companies, and therefore, discounts the overall national economic gains.

This paper discusses the WTO antidumping (AD) rule, its use by countries and the implications for global agricultural trade. While antidumping was initially used by only a few industrialized countries, AD use has grown significantly since the 1980s, with many developing countries following the example set by developed countries. Globally, the number of countries using AD tripled between 1987 and 1997 from 7 to 22 with developing countries accounting for about half of the AD cases initiated in 1997, compared with only 16 percent a decade earlier. Data suggests that as economies evolve from a controlled to a more liberal trade regime, particularly those implementing unilateral reforms, the use of antidumping as a border measure rises.

With increased use by developing countries, AD investigations on agricultural products are especially in danger of experiencing escalations. This is partly due to the fact that developing economies rely to a greater extent on agriculture than industrial economies do, and also due to the current mechanism used in determining AD investigations. Antidumping duties can be imposed on a product if two conditions are satisfied. First, price comparison between the imported price and the 'fair' value of a product must establish dumping, and secondly, it must also be determined that the dumping injures a domestic industry.

Remedial trade measures such as AD are said to have been created to protect domestic industries from predatory pricing by foreign firms. However, many economists question both the efficacy of implementing AD duties and whether economic realities of a firm can allow long-term dumping to be undertaken. The main problems associated with the current WTO AD provisions arise due to the mechanism by which the 'fair' value of a product is determined. WTO disciplines allow the use of a constructed value which incorporates adjustments for transportation, overhead, labor costs, and 'normal' profits when actual data are not available. This does not reflect a common business practice of pricing below the average total cost in the short run during periods of market downturn. The current method of computing 'fair' value poses special problems for agricultural products which experience wider and more frequent price variations, especially among perishable products. Given the length of

time required to produce, the supply of many agricultural products in the short run is fixed and producers cannot adjust their outputs to price changes. Therefore, economic realities and not predatory pricing lead many farmers to sell below cost of production.

Similarly, injury determination in an AD investigation is based only on economic injury to the industry, often determined by whether there is actual or potential decline in output, sales, profits, market share, productivity, return on investments, or utilization capacity. Injury estimation ignores the benefits accruing to consumers and importing companies, and therefore, discounts the overall national economic gains.

TRADE WITH CHINA

The Potential Impact of U.S.-China Trade Agreement on U.S. Pork Exports to China

William Amponsah and Xiang Dong Qin, North Carolina A&T State University

Highlights:

- According to WTO regulations, the favorable conditions that China agrees to provide the U.S. pork industry will be extended to pork industries of China's other trading partners, including EU and Canada.
- The new U.S.-China Trade Agreement will help the U.S. to obtain the much-needed concession from the Chinese to open its pork market.
- By year 2010, pork production in China is expected to reach 54 million metric tons while its demand will be around 48 million metric tons.
- The Chinese preference for pork and pork products is highly complementary to that of the U.S.; therefore, the potential for growth of U.S. pork exports to China will be dependent upon how successfully the U.S. will penetrate the pork variety meats market in China.

Accessing global markets is always an important priority for the U.S. pork industry. In 1997, over 6 percent of all U.S. pork production or 474,000 metric tons in carcass weight were for export markets. The U.S. pork industry has been benefitting significantly from the Uruguay Round of GATT agreement, which was implemented on July 1, 1995. But the efficient U.S. pork producers are precluded from exporting significant volumes of pork to China, the world's largest pork market. Up to now, the Chinese have adopted a system of tariffs as high as 43 percent, restrictive import licensing and distribution practices, and complicated and arbitrary sanitary and phytosanitary requirements, virtually shutting its door to the U.S. pork exports.

The recently concluded U.S.-China Trade Agreement has overcome a major hurdle for U.S. pork producers to enter the fast expanding Chinese market. Under the terms of the pact, which requires U.S. support of China's entry into the World Trade Organization (WTO), China will accept pork from any Food Safety and Inspection Service (FSIS) approved packing plant in the U.S., phase out its restrictive import and distribution procedures, and lower tariffs. John McNutt, the President of the National Pork Producers Council (NPPC) hails the U.S.-China trade agreement as "(potentially) the single greatest export opportunity for American pork producers."

The objective of our paper is two-fold. First, we will elaborate the details of the U.S.-China trade agreement, which are relevant to U.S. pork exports. Second, we will conduct qualitative and quantitative analysis to highlight the fundamentals in both U.S. and Chinese pork industries and pork markets. The competitiveness of U.S. pork exports to Chinese market lies in the low cost U.S. feed grains and the scale-effects of its pork production. Other factors that affect U.S. pork exports to China include changing population and disposable personal incomes in China. Special attention will be given to the ongoing Chinese economic reforms and the potential effects that they will have on the Chinese pork industry and U.S.-China pork trade.

According to WTO regulations, the favorable conditions that China agrees to provide the U.S. pork industry will be extended to pork industries of China's other trading partners, including EU and Canada. To stay competitive and take a bigger share in the Chinese market, the U.S. pork industry must take new initiatives.

China's Supply/Demand Balance and Forecast Trade Potential in Meats

Yanhong Chen, C. Parr Rosson, III, and Flynn Adcock , Texas A&M University

Highlights:

- China is forecast to become a large net importer of beef, poultry, and fish.
- China's beef consumption will exceed beef production by from 59,000 tons in 2000, growing to 2,682,000 tons in year 2010.
- China's fish consumption will exceed production, increasing from 1,556,000 tons to 3,641,000 tons.
- Poultry consumption will exceed production by about 736,000 tons in 2000, expanding to about 2,142,000 tons in 2010.
- These forecasts are contingent upon consistent government policy and continued economic stability in China.

China has traditionally sought self-sufficiency in pork, beef, poultry and fish. However, as China's economy has grown and market reforms were implemented, China's population became more diverse, reflected by changing consumer tastes and preferences for major meat products. China faces challenges in meeting consumption needs and will not remain self-sufficient in meat production. The purpose of this paper is to forecast China's supply/demand balance and net trade in meats over a ten-year period 2000-2010. Beef, pork, poultry and fish are included in the analysis.

Since China's economy is a planned economy, with government controlling prices, price does not always reflect the balance between production and consumption. Also, as China's per capita consumption of meat is only a small part of total consumption expenditure and is growing rapidly, consumption patterns do not follow those of a mature market. Production is more impacted by the previous year's production than by price, although there are some minor differences among meat products.

The analysis also takes into accounts for several factors unique to China. These factors include economic factors such as when China announced its reform policy in late1979, after which China's economy, especially in rural areas experienced huge changes in the first three to five years of the 1980s. As a result, a grain surplus developed and China began to encourage livestock production.

Diet and culture were also considered, such as a while there is a trend toward less consumption of red meat in urban areas, average pork consumption will still be higher than fifty percent of total meat consumption in the coming five to ten years. Other factors included are China's population, which has almost tripled since 1949, the extreme diversity of climates across regions, geographic characteristics and natural resources. Limitations in China's infrastructure, construction and the market distribution system resulting in the restriction of the balance of meat consumption and production in the market are also considered. The role of the Chinese government in allowing more open markets is considered.

China's net trade potential for beef, pork, poultry, and fish is forecast from 2000-2010. Results show that China will become a large net importer of beef, poultry, and fish. Pork production, however, will still exceed consumption by about 9,000,000 tons as China will remain a net pork exporter.

China's beef consumption will exceed beef production by from 59,000 tons in 2000, growing to 2,682,000 tons in year 2010. China's fish consumption will exceed production, increasing from 1,556,000 tons to 3,641,000 tons. Poultry consumption will exceed production by about 736,000 tons

in 2000, expanding to about 2,142,000 tons in 2010. These forecasts are contingent upon consistent government policy and continued economic stability in China. China's adoption of domestic growth and policies which do not unduly stimulate maximum production and affect the supply/demand balance will be critical to achieving their export growth potential.

China and the World Trade Organization: Effects on U.S. Soy Exports
Evert Van der Sluis and Wenyan Yang, South Dakota State University

Highlights:

- The results of the empirical analysis indicate that a reduction in China's import tariffs from 13 percent to 9 percent, combined with an increase in its soy oil import quotas, are expected to increase China's soy meal and soy oil imports by 6.0 percent and 33.8 percent, respectively.
- China's imports of unprocessed soybeans are expected to decrease by more than 50 percent. If China were to re-impose a 13 percent value-added tax on soy meal, the increased trade due to these proposed trade liberalization policies would be partially offset.
- Chinese imports of soy meal would decline by 4.5 percent from its 1999 level, U.S. soy meal exports would increase by a mere 2.7 percent, and Brazilian and Argentine soy meal exports would decrease from their 1999 levels.
- These results indicate that the U.S. would stand to benefit directly from the increased soy meal and soy oil exports to China due to China's potential membership in the WTO.

China is one of the largest soybean producers in the world, but increases in its domestic demand for soybeans, soy meal and soy oil have made it become a net importer since the mid-1990s. In the process of becoming a net importer of raw and processed soybeans, China has switched from being a competitor of the U.S. in the international soy markets to one of its major customers of soybeans, soy meal, and soy oil in less than a decade.

Proposed trade liberalization policies by China due to its impending membership in the World Trade Organization are expected to have implications for that country's imports of soybeans, soy meal, and soy oil, and consequently for exports of these products by the U.S. and other major soy exporters.

The results of the empirical analysis indicate that a reduction in China's import tariffs from 13 percent to 9 percent, combined with an increase in its soy oil import quotas are expected to increase China's soy meal and soy oil imports by 6.0 percent and 33.8 percent, respectively. However, China's imports of unprocessed soybeans are expected to decrease by more than 50 percent. If China were to re-impose a 13 percent value-added tax on soy meal, the increased trade due to these proposed trade liberalization policies would be partially offset. Further, Chinese imports of soy meal would decline by 4.5 percent from its 1999 level, U.S. soy meal exports would increase by a mere 2.7 percent, and Brazilian and Argentine soy meal exports would decrease from their 1999 levels.

These results indicate that the U.S. would stand to benefit directly from the increased soy meal and soy oil exports to China due to China's potential membership in the WTO. The U.S. would also benefit indirectly from the additional economic activity associated with processing soybeans in the U.S. prior to export. However, the direct and indirect benefits from the increased soy meal and soy oil exports would be partially offset by reduced exports of raw soybeans.

The Impact of China's Expanding Market on the U.S. Soybean Industry
Jian Jiang, Nicholas E. Piggott, and Michael K. Wohlgenant, North Carolina State University

Highlights:

- The results provide evidence of a sizeable net benefit to the U.S., China, and the rest of the world soybean producers for the trade liberalizing policy of reducing the tariff on soybean oil in China.
- An increase in the value-added tax levied by soybean meal by China would have adverse effects on the U.S., China, and the rest of the world.

The U.S. soybean complex was valued at more than 20 billion dollars in 1998. U.S. farmers produce almost 50 percent of the world's supply of soybeans and are heavily dependent on exports. More recently ending stocks of soybeans in the U.S. have been increasing contributing to the recent low prices traded. The expanding Chinese market for the soybean complex represents a potential bright spot to U.S. producers. However, China's soybean complex is subject to changes in governmental controls, particularly in trade policies (tariffs and quota) and taxation structure (Value Added Tax). This paper investigates the impact of possible trade policy changes in China's soybean complex and how this might affect the U.S. soybean industry and China itself. The joint product features of soybeans, and its two products—soybean meal and soybean oil, complicate matters such that policy changes in any one of the products has implications for the others. A model of the U.S. and China soybean complex in a world trade setting is developed to analyze the effects of (a) a reduction of the tariff on soybean oil in China and (b) an increase in the Value-Added Tax (VAT) on soybean meal in China. Estimates of the price, quantity, and trade effects of these policy changes are generated as well as the soybean producer welfare effects in each country.

The results provide evidence of a sizeable net benefit to the U.S., China, and the ROW soybean producers for the trade liberalizing policy of reducing the tariff on soybean oil in China. The reverse is true for the policy of increasing the VAT on soybean meal in China with this policy having adverse effects on the U.S. and the ROW, and even China.

ISSUES IN TRADE LIBERALIZATION

EU Restrictions on Ag-Biotech: Implications for Growth and Trade

Dave D. Weatherspoon, James F Oehmke, Christopher A. Wolf, Anwar Naseem, Mywish Maredia, and Amie L. Hightower, Michigan State University

Highlights:

- Under the restrictive EU policies on biotech production and consumption, North America will be the dominant producer of biotech R&D, and developing countries may be the dominant producer of biotech products.
- The EU will be the dominant producer of traditional agricultural products.
- The EU will produce products that are more labor intensive and the developing countries will produce goods that are more capital intensive.
- Developing countries might experience positive spillover effects from the biotech production process and evolve into a R&D competitor in the long run.

The introduction of ag-biotech into the market place has caused dramatic changes in the agricultural and related industry structures. The impact this technology will have on the location of firms, international trade flows and the economic growth of countries is not clear. However, the potential impact of the European Union's (EU) policies concerning the development, production, and trade of biotech products is enormous. In this paper, the effects of restrictive policies concerning the production and consumption of genetically modified agricultural products are analyzed. Specifically, the questions addressed are:

a) What will happen to the trade flows in the EU, North America, and Developing countries?
b) What are the implications for economic growth in these three trading blocks?

The major results of this paper are that, under the restrictive EU policies on biotech production and consumption, North America will be the dominant producer of biotech R&D. Developing countries may be the dominant producer of biotech products. The EU will be the dominant producer of traditional agricultural products. These results imply that over time the EU will produce products that are more labor intensive and the developing countries will produce goods that are more capital intensive. Developing countries might experience positive spillover effects from the biotech production process and evolve into a R&D competitor in the long run.

Given the restriction on consumption and production of biotech products in the EU, the product life cycle for biotech R&D will go from North America directly to developing countries versus traditional trade models in which R&D would have gone from North America to the EU and then to developing countries.

The overall effect of the EU's restrictive biotech policies results in an effective export subsidy of capital to Latin America. Lastly, the agricultural sectors economic growth for the EU is reduced dramatically due to these policies in the long run.

Sanitary and Phytosanitary Issues: Where Does the WTO Go from Here?
Suzanne Thornsbury, University of Florida

Highlights:

- As a mechanism to move towards freer trade in agricultural products, implementation of the SPS Agreement has been arguably successful.
- Three of nine formal complaints reached the WTO Appellate Body and, although outcomes were equivocal in terms of opening markets, strengthened disciplines on SPS measures were reinforced.
- Concerns remain over participation from developing countries and the role of consumer sovereignty.
- There was no agreement to open or renegotiate the SPS Agreement and the preliminary positions of specific countries do not indicate a strong movement to do so, thus reinforcing the perception that the current framework can move agriculture towards more open markets.

The SPS Agreement governs regulations that mitigate potential negative consequences relating to human, animal, or plant life or health arising from movement of products across political boundaries. Proponents argued that requiring scientific criteria set higher standards of accountability, provided for greater stability of expectations, and introduced a strengthened rule of law. Increased transparency and the recognition of compliant regions within national boundaries were also viewed as positive changes. Concerns included fundamental differences in how technical regulations are promulgated, rapid advances in risk assessment methodology, ability to determine an acceptable level of risk, and separating political expedience from standard setting in an international arena.

As a mechanism to move towards freer trade in agricultural products, implementation of the SPS Agreement has been arguably successful. Standard setting bodies have been increasingly active. More than 1100 SPS notifications have been filed with the WTO, 83 notifications were challenged in the informal forum provided by the WTO's SPS Committee, and additional disputes were resolved through bilateral negotiations. Three of nine formal complaints reached the Appellate Body and, although outcomes were equivocal in terms of opening markets, strengthened disciplines on SPS measures were reinforced. Concerns remain over participation from developing countries and the role of consumer sovereignty.

Although the 1999 Ministerial meetings in Seattle ended without agreement on the agenda for the next round of WTO negotiations, a preliminary agenda for continuing negotiations in agriculture was drafted. There was no agreement to open or renegotiate the SPS Agreement and the preliminary positions of specific countries do not indicate a strong movement to do so, thus reinforcing the perception that the current framework can move agriculture towards more open markets.

ISO 9000 Standards' Goal of Enhancing International Trade: The Case of U.S. Agribusiness
Albert J. Allen, Gerald Mumma, and Warren Couvillion, Mississippi State University

Highlights:

- Size of operation is inversely related to perceived marketability of registered ISO 9000 sites.
- The number of product lines registered to ISO 9000 standards, operational efficiency, and registration to ISO 9002 instead of ISO 9001 were inversely related to access to international markets.

- The percentage of international business, having a quality management representative from upper level management, third-party audits, total sales, and documentation were directly related to access to international markets for ISO 9000 registered sites.
- North America, Europe, and Asia were identified to be regions of increased international business and new international business due to adoption of ISO 9000 standards by U.S. agribusiness.

The world stage is set for increased opportunity for international trade. Consumers benefit from trade through lower prices, increased supplies, and greater variety and quality. However, with trade also arise increased risks due to the varied sources from which food and agricultural products are imported. Standards and regulations provide important mechanisms sure to affect food trade and safety in the twenty-first century (Buzby and Roberts, 1999). Harmonizing political, economic, and genuine safety concerns provides fertile ground for the proliferation of potential non-tariff barriers to trade.

Private system efforts to reduce food safety risks have developed around self regulation, vertical integration, Hazard Analysis and Critical Control Point (HACCP) systems, and third party certification such as the International Organization for Standardization (ISO 9000 series). The primary purpose of ISO 9000 standards was to facilitate international trade. They simultaneously apply quality system standards and product standards to assure and achieve consistent product quality. The standards have been used for over one decade by businesses around the world including U.S. agribusiness. Growth in the number of sites becoming registered to them is growing exponentially. However, not much economic information has been reported on how well these standards have helped facilitate international trade. This study is an attempt to narrow this information gap.

The objectives of this study are twofold: First, the present study evaluates reasons and expectations advanced by U.S. ISO 9000 registered agribusiness sites for registering to ISO 9000 standards. This would provide an indication of the extent to which the motivation to register to the standards may have been because of international trade requirements. Second, the study evaluates whether or not registration to the standards has improved (1) marketability, (2) internal operational efficiency of agribusiness sites registered to the standards, and (3) facilitated greater access to international markets for registered sites. The implications of each, all, or some combination of these for registered agribusiness sites and international trade is discussed.

A survey instrument was designed based on quality assurance and system quality management measures to include five general sections: the company (site) profile, reasons for seeking ISO 9000 registration, impact of ISO 9000 registration, process of registration to ISO standards, and customer/ supplier relationship. The survey instrument was sent to 273 quality assurance managers and quality representatives of registered ISO 9000 U.S. agribusiness sites.

The results showed size to be inversely related to perceived marketability of registered ISO 9000 sites. The odds that registered sites were perceived more marketable due to adoption of the ISO standards increased with customer satisfaction, total sales, domestic product prices, and the level of documentation. Reasons advanced for registration to the standards were closely related to the realized performance in quality assurance and quality system management.

The number of product lines registered to ISO 9000 standards, operational efficiency, and registration to ISO 9002 instead of ISO 9001 were inversely related to access to international markets. This result may suggest a competitive relationship between quality system management and quality assurance goals as far as access to international markets is concerned. The results also showed that the percentage of international business, having a quality management representative from upper level management, third-party audits, total sales, and documentation were directly related to access to

international markets for ISO 9000 registered sites. North America, Europe, and Asia were identified to be regions of increased international business and new international business due to adoption of ISO 9000 standards by U.S. agribusiness.

Seafood Trade in a Global Environment: Recent Trends and Potential Impacts of Recent Trade Agreements

Walter R. Keithly Jr., Hamady Diop, Louisiana State University, and John M. Ward, National Marine Fisheries Service

Highlights:

- Reduction of tariffs in these emerging Asian nations will likely result in increased imports by these countries of seafood products traditionally destined for the more developed nations.
- The impact of subsidies on overcapacity and over-fishing has been listed as an agenda item for the upcoming meetings.
- Subsidies to the fishing sector in the United States have historically been relatively low relative to the seafood producing countries, suggesting that the U.S. fishing sector may benefit from such non-tariff barriers.

World exports of fishery commodities has exceeded $50 billion annually in recent years and has been expanding at a rate in excess of 13 percent annually in real terms since the mid 1980s. Commodities traded, which range from the very low-valued species used primarily in the industrial and agricultural sectors to the very high-valued species served in upscale restaurants, are comprised of a combination of capture and culture products. Much of the growth in value of trade since the 1980s can be linked to increased cultured production of some of the higher valued species, such as shrimp and salmon.

The United States, which ranks second to only Japan on the basis of value of imports, and generally ranks as one of the three leading exporters, plays a pivotal role in the global trade in seafood commodities. Imports of edible fishery products by the United States advanced from $4.1 billion in 1985 to $7.8 billion in 1997 (more than 25 percent in real terms) while exports from the United States during the same time period advanced from less than $1.0 billion to $2.7 billion (about 80 percent in real terms). A significant portion of the increased U.S. imports of edible fishery products since the mid-1980s reflects the previously noted increased production of cultured product and the increased global trade in these products. U.S. competitors for these cultured products in the international market are Japan and the European Community. Primary export destinations for U.S. produced seafood products include Japan (approximately one-half of the total), Canada (approximately 20 percent of the total), and the European Union (15 percent of the total).

With respect to the U.S. fishing sector, one of the primary benefits has been realized through the reduction in tariffs, particularly in some of the more industrialized countries (regions) such as Japan and the European Community. In addition, many of the emerging Asian nations, such as Thailand, made important tariff concessions. Reduction of tariffs in these emerging countries will likely result in increased imports by these countries of seafood products traditionally destined for the more developed nations.

More recently, the impact of subsidies on overcapacity and over-fishing has been listed as an agenda item for the upcoming meetings. Efforts through the Food and Agricultural Organization, with leadership from the United States, to lower average subsidies to fishing sectors throughout the world and, hence, reduce overcapacity and over-fishing will, if successful, result in changes in trade patterns. In essence, such efforts can be interpreted as a form of a non-tariff barrier which benefit fishing sectors in those countries which have implemented strict capacity control programs while negatively

impacting the fishing sectors in those countries which lack the financial or other means of implementing such programs. Many of the countries in this latter group are the less-developed. Subsidies to the fishing sector in the United States have historically been relatively low relative to the seafood producing countries, suggesting that the U.S. fishing sector may benefit from such non-tariff barriers.

The U.S. harvesting sector is both geographically and structurally diverse. Impacts of previous and ongoing trade negotiations will affect the fishing sectors in some geographical regions more than in others and certain segments of the fishing sector - comprised of fishing fleets, wholesalers, and processors - will benefit more than others.

Modeling Impacts of the Macroeconomic and Political Environment on Long-Term Prospects for Agricultural World Markets
Martin von Lampe, Bonn University

Highlights:

- Many developing regions of the world are expected to increase their food imports, which would mainly be provided by industrialized regions, particularly the U.S..
- World meat prices will remain relatively stable in real terms between 1994 and 2020, but real grain prices are projected to decline by between 1.0 percent and 1.8 percent per year.
- In the long run, changes in the agricultural policies will influences particularly regional markets, while the impacts on international trade and prices are largely superimposed by macroeconomic developments in developing regions.
- Income prospects on the demand side, and agricultural productivity on the supply side, prove to be the main driving forces on global markets in the long run.

In recent years the long-term prospects of world agricultural markets have been subject of intensive discussions for two reasons. On the one hand, rising concern is given to the food security situation in a number of developing countries, which still is characterized by an unacceptably high number of malnourished people. The potential of agricultural production and the prospects of agricultural world markets will have significant impacts on the poorest members of the global society.

On the other hand, high levels of support for the agricultural sectors and large production surpluses in many developed countries, which could be exported only with the use of export subsidies, resulted in the need for international efforts to liberalize the markets. While a number of measures was implemented in the past (e.g. the 1992 EU CAP reform, the 1993 Uruguay Round Agreement on Agriculture, and the 1996 U.S. FAIR Act), the EU Agenda 2000 reform package is now passed and other rounds of multilateral trade negotiations have started. The outcome and impacts of these political changes and the developments on agricultural world markets will be strongly interdependent and are analyzed in this study.

The baseline results suggest that within the next two and a half decades global meat and cereal markets are driven especially by population and real per capita income growth in many developing regions, which result in growing food demand particularly for meat and high-value cereals. Many of these regions are expected to increase their food imports, which would mainly be provided by industrialized regions, particularly the U.S.. According to the results, world meat prices will remain relatively stable in real terms between 1994 and 2020, but real grain prices are projected to decline by between 1.0 percent and 1.8 percent per year. With these rates, the decreasing trend of real world market prices is expected to slow down significantly compared to the past 45 years.

Simulation results indicate that, in the long run, changes in the agricultural policies will influence particularly regional markets, while the impacts on international trade and prices are largely superimposed by macroeconomic developments in developing regions. Income prospects on the demand side, and agricultural productivity on the supply side, prove to be the main driving forces on global markets in the long run. The principal trends of decreasing world market prices with lower rates than in the past, however, are expected to be relatively stable.

Price Volatility: A Bitter Pill of Trade Liberalization in Agriculture?
R.D. Weaver and William Natcher, Pennsylvania State University

Highlights:

- While domestic policy reforms significantly reduced the role of government storage to stabilize agricultural prices, international trade policy changes exposed the agricultural sector to external sources of volatility.

Public involvement in agricultural markets has historically included import quotas, export subsidies, and price supports in an attempt to reduce the level of price volatility, lower stocks and support farm incomes. However, agricultural and food markets have evolved substantially since the depression era, as has the distribution of market power in those markets. Further, over the past few decades, government budget constraints and the realization that government involvement may not represent a feasible approach to stabilizing market prices has led to a reconsideration of the role of government in agricultural markets. Consequently, globally agriculture has seen substantive changes in regulatory policy at both national and international levels during the 1980's and 1990's. Most recently, (April, 1996) the Federal Agricultural Improvement Act (FAIR) was heralded as a significant shift in U.S. agricultural policy that established U.S. commitment to taking down non-neutral approaches to domestic price management. FAIR along with the Food Security Act of 1985 and the Food, Agriculture, Conservation, and Trade Act of 1990 attempted to reduce government involvement in the agricultural sector and move prices to competitive market determination. During this same period, international trade liberalization through the General Agreement on Trade and Tariffs (GATT) and the North American Free Trade Agreement (NAFTA) opened domestic markets to global competition.

Within this context, it is of interest to assess the implications of deregulation on price volatility in the agricultural sector. While domestic policy reforms significantly reduced the role of government storage to stabilize prices, international trade policy changes exposed the sector to external sources of volatility.

In order to assess evidence of implications of policy reforms on price volatility, this paper considers agricultural products that have been directly targeted by policy reform as well as those that have not. Products include: grains (#2 yellow corn, #2 hard winter wheat, and #1 yellow soybeans), dairy products: (NFD milk Grade A/Extra Grade; Grade AA Butter; and 40 lb. blocks and 500 lb. barrels of cheddar cheese), and beef (live cattle, slaughter cattle).

Welfare Implications of Trade Liberalization: The Case of U.S. Corn Production
Walaiporn Intarapapong, Mississippi State University

Highlights:

- Gains from world trade liberalization through subsidy reduction increase by $230 million.
- An increase in world corn demand also results welfare gains of $78 million if U.S. corn supply is not affected, and $246 million if U.S. corn supply is affected.
- Traditional economic measures do not take into account the environmental impact as a consequence of agricultural practices.
- Modern agricultural systems rely on a wide range of industrial inputs such as fertilizer and pesticides that can cost negative environmental impact to the society.

The Uruguay Round's (UR) provisions on agriculture represent an initial step toward liberalizing global agricultural commerce. Agricultural trade liberalization will lead to adjustments in production and consumption patterns. The provisions cover the issues of certain health and safety standards, reduction in domestic subsidies, tariffs, import quotas, and export subsidies.

The United States is a major agricultural producer and exporter. The 1996 farm legislation reduces the level of direct government intervention, and U.S. commitments under the UR agreement will further limit the level of agricultural support afforded through market intervention. These changes will have direct consequences for agricultural production, input use, and consumption. Trade liberalization and increased market orientation in U.S. agriculture can be expected to give rise to efficiency gains and taxpayer savings as subsidies and market distortions are reduced.

In addition to efficiency gains from subsidy reduction, a trade liberalization effect is expected to increase global income which will encourage demand for feed grains including corn as derived from an increase in demand for meat and life stock products. This circumstance could encourage U.S. corn production. Therefore, this study attempts to estimate net economic effects of trade liberalization derived from subsidy reduction and an increase in world corn demand.

Empirical results suggest that gains from world trade liberalization through subsidy reduction increase by $230 million. In the mean time, an increase in world corn demand also results welfare gains of $78 and $246 million. However, traditional economic measures do not take into account the environmental impact as a consequence of agricultural practices. Agricultural production is dependent on the use of natural resources such as land and water. Modern agricultural systems rely on a wide range of industrial inputs such as fertilizer and pesticides that can cost negative environmental impact to the society.

Simulated Effects of Greater Market Access on Korean Agriculture and Economy in the New WTO Agricultural Negotiations
Doo Bong Han, Korea University

Highlights:

- In the year 2010, the total production value of 16 major agricultural products would be reduced by 6 trillion won, reaching to about 65 percent of the 1998 level if market access on agricultural products is expanded to the level of general member country under the Uruguay Round Agreement.
- The annual growth rate of the agricultural sector is projected to be -2.9 percent from 2004 through 2010 if liberalized at the general member country level at the next WTO round.
- Korea needs to introduce new equity policies to lessen income disparity between farm and non-farm sector arising from the next WTO round.
- Trade liberalization will adversely affect the Korean agricultural economy, food self-sufficiency rate and overall economic growth.

- The agricultural sector will need continued structural adjustment to enhance agricultural competitiveness and stabilize the agricultural economy.

This study analyzes the impacts of greater market access on the Korean economy and agriculture under simulated scenarios of the next WTO round on agriculture. For this purpose, this study has developed major agricultural commodity models and a macroeconomic model.

According to simulation analyses, greater market access will have greater adverse effects on Korean agriculture. In the year 2010, the total production value of 16 major agricultural products would be reduced by 6 trillion won, reaching to about 65 percent of the 1998 level if market access on agricultural products is expanded to the level of general member country under the Uruguay Round Agreement. Especially, the value of rice production would be reduced by 4.8 trillion, about one half of current level, when the rice market is liberalized under tariffication. It would be a fatal blow to Korean agricultural economy with a major part of it comprised of rice producing households.

The annual growth rate of the agricultural sector is projected to be -2.9 percent from 2004 through 2010 if liberalized at the general member country level at the next WTO round. The agricultural sector will shrink to 2.5 percent of total economy, one half the current level. The per capita income for persons employed in the agricultural sector will be only 34.3 percent of income for non-agricultural employees, widening the gap of earnings between agriculture and non-agriculture sectors.

The results of this study suggest that it is needed for Korea to introduce new equity policies to lessen income disparity between farm and non-farm sector arising from the next WTO round. Trade liberalization will adversely affect the Korean agricultural economy, food self-sufficiency rate and overall economic growth. In addition, the agricultural sector will need continued structural adjustment to enhance agricultural competitiveness and stabilize the agricultural economy.