



# UPDATE

## Agricultural and Resource Economics

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### Re-emergence of South American Beef Exporters: New Competition for U.S. Producers?

by Lovell S. Jarvis and José E. Bergejillo

**U**nder new rules defined by the World Trade Organization in the Uruguay Round, sanitary barriers cannot be used for commercial purposes. This rule, combined with the recent eradication of foot and mouth disease (FMD) in Argentina and Uruguay, is allowing these countries to gain access to beef markets that were previously closed to them. This access is expected to lead to a significant increase in South American beef exports to Pacific Rim countries such as the U.S., Canada, Mexico, Japan, South Korea and Taiwan.

FMD is a highly contagious disease capable of inflicting significant mortality and large production losses in herds that have not been previously exposed. As a result of this threat, most countries in the Pacific Rim basis, including the U.S., long followed a policy of zero tolerance to FMD, meaning that they imported only cooked beef from countries with endemic FMD. Because fresh and frozen

beef from FMD-endemic countries could not be exported to most FMD-free markets, the price of beef from FMD-endemic countries sold in international markets at a substantial discount, about 50%, of the price of beef from FMD-free countries.

Under the new WTO regulations that resulted from the Uruguay Round, sanitary barriers can be imposed only when they are backed by scientific evidence. Consistent with the fact that FMD is carried in the bones, blood and ganglia of the animal, but not in the muscle, the U.S. negotiated import quotas of 20 thousand tons of boneless fresh beef, each with Uruguay and Argentina. Meanwhile, these countries successfully embarked on a national campaign to eradicate FMD. Uruguay was declared free of FMD without vaccination in 1995, and Argentina in 2000.

Argentina and Uruguay have already shown that they can easily fulfill their U.S. quotas (Table 1).

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**Table 1. Exports of Fresh Beef from Argentina and Uruguay into the U.S. 1998-2000**

Fresh Beef Annual Exports Metric Tons of Product Weight			
	1998	1999	2000 – Partial
Argentina	6,704	23,576	14,227 (*)
Uruguay	14,391	21,606	11,185 (**)

Sources: INAC (Instituto Nacional de Carnes, Uruguay) and SAGPYA (Secretaría de Agricultura, Ganadería, Pesca y Alimentación, Argentina).  
(\*) January-July                    (\*\*): January-May.

They have been rapidly increasing their exports to other NAFTA members as well. Total NAFTA exports grew from 23 to 85 thousand tons of fresh beef between 1998 and 1999, and are expected to grow more this year since neither Canada nor Mexico imposes a beef import quota.

The quota that the U.S. negotiated with Argentina and Uruguay does not represent a serious threat for U.S. producers, as it constitutes a very small proportion of the U.S. market. For example, Australia and New Zealand currently hold U.S. beef quotas permitting them to export much larger amounts to the U.S., 378,000 tons and 213,000 tons, respectively. However, Argentina and Uruguay have both expressed interest in obtaining larger U.S. quotas. They argue that since Australia and New Zealand have not filled their respective quotas in recent years, the U.S. should reallocate parts of those quotas to them. This proposition has encountered stiff opposition from Australia and New Zealand, but if it succeeds, the supply of imported beef in the U.S. will increase somewhat. Argentina and Uruguay might also sell beef to the U.S. outside the quota, despite the 26.4 percent tariff that applies, because of their low production costs (Table 2).

Beef production in Argentina and Uruguay has been relatively stagnant for decades due the poor export opportunities previously available. The adoption of new technologies has been slow and productivity is still low by international comparison. Only recently have beef

producers realized the need for incorporating new techniques in breeding ("early weaning") and fattening (use of silage, and to some degree, grain supplements). Beef prices in Argentina and Uruguay are expected to be higher as a result of gaining access to new markets and higher prices should result in more investment and higher output.

Beef produced in Argentina and Uruguay is leaner than U.S. beef, contains little marbling and, since it is mostly grass-fed, has a different taste. Uruguay and, especially, Argentina have begun to finish some cattle on grain supplements, but rarely for more

than 90 days. Most of these animals thus have carcass weights that are too light for the U.S. market and are sold in the domestic market. Argentina's domestic market (85 percent of total production), and in some degree Uruguay's market, are demanding relatively light animals, because consumers associate tenderness with young age and they are willing to pay a premium for small cuts, even though beef from heavier animals could be as tender after a short period of aging. In Argentina, 47 percent of animals slaughtered are calves, young steers and heifers weighing an average of 384 pounds carcass weight. Steers with carcasses heavier than 600 pounds account for 37 percent of total slaughter numbers. Thus, to become a major exporter of cuts to the U.S. market, one possible strategy for Argentina and Uruguay would be to significantly alter their production practices, developing a competitive feedlot industry. But, since the resulting carcasses could be sold domestically (if a part or all could not be profitably sold abroad) only at a

**Table 2. Domestic Prices of Cattle (steers).  
U.S. \$/kg liveweight, annual average**

	1994	1995	1996	1997	1998	1999
Argentina	0.76	0.79	0.81	0.91	1.06	0.79
Uruguay	0.70	0.82	0.76	0.79	0.87	0.75
Australia	1.01	0.96	0.74	0.86	0.83	0.78
U.S.A.	1.57	1.47	1.43	1.46	1.36	1.45

Sources: Argentina: SAGPYA (pesos/kg; exchange rate is about 1:1 with the dollar); Uruguay: OPYPA; Australia: ABARE, (estimated 60% yield); USA: Agricultural Agricultural Outlook, ERS/USDA, average of Kansas and Texas slaughter choice steers.

**Table 3. Argentina and Uruguay Exports to Pacific Rim Countries other than the U.S.; Full 1999, Partial 2000. (Thousand \$ FOB)**

Exports to	Argentina		Uruguay (*)	
	1999 (12 mo.)	2000 (Jan-July)	1999 (12 mo.)	2000 (Jan-Aug)
Japan	210	n/a	12,710	20,735
South Korea	—	n/a	110	10,375
Taiwan	5,969	5,438	—	—
Mexico	—	—	14,186	25,784
Canada	26,804	39,389	26,865	26,654

Sources: Uruguay: INAC; Argentina: SAGPYA.      (\*) Includes byproducts

significant discount, this strategy is risky. It seems unlikely that it will be widely adopted in the near future. A different strategy that both countries are already exploring is to compete in some high quality niche markets, e.g., natural (grass-fed, hormone free) beef. Such sales will occur primarily in large urban areas where consuming grass-fed South American beef has a caché with the sophisticated consumer. It does not appear that they will capture a large market share unless some incident creates widespread consumer concern with beef quality that shifts demand to the more natural product.

In fact, Argentina and Uruguay are exporting more manufacturing beef and less high quality beef to NAFTA markets, which is consistent with the export mix of Australia and New Zealand to the U.S. Thus, it seems likely that Argentina and Uruguay will compete more directly with Australia and New Zealand in a number of Pacific Rim markets rather than with the U.S., which tends to export higher quality cuts. Argentina and Uruguay face higher freight costs to Asian markets and to the U.S. west coast than do Australia and New Zealand, but both South American countries have been able to compete better than was expected. They are expanding into several markets, e.g., Mexico (Uruguay), Taiwan (Argentina) and Canada at a surprisingly rapid rate. It seems certain that this expansion will continue as both countries gain access to new markets and gain experience and exposure in the markets in which they are currently operating (Table 3).

Argentina and Uruguay long expected that they would enjoy sharply higher prices if they could eliminate FMD and gain access to markets that were previously closed to them, with fresh boneless cuts.

Somewhat surprisingly, a more important benefit that was not initially foreseen in these countries was the ability to sell manufacturing beef, specialty cuts (tongue, liver, lips, tail, kidney) and other byproducts at higher prices. Part of the recent increase in exports is composed of beef cuts and byproducts that previously had less value in domestic markets, e.g., trimmings and other manufacturing beef and specialty cuts like tongue and offal. These sales seem capable eventually of adding as much as 20% to the overall value of the animal. A further increase might occur as a result of selling higher value cuts in higher priced markets.

Ultimately, the higher value achieved in export markets should be reflected in a higher producer price. A number of studies have suggested that the long-run supply elasticity of beef supply in Argentina and Uruguay is about 1, implying that a 20% price increase should lead to a 20% output increase. If so, the higher prices that the two countries are beginning to receive should substantially increase exports in the longer run. Argentina produces about 2.8 million tons, of which 15% is exported, while Uruguay produces about 450,000 tons, of which 55% is exported.

The processing industry in each of the two countries is dispersed, undercapitalized, inefficient in its use of byproducts, and it fails to achieve economies of scale. Exporters are just beginning to learn new ways of marketing beef internationally. As a result, beef from the two countries is more expensive and/or producers in the two countries receive prices that are lower than would be the case if processing efficiency were increased. Efficiency is relatively low because slaughter plants are small and because poor use is made of

many byproducts. Neither country has a significant promotional strategy for its beef. In Argentina, many of the sanitary regulations that are enforced in plants that export are not required in the plants that sell beef only in the domestic market. Since exporting firms must sell a significant part of each animal slaughtered on the domestic market, these firms operate at a considerable disadvantage. The transformation of the National Meats Institute (Instituto Nacional de Carnes, a semi-public organization that basically enforces regulations in the Uruguayan industry) toward a more promotion-oriented institution, and the creation of a similar organism in Argentina, are currently under debate by the respective governments.

Argentina and Uruguay each has significant opportunities to expand beef production and beef exports. The principal limitation on expanding production is that Uruguay has limited land area of sufficiently high quality soils. This makes it difficult to fatten animals on pasture and grain is also more expensive than in Argentina. In contrast, Argentina has an abundance of excellent land, but rapid technological change in cropping during the last decade has made crop production more profitable than livestock. If the two countries linked their production area, they could produce more efficiently. Uruguay has land that is

excellent for cow-calf operations, but not fattening, while Argentina has excellent land for fattening and cheap grain. Traditionally, there has been little trade in live animals. Such trade is now legal, but it is impeded by high transport costs, high marketing costs and taxes. If these institutional details can be resolved, the two countries could produce and export more beef to international markets.

The two South American exporters will expand exports to FMD-free countries on the Pacific Rim, including the U.S., at a relatively fast pace in the short run. The amount of beef they can supply is small relative to the total market in this segment and their increased supply will not greatly depress prices. To significantly affect U.S. beef consumers, Argentina and Uruguay will have to obtain a much larger share of the U.S. quota. They are not expected to achieve this goal unless agreement is reached in the future to achieve economic integration between NAFTA and MERCOSUR, the customs union formed by the Southern Cone countries, Argentina, Brazil, Uruguay and Paraguay. In that case, Argentina and Uruguay would export more beef (especially grass fed beef) to the U.S. at the cost of less beef from Australia and New Zealand. Argentina and Uruguay might also substantially increase production of grain fed beef in the longer run.

To significantly affect U.S. beef producers, Argentina and Uruguay must be able to greatly increase their total exports. They will increase exports only as they transform their production and processing sectors. That process will proceed relatively slowly.



Beef cattle grazing in a pasture in Argentina. New WTO rules and the eradication of foot and mouth disease have opened up new beef markets for Argentina and Uruguay.

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# Kyoto Greenhouse Gas Emissions Reduction Targets: Economic Issues and Prospects

by Y. Hossein Farzin

The first report of scientists through the Intergovernmental Panel on Climate Change (IPCC) in 1990 indicated a likely rise in global temperatures and its potentially serious consequences. This led most participants at the 1992 Earth Summit in Rio de Janeiro to sign the United Nations Framework Convention on Climate Change (UNFCCC), by which they undertook to reduce their emissions of the main greenhouse gas, carbon dioxide, to 1990 levels by 2000. However, by 1995 it became evident that few countries had managed to reduce their emissions. This failure, together with a second IPCC report warning that global warming had already begun and was on the rise prompted the need for legally binding emissions targets for greenhouse gases (GHG) and timetables for achieving the targets, leading to the Kyoto Protocol signed in December 1997.

Under the Kyoto Protocol, 39 industrial countries (Annex I countries) committed themselves to reduce their total emissions of six greenhouse gases by 5.2 percent below 1990 levels between 2008 and 2012. However, to allow for the differences among the committing parties, the protocol sets different emissions reduction targets for different countries to achieve this overall target. Accordingly, the reduction targets for the European Union (EU), the United States, and Japan are 8 percent, 7 percent, and 6 percent, respectively. The protocol permits a number of other countries to increase their emissions over the period. Iceland's emissions will be permitted to rise by 10 percent from 1990 levels, Australia and Norway will also be allowed to increase their emissions by 8 percent and 1 percent, respectively. Importantly, Russia and Ukraine are required only to stabilize emissions at 1990 levels. In 1997, Russia's emissions were 30 percent below its 1990 levels, due to decline in economic activity and electricity usage since 1989. The protocol does not commit developing countries to any specific reduction targets.

## U.S. Participation Issue

The Kyoto protocol will become a legally binding agreement 90 days after it is ratified by 55 countries whose CO<sub>2</sub> emissions are at least 55 percent of total emissions by the Annex I parties in 1990. However, a major unresolved issue impeding the progress of the protocol toward becoming a legal agreement is U.S. participation. Since the United States is the largest producer of greenhouse gases (more than 1/3 of the emissions by Annex I countries in 1990), it is highly unlikely that without U.S. participation the protocol will come into force, or even if does, that it will succeed in stabilizing and reducing GHG. On the other hand, U.S. compliance with its Kyoto target implies a noticeably large reduction from its business-as-usual baseline projected emissions (for example, about 28 percent below its baseline forecast for 2010). A study in November 1998 by the U.S. Business Roundtable (whose members include Exxon, General Motors and Chase Manhattan Bank) estimated that compliance



Automobile pollution clouds the skies of urban centers throughout the world. Developing countries, lead by U.S. and Japan, are the major GHG emitters.

with the Kyoto target by reducing domestic emissions would lower U.S. GDP by 1.2 percent (or 60 billion dollars a year) from the baseline forecast for 2020. Accordingly, without further incentive to reduce compliance cost, the likelihood of the U.S. ratifying the protocol is very little, noting particularly that the compliance by European Union (EU) will require only 2.6 percent reduction from its baseline projected emissions for 2010 compared with 28 percent reduction by U.S. In turn, the asymmetry in compliance costs between U.S. on the one hand and EU and developing countries on the other, and hence the U.S. participation issue, has raised a number of other difficult issues that render the progress of the Kyoto protocol uncertain. The next sections highlight some of the issues.

### **Flexibility Mechanisms**

To reduce compliance costs for all parties, and in particular to provide incentives for U.S. participation, the protocol allows the use of several flexible mechanisms. These mechanisms are:

- Trading CO<sub>2</sub> emission permits across countries;
- Joint Implementation (JI) projects among Annex I parties: through this mechanism countries or companies can invest in joint projects to reduce emissions where it is least costly to do so;
- Clean Development Mechanism (CDM), whereby Annex I countries can invest in emissions-saving projects in the non-Annex I (i.e., developing) countries and obtain certified emissions reduction to offset against their own reduction obligations.

The uncertainty about the rules and procedures that should govern these mechanisms will continue to be a major obstacle in the way of bringing the Kyoto protocol into force. In particular, an important unresolved issue is the extent to which the three flexibility mechanisms should be allowed to be used to meet countries' abatement obligations as against using strictly domestic measures.

The specification of the ceiling on the use of flexibility mechanisms has profound economic implications for all parties, and hence significantly affects the likelihood of an agreement to bring the protocol into effect. Specifically, the lower the ceiling on the use of the flexibility mechanisms (i.e., the larger the percentage of abatement obligations that must be met through domestic measures), (i) the larger the overall cost of meeting the Kyoto emissions targets, (ii) the larger the differences in compliance costs across the regions/countries (specially between the high-cost countries like the U.S. and Japan on the one hand, and the EU on the other), and (iii) the larger the divergence between the domestic marginal abatement cost and the

international price of permits for the countries with high abatement obligations, such as U.S. and Japan, implying smaller gains for the purchasing countries from trade in emissions permits. Thus, for example, it is estimated that, with no limits on use of the flexibility mechanisms, U.S. total cost of meeting its obligations will be reduced by as much as 85 percent from that if no emissions trading is allowed. The corresponding estimated figure for Japan is even higher, about 93 percent, while for EU as a whole it will be less than 1 percent, reflecting EU's negligible projected abatement obligation (about 3 percent of its projected 2010 emissions), because of the burden-sharing among the member states and various emission saving measures implemented since 1990.

A question of particular interest may be the impact of the Kyoto emissions targets and flexibility mechanisms on the economy of California. Clearly, an informed answer to this question entails a comprehensive benefit-cost study that, among other things, takes into account the likely share of California in the U.S. total emissions reductions burden under the Kyoto Protocol, the scope for California to use the various flexibility mechanisms to meet its share of the emissions target, and other state or federal policies (specially those pertaining to the energy sector and environmental standards) that may affect California's future GHG emissions.

Also, a key consideration in such a study will be the expected long-run economic losses that California's economy could incur in a business-as-usual scenario, or, equivalently, the benefits it could reap from reducing GHG emissions. Given California's dominant share in U.S. energy consumption, its expected high growth rate of energy consumption in the next decade, and its heavy dependence on fossil fuel for transportation and electricity generation, it seems reasonable to speculate that (a) California's share of the total U.S. emissions reductions targets will be large, so that (b) the use of flexible mechanisms could considerably lower the costs of meeting its emissions reductions burden. Further, given the leading role of California in mandating and practicing high environmental standards, together with its advanced agricultural and industrial technological base, it is quite possible that compliance with Kyoto abatement targets will in the long-run encourage faster innovation and diffusion of clean technologies, thereby giving California a comparative advantage in supply of such technologies and thus indirectly boosting its economy.

In any event, the vastly unequal national gains from the flexibility mechanisms places the U.S. and Japan diametrically against the EU in defining the ceiling on the use of the mechanisms. In particular, under the

pressure from industry groups and with the backing of Australia, which advocates carbon sequestration through land use practices and forestry activities (the so called "land-use change") as an additional flexibility measure, the U.S. is anxious to have maximum use of the flexibility mechanisms to allow for 85 percent of commitments to be met through them. The EU, under pressure from environmentalist groups, is worried that other industrialized countries, especially the U.S., will evade their abatement obligations by resorting to these mechanisms. It has therefore proposed that the use of flexibility mechanisms be limited by requiring that at least 50 percent of the obligations be met through individual country domestic action. However, it is uncertain that this proposal will be accepted by U.S., as it most likely raises her compliance costs by a significant factor. The EU proposal may also encounter opposition from developing countries (specifically China and India), since they will be the other major beneficiaries (aside from the U.S. and Japan) from the full use of the flexibility mechanisms.

### **Hot Air Loophole**

Another hindering issue, related to the ceiling on use of flexibility mechanisms, is that of the so called "hot air loophole." Hot air pertains to countries whose assigned emissions under the protocol exceed their anticipated emissions even under any emission limitation, thus generating an emissions surplus. Although the total size of this surplus (hot air) is highly uncertain (estimates range from about 90 metric tons of carbon to about 375 MtC), Russia and Ukraine will most likely be the two principal sources of hot air. If emissions trading is allowed with no limitation, the major GHG emitters, such as U.S. and Japan, will be able to meet part of their obligations by buying hot air, thereby increasing the total emissions level from what it would be in the absence of emissions trading in general (or hot air trading specifically), although the level will not exceed the aggregate Kyoto targets.

Obviously, the size of available hot air to be used to offset abatement commitments depends not only on projections of economic growth, and hence of emissions growth, for Russia, Ukraine, and several East European countries, but also on the agreed ceiling on use of the flexibility mechanisms. With no ceiling, hot air supply will be used fully, since it involves zero abatement cost. This could allow the U.S. and Japan to increase their domestic GHG emissions by 5-10



Refinery emissions are targeted for mandatory reductions under the Kyoto Protocol. California's heavy dependence on fossil fuel will demand faster innovation and diffusion of clean technologies.

percent over the next 15 years. Importantly, if trade in hot air is not allowed, then the total size of offsets available from the three flexibility mechanisms will be smaller, thus leading to higher international prices of permits, and greater resort to domestic actions and the flexibility mechanisms (including JI and CDM) that involve real abatement.

Therefore, a proposal to disallow trade in hot air may obtain the support of developing countries (particularly China and India) in addition to the support of the EU and environmentalist groups, but may see opposition from Russia, Ukraine, U.S., Japan, Canada, Australia, and New Zealand (the so called "umbrella group") and industrial groups.

### **Developing Country Participation**

Another major impediment to bringing the Kyoto protocol into effect is the United States' insistence on extending emissions reduction targets to developing countries. In fact, U.S. Congress has made this a condition of ratification of the protocol. Developing countries (particularly China and India), through G77 Group, have strongly opposed the U.S. demand, arguing that the industrial countries, lead by the U.S. and Japan, are the major GHG emitters, while for the majority, developing countries' emissions are much lower than those of the industrial countries. Even China, the second largest GHG emitter, has per capita emissions only one-seventh those of the United States. Whether the thorny issue of developing country participation in emissions reduction targets will be resolved to pave the way for the U.S. ratification of the protocol remains highly uncertain.

Kyoto Protocol —continued on page 8

## Issues Facing the Implementation of Flexibility Mechanisms

As the foregoing discussion makes clear, the prospects for the Kyoto Protocol to enter into force depend crucially on successful implementation of the flexibility mechanisms, particularly CDM. There are, however, a number of important implementation issues that ought to be resolved if the perceived gains from flexibility mechanisms are to materialize. One of the notorious issues facing CDM is that of the "additionality" test. According to the Article 12.c of the Kyoto Protocol, only projects that cause "[r]eductions in emissions that are *additional* to any that would occur in the absence of the certified project activity" can generate emissions reduction credits under CDM. However, there is so far no agreement on the definition of standards, and hence of the baselines, for determining "additionality". Such baselines are likely to vary both across developing countries with different technological conditions and as technologies change over time.

A project-by-project verification of claimed emissions reduction credits and establishment and execution of punitive rules for false claims can formidably increase the CDM transaction costs. The distribution of benefits from CDM poses another difficulty. How should the benefits of CDM projects be equitably distributed between host developing countries and investing countries? Does the sovereignty of host countries entitle them to larger shares? Will the opportunities for CDM investments be equitably distributed across developing countries, or would the investors prefer the more developed countries over the least developed ones?

A further issue is the role of private sector and government in initiating and implementing CDM projects: Who could initiate and/or finance CDM projects? How should one distinguish between the projects that, as a by-product, would reduce emissions but the government would have undertaken them anyway, and the projects that generate additional reductions? Can a developing country's own government and/or private sector initiate, finance and execute emissions-saving projects? Given the scarcity of public sector resources, and hence the important role for the private sector, what are the incentives for the latter to invest in such projects? What role should international financial institutions such as the World Bank play? Would Annex-I countries' assistance for CDM replace their foreign aid?

Clearly, some of the issues noted above also apply to international trading of emissions permits. For example, establishment of rules for compliance, monitoring and enforcement (to prevent under-

reporting of emissions, for instance) seems essential for the success of emissions trading. In turn, this necessitates the establishment of an independent coordinating authority to facilitate international trades in permits by reducing barriers to trade, such as imperfect information about costs and benefits of trading and transaction costs involved in buying and selling permits.

## Conclusion

This article has emphasized the important role of flexibility mechanisms in bringing together various parties of differing interests and approaches to reach an international agreement to stabilize global emissions of greenhouse gases over the next decade. It has also highlighted some of the many major issues that render the progress of the Kyoto protocol uncertain. Nevertheless, at this stage of negotiations, the key to the success of the protocol seems to lie in an agreement among the negotiators to start a period of experimentation with the CDM and trading permits in order to demonstrate the benefits of these flexibility mechanisms to the participating parties and also to allow the mechanisms and markets to become established and countries to become more familiar with their operations.

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## Beef Market Update

by Steven C. Blank

**W**hat difference a year makes. A year ago in an *Update* article entitled, "The Beef Industry in Crisis," it was explained how profit margins for cattle ranchers were being squeezed by the cattle cycle's delayed shift to its increasing-prices phase. Now it appears that the cattle cycle has finally turned and prices to ranchers will rise for the next couple of years.

This article briefly updates changes in the cattle market since last fall that lead to the improved outlook for prices. It relies on data and forecasts from *Livestock Monitor* published by the Livestock Marketing Information Center, which is operated by state Extension Services in cooperation with the USDA.

### Beef Trends

On July 7, 2000 *Livestock Monitor* reported data that signaled the beginning of the cattle cycle's long-awaited reversal. The *Monitor's* report of current beef trends follows.

"Beef production forecasts for 2000 and 2001 ratcheted higher in recent months due to the larger than expected placements of cattle on-feed and much heavier than anticipated carcass weights."

"U.S. beef production continues to be record large. Even with moderating cattle slaughter levels in the last few months of 2000, U.S. commercial beef production this calendar year is

expected to be record large at about 26.5 billion pounds. Expectations just a few months ago were that U.S. beef output had cyclically peaked in 1999 at 26.4 billion pounds.

"Heavier than anticipated cattle slaughter weights were behind the bulk of recent upward revisions in beef production forecasts. In recent weeks, dressed steer weights increased more than seasonally. Typically slaughter steer weights peak in the late summer months (August or September). Steer weights are indicating that slaughter-ready cattle have begun to back-up in feedlots. So, fed-cattle marketings must become much more aggressive soon to preclude further deterioration in fed-cattle prices.

"On a quarterly average basis, U.S. beef production is not likely to post year-to-year declines until the fourth quarter of this year. Beginning in the fourth quarter of 2000 and continuing throughout 2001, U.S. beef production may decline mostly in the 3 to 5 percent range compared to a year earlier."

### Cattle Cycle Turns for the Better

The significance of the forecast in the preceding paragraph is that, finally, the cattle cycle is turning from its "herd liquidation" phase to its "herd build-up" phase. During the liquidation phase, the national herd was slowly decreasing in numbers as ranchers

sent more animals to market in response to low and declining prices. The increased marketings put downward pressure on prices. That multi-year phase bottomed in 1996 when prices hit their lows of \$58-60/cwt. Since that time feeder cattle prices have slowly increased, as noted in Table 1. The result has been a gradual slowing of the liquidation process.

Cattle market analysts have expected the cattle cycle to swing to its build-up phase for almost two years and now, finally, it appears to have done so. During that phase, ranchers respond to early price increases and send fewer heifers to market as they plan to use those animals for breeding to expand herd size. The production data in Table 1 show signs of that occurring.

The significance of that turn in the cattle cycle is that, with fewer animals going to



Hereford beef cattle grazing in pasture. Finally, the cattle cycle is turning from its "herd liquidation" phase to its "herd build-up" phase.

market, cattle prices begin to rise more steadily. Due to the length of the biological production process, it takes a few years for herds to expand such that significantly more animals can be sent to market. Thus, early in the build-up phase, cattle prices trend upward. Eventually, the increased number of animals produced and marketed will slow price increases and reverse the upward trend. Sometime after that price peak, the resulting decline in prices will trigger the cattle cycle's turn back to a new liquidation phase. However, that process will take at least 3-6 years to occur, based on historical cattle cycle behavior. That means the next 2-3 years should have an upward price trend for cattle.

### Low Feed Costs will Help Cattle Prices

The prices ranchers receive for their cattle are related to the prices of feedgrains because feed costs affect what feedlots can afford to pay ranchers for feeder cattle. Thus, Livestock Monitor's July 7 report on feed costs adds another positive piece to the cattle price outlook:

"USDA's Acreage report (released June 30) held a surprise in the corn acreage planted. According to the report, U.S. farmers planted 79.6 million acres of corn in 2000. That was almost 2.2 million more acres planted than a year ago and was about 2 million more acres than some of the largest pre-report estimates.

Farmers expect to harvest 73.1 million acres of corn in 2000, almost 2.6 million more acres than a year ago and, if realized, the largest harvested acreage since 1985. With the release of larger than expected corn plantings, feedgrain prices dropped quickly. Feeder cattle prices have increased with declining corn prices."

Livestock Monitor's updated report of August 18 confirms that feedgrain prices are likely to remain low for the next year.

"The Crop Production report from the USDA (released August 11, 2000) estimated that U.S. corn production will be 10.4 billion bushels this year, 10 percent larger than 1999's. If realized, both U.S. corn production and yield will be record large."

### The Bottom Line

All of this indicates that cattle prices are likely to improve over the next couple of years, but the cattle industry's crisis may not be over. Profits will improve with rising prices, yet there is still much uncertainty about what the average return on investment to ranchers will be when averaged over the long run. It is certain that the cattle cycle will continue to raise and lower prices over time. However, it is quite uncertain

whether the "good years" will outweigh the "bad years" in this era of increasing global competition. Individual ranchers need to focus on their own long-run return on investment to judge whether cattle production remains sufficiently profitable for them.

**Table 1. U.S. Market Indicators, September 15, 2000**

Beef Production for Week	<u>Current</u>	<u>Year Ago</u>	
Cattle Slaughter (1,000 Head)	712	724	
Slaughter Cattle Weight, Avg. (lbs.)	1229	1215	
Beef Production (Million lbs)		533.5	535.4
Previous 6 Week Moving Avg.			
Total Beef (Million lbs.)	528.7	513.1	
<b>Prices</b>			
Weekly Weighted Average	<u>Current</u>	<u>Week Ago</u>	<u>Year Ago</u>
Live Fed Steer (\$/Cwt)	64.67	63.95	66.05
Dressed Steer (\$/Cwt)	101.91	101.10	104.60
Feeder Steer, in Georgia (\$/Cwt)	81.00	80.00	70.88
USDA Hide/Offal (\$/Cwt)	8.70	8.42	7.64
Corn, Omaha (\$/Bu)	1.46	1.54	1.64
Wheat, Portland (\$/Bu)	2.76	2.79	3.23
Wheat, Kansas City (\$/Bu)	2.80	2.86	2.52
Soybeans, S. Iowa (\$/Bu)	4.48	NA	4.62

Steven C. Blank is a UC Cooperative Extension Specialist in the ARE department and the assistant vice provost of academic personnel at UC Davis. His interests include financial management, risk and decision-making, futures and options markets and management methods. Dr. Blank can be reached by telephone at (530)752-0823, or by e-mail at [sblank@primal.ucdavis.edu](mailto:sblank@primal.ucdavis.edu).

## ARE Faculty Profile

**D**esmond Jolly is a Cooperative Extension Specialist in the Department of Agricultural and Resource Economics at UC Davis. Since 1995, he also has served as director of the UC Small Farm Program, which provides research-based information and counsel to California's small-scale farmers.

Desmond grew up on the Caribbean Island of Jamaica, one of five siblings, whose family engaged in many different enterprises. They operated a few small groceries, a small two-truck transport business, a bakery and a farm, on which they grew plantation crops such as coconuts, bananas and sugar cane, and raised cattle, goats, chickens and pigs.

In the fall of 1961, Desmond left the Caribbean to attend Utah State University, still uncertain about his major or future career plans. But, after taking an economics 1A course from a Turkish visiting professor, he discovered his fascination with economics. At this point in time, Jolly envisioned a career as a technocrat in economic planning at national or multi-national levels. He received both his M.A. and Ph.D. in economics at the University of Oregon.

Des returned to agriculture by way of his involvement in issues related to food access and other related concerns which took center stage in the 1970s. He moved to California in 1971, where he joined the University of California as an extension economist. In 1975, he was appointed to the Consumer Advisory Committee in the California Department of Food and Agriculture. By 1980, Governor Brown appointed him to the State Board of Food and Agriculture, which gave him exposure to a wide assortment of important agricultural issues.

Today, his research interests include the intersection between agricultural science and technology and broad societal values, with particular regard to agricultural biotechnology, organic production and sustainable agricultural practices. Over the years he has taught in both agricultural and resource economics and international agricultural development.

Des was appointed director of the Small Farm Program in 1995. The program operates statewide as part of the University of California Division of Agriculture and Natural Resources (DANR). Its research and education efforts focus on issues such as specialty crop production, alternative marketing, food and pesticide safety and agricultural tourism. Small-scale farms number nearly 60,000 in California and account for about \$2.3 billion in annual production.



Desmond A. Jolly  
Cooperative Extension Economist  
Director, UC Small Farms Center

The program also works closely with farmers' market organizations to ensure alternative and profitable market access for small- and moderate-sized producers.

In 1997, US Agriculture Secretary Dan Glickman appointed Jolly Vice-Chair of the National Commission on Small Farms. The commission held hearings in farming communities nationwide and submitted a report to Glickman in 1999 titled "A Time to Act," which contains the most significant policy recommendations made to the Clinton Administration on small-scale, family farms.

Jolly now sits on the National Advisory Board for Research, Extension, Economics and Education, the top research and education advisory board for USDA. The board looks at the USDA's range of research and education activities and makes recommendations for policy and funding priorities.

When not travelling or busy with the responsibilities of his research and running the Small Farm Center, Des enjoys reading, gardening and cooking. He is also a jazz aficionado, and regularly contributes articles to a music periodical. He is active in several civic organizations and commissions in Davis, where he resides with his wife, Julia.

Desmond Jolly can be reached at the Small Farm Center by telephone at (530) 752-7774, or by e-mail at: djolly@primal.ucdavis.edu. You can visit his Web site at: [www.agecon.ucdavis.edu/Faculty/Desmond.J/Jolly.html](http://www.agecon.ucdavis.edu/Faculty/Desmond.J/Jolly.html), or that of the Small Farms Center at: [www.sfc.ucdavis.edu](http://www.sfc.ucdavis.edu)

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