Agricultural Markets and Price Aberrations
Lessons from the
International Market Place

Scholarly research for the consideration of:

The Expert Committee to Examine the Impact of Futures Trading on Price-rise in Agricultural Commodities

Professor Abhijit Sen Member, Planning Commission	Chairman
Shri Sharad Joshi MP	Member
Prof. Siddharth Sinha IIM, Ahmedabad	Member
Prof. Prakash Apte Director, IIM, Bangalore	Member
Dr. Kewal Ram Member, FMC, Mumbai	Member

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by

Andrea Corcoran

Andrea Corcoran, a senior attorney and commodity law specialist, served in a number of positions over twenty years at the Commodity Futures Trading Commission (CFTC), including the Director of the Office of International Affairs, Director of the Division of Trading and Markets, and as Chief Counsel. She is Managing Director and Senior Commodity Counsel at the Promontory Financial Group LLC, and Special Counsel to the FMI India Commodity Futures Market Project.

Edited and Reviewed by:

Charles M. Seeger, Chairman and CEO of Financial Markets International, specializing in capital markets development, commodity markets laws and regulations, and exchange operational procedures. He was formerly Senior Vice President and Counsel for the Chicago Mercantile Exchange. He directs the FMI India Commodity Futures Market Project.

R. Jayaprakash, Resident Adviser on the FMI India Commodity Futures Market Project, and formerly headed the Market Watch and Surveillance Department at the NCDEX, Ltd. He worked as a senior adviser to commodity futures exchange initiatives in Asia and Africa, was an executive with ICICI Bank, and began his career with positions at the Reserve Bank of India and the Bank of India.

Ann E. Berg, an international commodity specialist, is a former exporter and commodity futures trader who served on the Executive Committee of the National Grain Trade Council, and was twice elected to the Board of Directors of the Chicago Board of Trade. She is Commodity Hedging Expert to the FMI India Commodity Futures Market Project.

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FMI, 7735 Old Georgetown Rd, Suite 310, Bethesda, MD 20814, USA, Tel: 301-215-7840

FMI, 208 Keshava, Bandra-Kurla Complex, Bandra (E), Mumbai 400 051, India, Tel: 22-6710-9102

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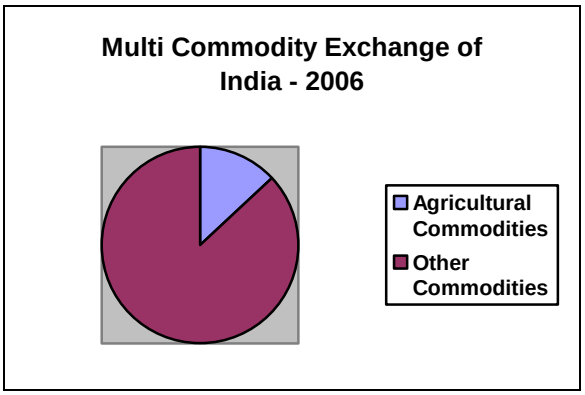
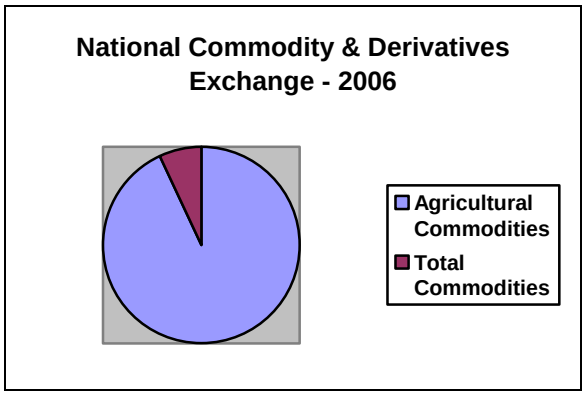
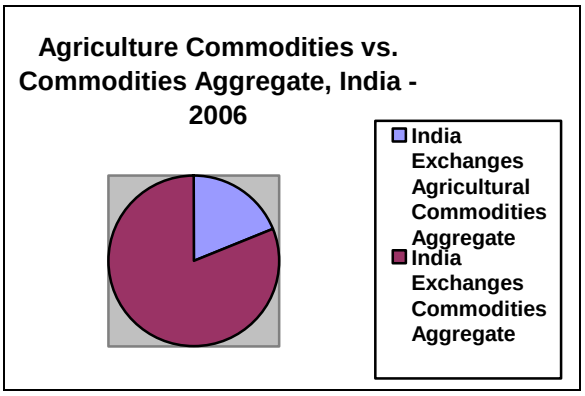
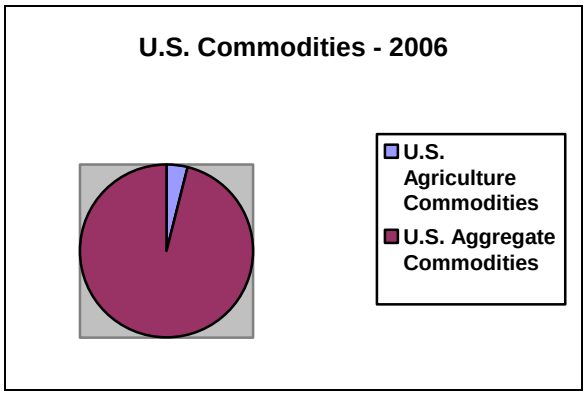
Commodity Markets and India: An Introduction

During the last five years, modern commodity futures exchange markets developed at an astonishing pace in India. This reflects the liberalization of domestic policies restricting forward trading of agricultural commodities, India's status as a commodity-based economy and the growing strength of its capital markets. Two national commodity exchanges located in Mumbai—the Multi-Commodity Exchange (MCX) and the National Commodity Derivatives Exchange (NCDEX)—today account for more than 90% of the commodity futures trading volume. The Forward Markets Commission (FMC), a part of the Ministry of Consumer Affairs and Food & Public Distribution, oversees Indian commodity futures markets. The FMC recently reported that during the Indian financial year March 2006 – April 2007, commodities valued at INR 36.7 trillion (U.S. $843.5 billion) were traded compared to INR 21.6 trillion (U.S. $483.1 billion) for the previous year. By year end, the two Mumbai commodity exchanges reported to the Futures Industry Association (FIA) aggregate agricultural contract volume for calendar year 2006 of 55,371,892 compared to 48,053,360 during the previous year. Today, India is one of the largest commodity futures markets in the world, and these markets are of huge interest to traders, market participants, and exchange stakeholders in India and abroad.









Until the beginning of 2007, India's commodity futures markets were touted in the international and Indian media, and among financial markets experts, as models of the most up-to-date trading technology. And as remarkable examples of ambitious exchange-driven initiatives to improve cash market grading, warehousing, delivery mechanisms, and pricing practices. These new markets, guided by internal and external experts, took innovative steps, tailored to the specifics of the Indian market structure, to improve prices determined in over 7,000 dispersed bazaar-style cash markets or *mandis* by more broadly disseminating price information down to the producer level. The result fostered progress toward better production management, improved infrastructure, and improved financing possibilities. These markets also made significant strides toward more equitably distributing pricing power between the subsistence producer, buyer's agents, and other aggregators and intermediaries.

This Indian success story, however, came to an abrupt pause in February of this year. On February 27, in response to price escalation in the nearby months (prefigured last summer) and with buffer stocks at an all time low, the FMC suspended new contracts in wheat and rice, restricting trading to liquidation only. This action followed an earlier ban on trading of another food staple — *urad* and *tur* (pulses/lentils). The circumstances in the cash market fueled concerns that as drought had severely affected the old wheat crop, it could affect food supplies adversely, even though the new wheat crop was expected to be materially better and futures trading in the delisted products was minimal in comparison to supply. Further, policy advisors were predicting that with demand growing, the country could become a major importer for the indefinite future after becoming an importer in 2006 for the first time in six years, thereby indicating a possible need to facilitate food procurement by the Food Corporation of India. The government acted in this context, and also in the environment of a large number of producer

suicides (for low prices), and strong consumer dissatisfaction with the rising prices of food stocks (high prices), as reflected in the outcome of recent elections.

Some public commentators noted that the governmental actions made the mistake of blaming the futures markets, rather than the forces of supply and demand, or the failed execution of existing agricultural consumption policies. Other experts urged that properly operated futures markets, and corresponding improvements to cash market infrastructure, could play such a critical role in the management of risk and improvement of spot markets that they could become indispensable to effective market policies. Some feared that an Amendment Bill pending before Parliament that would augment the Forward Contracts Regulation Act and the powers and independence of the FMC would be delayed or even derailed. The market had also expected amendments that would increase the capacity of foreign firms to participate in the market and to take stakes in the exchanges. To better evaluate all of these positions and concerns, the Finance Minister announce the formation of a committee under Prof. Abhijit Sen, a noted economist from the Planning Commission, to examine the impact of futures markets on prices and to guide its further policy determinations in this matter.

Abstract

This research paper does the following:

- Reviews various agricultural futures markets and a sample of market events and public policy responses (Tables 1 and 2);
- Explains the international guidance that exists, particularly directed to futures markets, which finds that proper contract design and surveillance are essential to market success and integrity;
- Discusses the need for education of market users and the public, and constant communication about market performance; and
- Stresses the value of communication among agencies and relevant political constituencies or stakeholders in implementing policies related to the oversight of futures and the management of strategic commodity supplies.

Based on the research and the related analysis, this paper also offers certain conclusions on where further effort might be expended to assure that commodity futures markets function properly and in the public interest. This paper recommends the following:

1. A regulatory framework for market oversight and contract design is critical to the relevant authorities' capacity to explain market performance, address market aberrations, and confirm that price discovery is consistent with supply and demand.
2. There is useful guidance on international best practices for contract design and market surveillance issues.
3. Cash market infrastructure matters. The ability to deliver commodities can discipline prices formed in the market and dispel suspicion about cash price polling regimes.
4. Improvement of spot markets can contribute to overall economic improvement for subsistence farmers.
5. Transparent, predictable agricultural policies relating to supply and price can co-exist with a successful financial market.
6. Education, training, and communication between the markets, their users and other stakeholders, are critical.

Background

Properly functioning and overseen futures markets can mitigate various types of commodity price risks: short term fluctuations characteristic of agricultural products, either for seasonal reasons, year-on-year variations in supply due to production decisions and climate conditions, and medium term changes caused by business cycles and the substitutability of products. Forward markets and the related derivatives markets that help them function can reduce unpredictable risks from short term price fluctuations. If transaction costs are low enough, and liquidity is high enough, such markets potentially can reduce the costs of implementing agricultural policies and foster broader economic policies in commodity-based economies. Futures markets can result in better production planning and short term price management; they cannot, however, eliminate price deterioration or escalation due to forces of supply and demand.

The challenge of commodity prices (over escalation or de-escalation) has been recognized at the national and international levels and various strategies have been used over generations

by industry and governments to address these concerns. International policy now disfavors governmental intervention in the markets. This fact has fostered increased interest in the informed use of hedging venues by government aggregators and procurement agents, as well as traditional market participants, in support of other governmental policies. These developments also have led emerging economies to explore actively whether futures markets can be helpful in moving toward more rational, less reactive, approaches to production and storage.

Nonetheless, *strategic commodities* remain a governmental concern, notwithstanding less interventionist supply side and trade policies. Governments have a legitimate and fundamental interest in domestic supplies and prices and how commodity markets perform. Indeed, in most free market jurisdictions there is a strong link between the ministries or agencies with responsibility for agricultural policy with those responsible for commodity futures markets designed for shifting risk in agricultural markets. This observation reflects the commonality of the political sensitivity of such markets, the paramount need to assure that food supplies are adequate for the domestic population, and the fact that it is not unique for futures markets (which promptly reflect and predict changes in price sentiment) to become misunderstood and convenient scapegoats as the cause (however unlikely)—rather than the reflection—of price direction.

For example, during the first Gulf War, the then U.S. President blamed speculation in futures markets for the dizzying rise in oil prices subsequent to Iraq's invasion of Kuwait, and even suggested shutting the futures markets down (before later recanting). The then Commodity Futures Trading Commission (CFTC) Chairman testified that there was no evidence of manipulation of the price of oil in New York exchange markets, and an independent research group blamed the government for not making more effective use of the Strategic Petroleum Reserve established in the 1970s[1] to stabilize prices by increasing certainty as to supply.

The price of staples can be viewed as unsatisfactory even without the provocation of a domestic futures market. On February 2, 2007, in Mexico City 75,000 people took to the streets

[1] San Francisco Chronicle, "Oil Futures Face Possible Shutdown in A Gulf War," (November 2, 1990), page C1. See more recently, Haigh, Hranaiova and Overdahl, "Price Dynamics, Price Discovery and Large Futures Trader Interactions in the Energy Complex," (April 28, 2005), www.cftc.gov finding that managed money traders (hedge funds, pools of private capital) positions changes in the very short run are triggered by hedging participants changing their positions.

to protest the projected price of tortillas (and by implication the rising price of corn imported from the United States) based on the U.S. President's speech in favor of alternative fuels. Both President Calderon and his opposition leader Obrador spoke in favor of sustaining price stability. In that case, Obrador promised supervision of prices of basic foods and cancellation of foreign trade, a position likely at odds with reduced prices.

The social issues being faced by India, therefore, cannot be ignored by market developers and politicians. These issues, however, are hardly unique. It is thus worthwhile in addressing them to review the wealth of pre-existing experience about the causes and policy responses to market failures and resulting lessons for regulatory authorities. At the same time, it is sobering to reflect on the long-term adverse impact on markets of unpredictable and even necessary interventions. Precipitate interventions can ultimately exacerbate rather than moderate market aberrations.

Lessons Based on International Experience

Oscar Wilde said that "experience is the name everyone gives to their mistakes." This is certainly the history of futures markets. Today, there is well-articulated guidance in the international community that addresses what most believe are the components of soundly regulated futures markets. This guidance grows out of a large body of experience, and the related policy responses surrounding market events, financial incidents, and regulatory mistakes. (**See Table 1 in the Appendix**) This guidance, articulated in multiple reports, focuses on:

- appropriate contract design,
- monitoring for market abuses,
- financial integrity requirements, including suitable credit enhancement arrangements, clearing facilities, and client asset protections,
- adequate information on related cash markets,
- absence of impediments that would prevent the trading of contracts for differences or policies that injure the certainty and reliability of their continuing functioning,
- existence of efficient and transparent cash markets, and
- consistent grading and assaying mechanisms.

The experience of the international community is that a sound regulatory framework and a properly empowered regulator are critical to the capacity of futures markets to work as reliable risk shifting/risk management operations. And, this in turn is critical to the success and bottom line of the market.

Typically, market failure events involve: lack of certainty as to regulatory requirements either at the commodity futures exchange or the regulatory authority (China, Philippines); insufficient credit enhancement arrangements (UK, New Zealand, Hong Kong, China, Philippines); failures of internal controls at participating firms (Singapore, UK, U.S., Japan); configurations of the market in which backwardation is an element (LME, U.S., and typical configuration of certain types of contracts); undetectable excessive concentrations of positions (UK, Singapore, U.S.); and insufficient powers of regulator or self-regulatory authority and speculation that is not disciplined by commercial market behavior. (**See Table 1 in the Appendix**)

Finding 1:

The regulatory framework for market oversight and contract design is critical to the relevant authorities' capacity to explain market performance, address market aberrations, and confirm that price discovery is consistent with supply and demand.

The thesis is as follows:

(1) Well-regulated and properly operated liquid futures markets can provide price discovery, permit risk management and, thereby, improve the broader cash markets.
(2) Effective risk management depends on proper price relationships between the futures and the cash market, liquidity and related low transaction costs.
(3) Liquidity depends on the integrity of the market and the perception of integrity.

It is, therefore, important that market operators and related regulatory authorities have:

(a) sufficient power to establish and exercise controls to protect the integrity of trading and the integrity of the prices produced through trading and
(b) the expertise to demonstrate the fairness of prices reported.

Futures markets require a resilient and well-understood regulatory framework, certainty as to the rules, algorithms and operation of the market, and expert oversight and management. Developmentally, futures markets require the legal and regulatory support to operate properly and it is typical of the developmental history of such markets that the legal framework supports market development, as well as proper operation.

Finding 2:

There is useful guidance on international best practices for contract design and market surveillance issues.

Why is regulation necessary?

- **Manipulation, fraud, fictitious transactions, or other abuses can harm the hedging and price discovery function of the market**
- **Financial or market disruption can cause substantial losses and can adversely affect pricing and revenues in the real sector thereby undermining beneficial effects**
- **Market/participant confidence and liquidity are a product of certainty that the rules of the game are fair and equitable and will not be changed midstream**
- **Ability to identify proper agents and to remove them if they misbehave promotes market credibility**
- **A proper framework signals that the market intends to meet international standards and that an appropriate oversight regime is in place**

Proper contract design and oversight protect price integrity. Regulators and market operators must be able to defend the integrity of prices made in the futures market.

International Guidance on Contract Design and Market Oversight

Some of the best particularized international guidance on appropriate oversight of commodity futures markets is contained in the Tokyo Communiqué adopted by 17 different regulatory jurisdictions in October 1997[2].

[2] This report reflected that "no other forum had [yet] addressed the international supervisory implications for market integrity and confidence in the markets for commodity contracts, which are based on an underlying physical commodity." While the

Contract Design Standards

The Communiqué articulates six elements of contract design to which exchanges and their regulators should follow:

- *A clear framework as to design and review criteria or procedures*, including regulatory power to address contract provisions that produce manipulative or disorderly conditions;
- *Ability to meet risk management needs of potential users* and/or to promote price discovery in the underlying reference commodity;
- *Appropriate correlation with the cash market and avoidance of impediments to delivery,* including review of historical patterns of production, consumption, seasonality, growth, market concentration, and domestic or international focus; sufficient price volatility, adequate availability of cash prices, and in the event of the existence of controls affecting the price or supply of the cash commodity, remaining volatility sufficient to support trading activity;
- *Reliable settlement and delivery procedures* that reflect the cash market and promote convergence (for cash settlement there also must be consideration of the timeliness of pricing information, the liquidity of the cash market and means to assess the reliability, integrity, and insulation from corruption of any reporting regime;[3])
- *Responsiveness to market users*;
- *Appropriate transparency;*
- *Instant Audit Trail; and*
- *Adequate power of the regulator to seek information and investigate spot market transactions.*

Contract design standards are described as a complement to and not a substitute for appropriate market surveillance. More intensive surveillance can compensate for certain types of design flaws.

Communiqué specifically refers to "non-financial physical delivery contracts of finite supply," the guidance is equally useful in evaluating futures markets generally against best practices.

[3] Recently in the US, the CFTC has brought multiple actions for the misreporting of energy prices to cash market indices.

Surveillance Standards

However well-designed, futures contracts require effective oversight and monitoring by parties empowered to address aberrations. The Communiqué guidance on surveillance indicates that authorities should have:

- A clear framework for market surveillance, compliance and enforcement activities;
- Access to information that permits them to identify concentrations of positions and the composition of the market;
- Suitable and speedy analysis and mechanisms adequate to market size and complexity to perform this;
- Adequate powers to investigate actual or suspected abuses and clarity as to what constitutes an abuse;
- Effective powers to intervene to prevent or address abusive practices or disorderly conditions and clarity as to types of interventions;
- Effective power to discipline market participants and clarity as to the types of possible disciplinary actions;
- Authority to address abuses by non-members (or subscribers), *i.e.,* customers;
- Cooperation as relevant with other domestic and international authorities to share information on large related exposures;
- Authority to oversee clearinghouse and exchange rules, regulations, and bylaws pertaining to position limits, daily price fluctuations, dispute resolutions, and emergency measures, such as the halt of suspension of trading.

Surveillance in Indian contracts which are physically delivered and cash settled focuses on the integrity of the cash price itself. This price is used to settle, based on market value; therefore, monitoring should extend to suspicious activities that could result in a spurious price. For example, authorities should review futures positions of significant size related to unusual cash market activities. They should also take care in evaluating the design of the cash settlement price reference. One question would be whether traders with large positions can affect the price index that is used to settle the derivatives contract. Another is how the reporting mechanisms deal with outliers. And, also, what further investigation should occur where a particular raporteur reports a price that is out of line with other reporters. Some users of the

markets are suspicious of cash reporting regimes and like some physical delivery to occur as a pricing discipline. Market issues can sometimes be addressed by reviewing contact design. *This is an area where India might concentrate infrastructure and oversight improvements.*

Objectives of Contract Design and Surveillance

Further guidance adopted by IOSCO is included in the Report of the Technical Committee entitled "The Application of the Tokyo Communiqué to Exchange Traded Financial Derivatives Contracts," published in 1998. This report outlines the objectives of market surveillance—*i.e.*, what the market authorities should seek to prevent:

- Intentionally causing or attempting to cause artificial pricing in the market;
- Creating a false or misleading appearance of active trading;
- Intentionally disseminating false or misleading market information;
- Creating a corner or squeeze;
- Abuse of customer orders;
- Wash trades involving no change of beneficial ownership; and
- Collusive trades that avoid exposure to the pricing mechanisms of the market, among other things.

All of the above activities must be under surveillance and deterred because they corrupt the integrity of the pricing risk management mechanism and cause users (and politicians) to lose confidence in the market. Thus, assurance of a proper framework, and the ability to communicate that it is effective and in place, helps to sustain confidence in the proper functioning of the market and belief that the prices formed there represent fair and equitable predictions based on a standard product and supply and demand. This framework is critical to explaining to political authorities how the market operates, and that it is operating properly. This is particularly important when the various constituencies are dissatisfied with the direction of prices.

Financial integrity is also critical to market reliability and the ability to contract anonymously. Information on market concentrations and exposures, on which side of the market they are concentrated, and on the financial capacity of the firms that hold them, are important elements of financial surveillance. *Credit enhancement is a critical feature of futures markets, and many*

market disruptions have been met by improvement of the credit arrangements and clearing arrangements of the marketplace and market participants. (**See Table 1 in the Appendix**)

Why is financial integrity a primary focus?

Futures are the contract rights to take delivery of a specified quantity and amount of commodity, secured by posting a small performance bond often referred to as margin—hence a small bond secures the obligation to pay gains and losses on a much larger amount. THUS:

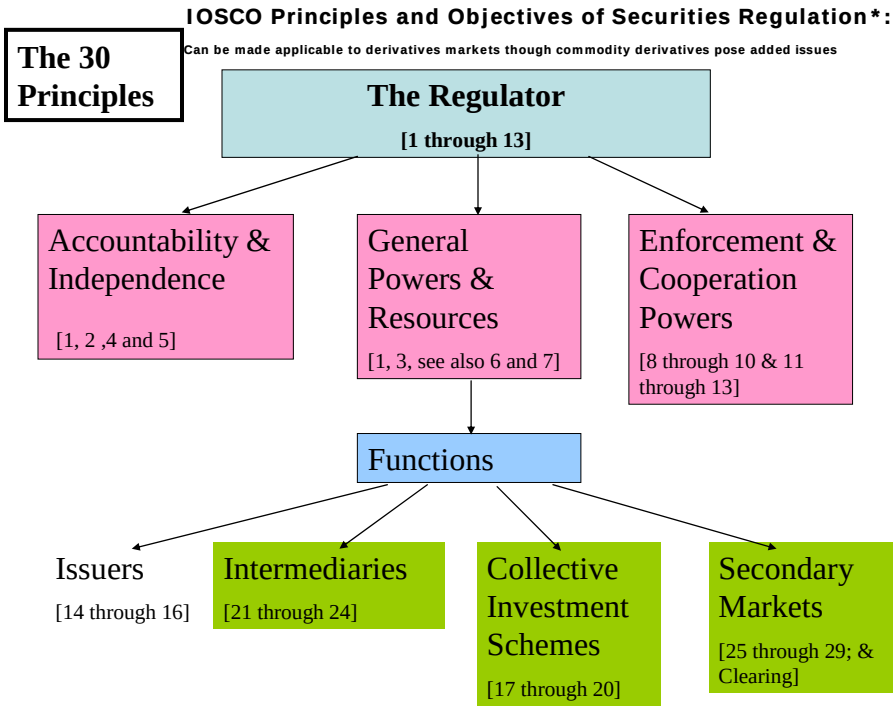
- **Clearing is critical to the operation of futures markets to assure that credit risk is minimized and market risk is appropriately collateralized against potential non-performance by a market participant**
- **Clearing arrangements usually use a central counterparty that removes credit risk by collection and payment of variation margin (the losses/profits) daily or more frequently and also relies on guarantee deposits and other resources or a common bond**
- **The legal and regulatory system must support the flawless operation of these arrangements as they are the basis on which anonymous counterparties are willing to transact from remote locations**

Generally, market and financial surveillance should be integrated, because trading abuses are often undertaken to try to obscure lack of funds. IOSCO has published a document entitled "Information Sharing Guidance," dated March 1998, that addresses core information that is useful to obtain in order for authorities to have the wherewithal to properly size and respond to market or financial disruptions.

Non-specific International Guidance

Beyond these elements of guidance, there are the IOSCO Objectives and Principles of Securities Regulation and the related Methodology that contain benchmarks for market operators and regulatory authorities more generally. And, the IOSCO and Committee on Payment and Settlement Systems, Recommendations for Central Counterparties, published in 2004, sets forth internationally agreed upon benchmarks for the performance of central

counterparty clearing. The IOSCO guidance with respect to regulators (Principles 1 to 13) and to secondary markets (Principles 25 through 30) is particularly relevant.



Finally, good resources against which to test markets are the Principles for Designated Contract Markets and the related guidance on these contained in the U.S. Commodity Futures Modernization Act of 2000, and Part 38 and 39 of CFTC rules and related Appendices.

One Example of a Principles-Based, Risk-Based Model with Emphasis on Market Accountability

The US Model

-7 Designation Criteria Capacity to prevent manipulation; fair and equitable rules and the capacity to investigate and discipline violators; rules for operation of platform and demonstration of performance in accordance with rules;capacity to provide financial integrity and clearng and settlement; establishment and enforcement of disciplinary procedures; provision of public access to rules and contract terms and conditions; ability to obtain and provide information, including information for international cooperation.

-18 Core Principles

Comply with core principles;enforce rules, prevent listing of contracts subject to manipulation;monitor trading for trading abuses and price distortions and settlement; establish and enforce position limits;establish rules to address emergencies; have resources to provide information to the public; disseminate price, open interest and Volume;provide open and competitive execution;maintain records of trading; have rules to address financial integrity and protection of customer funds;dispute resolution, fitness of governance;avoid conflicts;diversity of interests mutual board;retention of records; avoid unnecessary restraints of trade; rules to address improper acts by agents acting for customers.

Futher Compliance Guidance in Part 38 Commission Rules
Separate Core Principles for Clearing Arrangements

Source: www.cftc.gov

The Indian Experience

India had long recognized the benefits and the politics of futures markets since the Bombay Cotton Exchange in 1875. In the 1940s, however, futures trading was either outlawed or its usefulness was reduced by the introduction of various price controls. Originally, the role of the Forward Markets Commission in 1952, under the Ministry of Consumer Affairs and Food & Public Distribution, was to preclude any illegal trading of futures. However, during the mid-sixties trading in almost all commodities was prohibited on account of shortage of food and worry over speculation and hoarding of commodities. During the late nineties the prohibition was progressively lifted and in 2003 the government encouraged setting up modern electronic commodity exchanges. The subsequent development of the commodity markets in India has been phenomenal and has used sophisticated technology, rising within the last three years to

among the top three agricultural markets in the world in terms of volume and garnering the attention of investors such as Goldman Sachs and Fidelity.

Finding 3:

Cash market infrastructure matters: the ability to deliver commodities can discipline prices formed in the market and dispel suspicion about cash price polling regimes. Improvement of spot markets can contribute to overall economic improvement for subsistence farmers.

The Indian markets followed a sophisticated approach, using technology unburdened by legacy costs and demonstrating a deep understanding of the problems of planning crop production and of the need for an infrastructure to reach into the country itself—creating a micro-structure of finance—to disseminate and explain the benefits to the spot market now divided among over 7,000 local markets. At the same time, it is clear that the infrastructure of delivery, warehousing, market oversight, and dispute resolution can be materially improved.

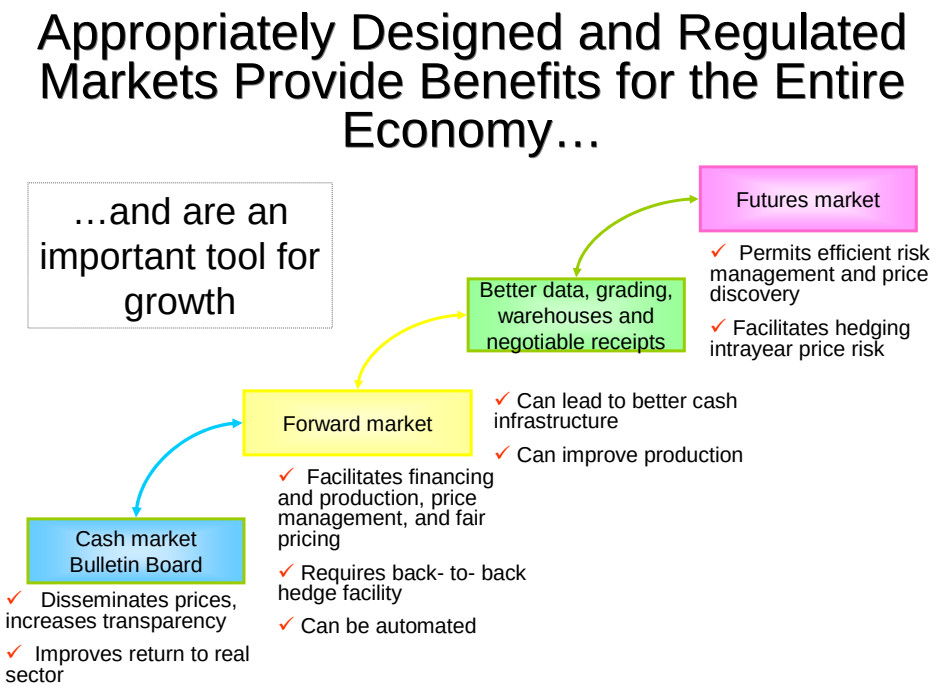
Two-way markets and market design

Experience also demonstrates that in a properly functioning market, prices cannot be the product of purely speculative activity. Market activity should be tethered to the actual capacity of participants to make settlement, and to commercial expectations based on cash market conventions, appropriate margining and other credit enhancement arrangements. Thus, in some emerging markets, a properly functioning futures market may require infrastructure improvements to the existing cash markets—and developers must consider local anomalies in evaluating cash market conventions and how to properly design standardized products.

For example, such improvements might include broader, more timely, dissemination of spot and futures prices, the terms of the contracts by which cash transactions take place, better facilities in which more confidence can be placed in grading and assaying of cash crops, dispute resolution mechanisms to resolve differences of opinions among contract counterparties, and the enhancement of delivery and storage mechanisms, such as accredited warehouses, inspection and insurance of the same and negotiable warehouse receipts and accountability arrangements for their exchange and bookkeeping. Indian markets seem well aware of these

factors and are vigorously pursuing them. In fact, the overall structure of the markets bears the evidence of these efforts.

Further, to provide sufficient liquidity, the markets depend on the reflection of two-way demand. In consequence, participants with different expectations and needs must participate. As the cash market disciplines the futures price, it is critical that all participants in the cash market chain have access to the futures product. It ordinarily is desirable, then, that institutions that provide financing, storage, farm management, processing, and other aggregators can act as conduits for the less sophisticated producers or middlemen. These institutions, in turn, can take steps to provide forward market risk management and use the markets as a back-to-back hedge against forward prices offered to the producer. (In some notions, it is the government itself that acts as an aggregator and buys, sells, stores, and hedges certain crops for farmers, often going to the international markets in the process.) This is also activity that can be further explored as an element of an overall agricultural policy as discussed below.



The question for market developers and regulators is how to achieve the integrity of the market that produces a futures price and convince the public of its proper operation. Confidence in the integrity of the market is critical to the risk management and production

planning benefits of futures trading for market participants, commercials and the economy, while addressing policies related to agriculture and food consumption more generally.

Finding 4:

Transparent, predictable agricultural policies relating to supply and price can co-exist with a successful financial market.

It is well to remember that, among types of markets, those addressing agricultural products are particularly sensitive to changes in political policy and raise special issues, which developers cannot afford to ignore. (**See Table 2 in the Appendix**) The U.S. futures markets developed at a time when the U.S. was largely dependent on agriculture and initially were regulated by the Commodity Exchange Authority, a Division of the Department of Agriculture. Futures markets are considered one of the great successes of the U.S. agriculture system, materially facilitating how the American agricultural system operates and its overall vigor. Today, the modern view is that futures, irrespective of the underlying commodity reference price, are really forms of financial products. Nonetheless, the development of successful indigenous agricultural markets has been the exception rather than the rule, and the Indian markets have been one of the exceptions. Oftentimes, it is not possible for a jurisdiction to develop sufficient liquidity, or there are multiple other possible hedging possibilities, such as over the counter or on international markets.

While properly functioning commodity futures markets can improve the merchandizing of grain and the planning of production, agriculture futures markets nonetheless typically retain a hint of suspicion. When the U.S. futures markets were comprehensively deregulated in the 2000 Commodity Futures Modernization Act, the agriculture community insisted that the reduced governmental involvement with futures contracts *not* be extended to agricultural products. A constant feature of futures market oversight in the U.S. has been the need to demonstrate an economic purpose for a contract to demonstrate that the market is “in the public interest.” This meant that the contract must have an economic purpose and be capable of being reliably used for hedging and price discovery, not just lend itself to speculative activity. Though the test was changed recently, it is still a feature of U.S. regulation that commodity trading can impact the real economy and its proper regulation is in the national public interest.

The CFTC still maintains heightened surveillance and monitoring activities with respect to the design and oversight of agricultural contracts. Further, the CFTC has on board specialist economists, for each type of contract traded, who are able to explain market conventions in that particular cash market, and its futures price consistency with cash market fundamentals, to the Commission, the Congress, media, and to the community. These economists would know the scope of the particular market and whether there were support programs or other programs domestically or internationally that could have an impact on pricing. Legislation under which the CFTC operates has always recognized the particularity of contracts relating to the differences among underlying reference prices. Bond markets do not operate, price, or trade the same way as copper markets. Commodity markets are unique.

The specialist economists at the CFTC directly monitor the market, particularly the delivery period, receive large exposure reports, discuss the intentions of large traders, and review the mechanism for determining prices if physical delivery is not used. Ordinarily, price limits exist in the agricultural markets to suppress prices overshooting before new supply or demand is reflected. Such expertise is useful in explaining the prices obtained in the markets to relevant stakeholders, especially farmers, but also including politicians and the media.

The Department of Agriculture (USDA) plays an important role in the cash market by disseminating information on stocks of grain and cash prices; and other authorities inspect, oversee, and provide special legal treatment to warehouses. The CFTC has express authority to know about warehouse stocks, and the exchanges certify warehouses for delivery so they have their own inspection rights. Ministry of Agriculture information is also useful to users of the futures markets. The USDA maintains multiple assistance programs for farmers that range from extension services to crop insurance to support subsidies in certain cases and, where there is a security issue, buffer stocks. It is typical for there to be special arrangements for dispute resolution outside the judicial system because of the need for speed of resolution of disputed matters. In the U.S., the markets are required by legislation to submit to customer arbitration, and various cash contract conventions have alternate dispute resolution procedures. In some jurisdictions, the agricultural ministry itself provides these services. In others, there are cash market trade associations that do so.

Many other factors can impact the success of markets, such as the effects of direct government intervention through embargoes, export controls, duties, etc. In some situations, a

product is deemed to be so politically sensitive that trading is not permitted, even though price dissemination would help plan crop production among other things. In the U.S., onion trading is prohibited by Statute—though onions are perishable and are not practical subjects of a futures contract in any event. Japan maintained a forward rice market in the 1600s, and saw a prosperous Osaka Rice Exchange. Today, however, the agriculture ministry that oversees agricultural futures does not currently permit commodity futures contracts on rice, though it reconsiders this prohibition from time-to-time, and the structure of regulation in Japan is changing. In Argentina, the Rosario exchange handles more than 70% of cash soybean trading, but the market for many years was largely a merchandizing, not a financial, market, notwithstanding that futures have been tried and are in the process of being re-established today. In the past, users found that the cash market was sufficient as structured for their current needs. And large commercials using "world commodities" may choose to hedge needs with lesser transaction costs in the international marketplace.

It is imperative for a country to coordinate its agricultural policies with those related to commodity market development in this area. Government hedging activities, purchasing collective activities, seed dissemination activities, inspection activities, and supply management activities are closely related to market success and/or failure. The U.S. Commodity Exchange Act expressly provides for such consultations, not only with the Department of Agriculture, but also with the U.S. Treasury and other government agencies with important responsibilities related to the underlying cash markets that are the subject of futures contracts. The CFTC website provides link, for example, to the Agricultural Research Service.[4] (**See Table 3 in the Appendix**)

Perhaps even more profoundly, very few agricultural markets have succeeded—perhaps because of the need for liquidity, perhaps for other structural reasons, among these, the changing policies and views of ministries committed to overseeing other political objectives. Financial markets have borrowed technology from the agricultural markets to support hedging and other risk management activities, following on the liberalization of interest rates and the suspension by most countries of exchange rate controls. Governments, however, continue to engage in monetary policy and open market operations related to meeting fiscal goals with respect to inflation and other objectives. These activities impact the financial markets and there are various theories as to how transparent and predictable the exercise of these policies should

[4] http://www.ars.usda.gov/main/main.htm

be. Perhaps it would be useful to give greater thought as to how macro-economic policies relate to agricultural futures markets.[5]

Finding 5:

Education, training, and communication between the markets, their users and other stakeholders, are critical.

In every notion with successful futures markets, these markets and related cash prices require constant explanation. It is, therefore, critically important that operators and regulators can explain how the markets operate to the community of users affected by its price discovery features, and can explain the relationship of wholesale and retail pricing—or, for example, that an element of the futures price is the "cost of carry," so a higher futures price does not necessarily mean a higher cash price. Positively the Indian commodity exchange operators invest significant sums in providing to the agricultural community information on how to use the markets and in improving the training and expertise of market participants, and market personnel. Similar educational efforts also can be directed profitably to the regulator and the political community that elaborates agricultural and other policies. In fact, many market events enable the use of "blue ribbon" panels of experts to make improvements that otherwise would not be possible absent the catalyst for change.

Conclusions and recommendations to consider going forward

Why, in the case of futures markets, does it seem that public opinion always wants to kill the messenger?

First, different market participants have different price expectations and, therefore, at any one time, there is always someone who is likely to be dissatisfied with the direction in which prices are moving in any futures market. Unlike securities markets, which have an upward bias, futures markets have different constituencies that favor *high* or *low* prices. This is why the markets can accommodate hedging activity. For example, producers who favor high prices for

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[5] See, *e.g.*, Chicago Council on Global Affairs, Report of the Agricultural Task Force, http://www.cfr.org/publication/11692/chicago_council_on_global_affairs.html?breadcrumb=%2Fissue%2F21%2Fnatural_resources_management
See also, Section 4p of the Commodity Futures Modernization Act relating to special Procedures to Encourage and Facilitate bona Fide hedging by Agricultural Producers.

their goods do not have the same price expectations as consumers who favor stable prices and low costs. The fact that there are both commercial buyers and sellers in any market permits a two-way market, and that is a good thing. The market must permit both production and consumption needs to be hedged, as this facilitates the formation of an equilibrium price, and liquidity, by helping to assure the market reflects both selling and buying demand.

Second, futures markets reflect price changes, and changes in sentiment, very rapidly and disseminate this information broadly to the real marketplace. The speed and breadth of dissemination is materially expanded by the advent of electronic technology. This is a good thing. The transparency of the prices achieved, *if properly understood*, should improve the ability to price and to plan production in the commercial market. This smoothes sensitivity of the cash markets to intra-year price volatility and year-on-year supply volatility. The emphasis on the words "properly understood," however, is advised because transactions in the country may not take place at the futures price, but at a premium or discount price based on location, delivery arrangements, and grade. And, there can be seasonal differences and cost of carry relationships that must be understood by the grass roots if the public and market users are to fully understand futures prices. The transparency and rapidity of changes in sentiment or supplies brings price news to market participants who in the past would not have had the barometer of future prices to refer to, or to blame. It is, therefore, critical that futures market settlement prices be reliable and explicable, that the expected premiums and discounts are transparent, and similarly capable of common understanding, and that the price "discovered" by the market is a valid price upon which economic and commercial price judgments can be made. It is also useful for the market operator (exchange) itself to disseminate information on the *basis* (the differential between the cash and futures) and the differences in projected prices to the public.

Finally, it may not be understood that the practice of hedging can only mitigate the effects of volatility and permit better management of production and consumption. It will *not* change the forces of supply and demand, or long downward pricing trends, or sharp spikes based on unexpected supply concerns. This means that development of economic policies related to domestic consumption and production, and their explanation, must accompany development of a market. This is why other policies, such as training, consumer/user education, communication with the public and within the government, and coordination among government authorities are essential.

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TABLE 1: MARKET EVENTS AFFECTING FAIR PRICING IN FUTURES MARKETS

Year of Event	Exchange	Type of Disruption	Policy Response	Public Response	Subsequent History
1937	Chicago Board of Trade (CBOT)	Corn—Cargill (a regional grain merchandizing firm) held futures contracts for delivery in the last old crop delivery month of more corn than available in Chicago and nearby. The price for nearby month delivery reached a premium of 75% over new crop corn available in December. The old corn crop had been devastated by drought but new corn was abundant.	CBOT imposed liquidation at a stipulated price; CBOT and CFTC brought charges of manipulation and conducted hearings; Cargill thought other large position holders should also be charged and challenged exchange impartiality.	Outcry	Further articulation of powers under the Commodity Exchange Act, first adopted in 1936.
October, 1985	London Metal Exchange (LME)	Collapse and suspension of International Tin Council (ITC) (representing 22 countries and the result of a treaty among producing and	Prior to default, LME acted to limit backwardation; rumors that US would release its tin stockpile; criticism that price support was unrealistically high. Upon collapse of ITC,	Metal trading in all contracts was down 30% due to fear that dealers would not be able to meet obligations on other contracts because of potential losses	The tin contract was not reintroduced until June 1989. In 1987 the Association of Tin Producing Countries (ATPC) introduced a supply rationalization scheme. ATPC's

Year of Event	Exchange	Type of Disruption	Policy Response	Public Response	Subsequent History
		consuming countries) buffer stock operation that supported prices through purchases of physical metal and LME forward contracts amounting to 2/3 of annual new production. Prior to default, there were accusations that buffer managers were hoarding stocks to push up spot prices. Claim one country flooded market with tin.	LME closed the market for over one week and froze prices/ton of tin; the price collapsed 40% resulting in 300 million Sterling in losses.	incurred in tin. Sellers statements that the handling of buffer was intended to manipulate the market and that the market might no longer be an acceptable hedging venue. Surprises to non-ring-dealing members about liability to their customers. Multiple reports. Development of central counterparty clearing for the LME. Litigation against ITC for breach of contract and misleading creditors about the extent of its exposure. Denial of claim to pierce corporate veil and treat country members of ITC as liable for its debts.	purpose was to absorb the huge tin inventories caused by cessation of the ITC buffer operations and to prevent further price declines. China, Malaysia, Indonesia, Thailand, Bolivia, Australia, Zaire and Nigeria were members in 1994 representing about 64% of world tin production. Brazil although not a member at the time cooperated with ATPC. ATPC terminated quota system in 1996 and became an information forum.
1986	Winnipeg Grain Exchange	Manipulation of canola contract.	Intervention by Royal Mounted Police; enforcement actions,		New legislation passed in the mid 1990s. Oversight of exchange

Year of Event	Exchange	Type of Disruption	Policy Response	Public Response	Subsequent History
			coordination with CFTC experts in analyzing trading, considering possible policy responses. Issuance of a government report and recommendations (not publicly available).		transferred from the Canadian Grain Commission, a Federal Authority, with no oversight powers, to the provincial securities regulator, the Manitoba Securities Commission, effective 2000. Effective December 2004, trading transferred to electronic trading platform, e-cbot—a Liffe Connect facility.
1987	Hong Kong Futures Exchange (HKFE) predecessor of Hong Kong Exchanges (HKEx)	Market wide (world wide) readjustment in cash equity markets. Default by losing futures index traders in Hong Kong who walked away from losses.	HKFE closed market in Hang Seng Futures Index on October 20 through 26. Orchestrated a government guarantee of US$ 250 million. When the market reopened, 43 broking firms were suspended for default. What amounted to a tax on equity trading was imposed to refund funds	A permanent guarantee was not set up until a year later; margin rules were tightened and a clearing subsidiary responsible for risk management was to be formed. This occurred still later in 1989. The market took at least four years to recover.	Reintroduced after major reforms. The market has been remarkably successful in recent years, but still has to determine how to structure itself for the future in regard to its relationship to the Mainland.

Year of Event	Exchange	Type of Disruption	Policy Response	Public Response	Subsequent History
			extended by the government to resolve default. The Hong Kong government also obtained resignations from all members of the Exchange Board.	Litigation ensued and the validity of contracts was questioned under a 1710 gaming act. Some questioned also the ability of the underlying market to support futures trading.	
1989	Chicago Board of Trade (CBOT)	Manipulation in soybeans. Italian processor, Feruzzi, attempted soybean corner. Identified by exchange surveillance staff and CFTC based on finding costlier to obtain supplies via exchange delivery than through other means. July futures traded at $7.26 a bushel, compared with $6.90 for August, $6.64 for September, and $6.51 for November.	Exchange intervention: CBOT orders Feruzzi to liquidate July positions; Enforcement action by CFTC for manipulation resulting in fine of US$ 2 million. Legislative response: Congress requires CFTC to address conflicts by submitting review of Exchange emergency action reports to Congress and adopts specific legislation on exchange conflicts requiring disclosure of voting member positions among other things.	Farmer association's lawsuit against the CBOT under anti-trust law protesting liquidation ruling (claiming lowered prices to advantage of exchange shorts). Other litigation claimed exchange decisional body conflicted. Congressional request for CFTC analysis of voting on liquidation order as to possible conflicts of interest of Board members, who voted or participated in exchange action.	Farmers view that anti-trust law is not pre-empted by CFTC permitting exchange emergency action to go into effect is confirmed, but farmers do not prove liability of exchange for abuse of market power as they cannot demonstrate price effect of action taken. Statutory changes adopted in 1993, but exchanges try to avoid taking emergency actions and Commodity Futures Modernization Act of

Year of Event	Exchange	Type of Disruption	Policy Response	Public Response	Subsequent History
		Feruzzi was unable to "bury the corpse" (i.e., to sell its accumulated soybeans at a profit) and lost US$ 17 million.		Change in statute.	2000 removes specific conflict provisions in favor of a general Principle. CFTC in 2007 adopts stronger policy on exchange conflicts and governing Board composition.
1989	New Zealand Futures Exchange (now New Zealand Futures and Options Exchange — NZFOE)	Manipulation and Margin Default on 5-year government bond positions; 18000 of 25000 open positions on government bonds were uncovered shorts and there was 20-25 point differential between futures and physicals. Jordan Sandman Futures failed to meet margin call; Westpac position also unwound; allegations of fraud.	NZE suspends trading rights of Jordan Sandman on November 21 and suspended all trading on November 22. ICCH in London invoices back trades to settlement immediately prior to default. Under rules, positions are closed out at defaulting firm on a pro rata basis against holders of opposite positions without regard to offsetting positions in related markets. Bond trading shut down. Additional bonds were issued, i.e., the defaulted futures issue	Two reports were issued. The New Zealand Commission conducted an inquiry and published a report with recommendations in November 1990. "Report of the Securities Commission on its Enquiry into Trading in the Five Year Government Stock No. 2 Futures Contract on the New Zealand Futures and Options Exchange in 1989." That report	Interpol investigation; rule changes including rules relating to client assets, exchange governance, and clearing. In 2004, NZFOE products moved to Sydney. Futures trading did not recover.

Year of Event	Exchange	Type of Disruption	Policy Response	Public Response	Subsequent History
			was reopened by Ministry of Finance with input from New Zealand Debt Management Office and Reserve Bank of New Zealand. Orderly cash trading restored.	recommended a further inquiry into the practice of "dual trading." A discussion paper on that practice was published in July 1992.	
1995	SIMEX, predecessor to the Singapore Exchanges. Also UK LIFFE, Tokyo Financial Futures Exchange, and Osaka.	Singapore-based rogue trader employed by Barings, LLC, a London merchant bank, disguises nature of Nikkei Index trading to exchange and parent; doubles up when market configuration changes and incurs huge losses. Barings default followed by freezes on positions and a threatened administration proceeding; US$ 300 million of brokers funds and related positions frozen pending ad hoc	SIMEX announced that new margin posted to exchange would not be used to settle default restoring confidence in orderly management of the situation; but positions frozen in Tokyo, Osaka, and Singapore, while parties negotiated transfer arrangements. White Knight, ING, bought Barings liabilities, resulting in transfer of frozen positions. Government commissioned study in UK and in Singapore; CFTC and London SIB convened international	Much reduced trading; request for clarification of CFTC rules related to segregation of funds held through a foreign broker. Endless recapitulation of story.	Improved intermarket cooperation mechanisms, including the Boca Declaration, the first multi-lateral arrangement among regulators to share information on certain large exposures, and cross border stress testing. More than 90 clearing organizations and exchanges are now members of the private sector agreement and the Boca Declaration has 28 counterparties.

Year of Event	Exchange	Type of Disruption	Policy Response	Public Response	Subsequent History
		arrangements to transfer funds and avoidance of actions by authorities to freeze futures positions and funds supporting them — causing uncounted related losses.	regulators meeting resulting in Windsor Accord; Industry Financial Integrity Report commissioned and issued by Futures Industry Association. Multiple government reports. Negotiation and execution of Boca Declaration and the companion International Exchange and Clearing Organization Memorandum of Understanding, signature of which is a condition of membership in the largest trade association, the US Futures Industry Association.		
1994 and 1995	Shanghai Futures Exchange and other	Trading irregularities known as the 314 incident and the 327 incident occurred.	Trading was suspended by the CSRC in May 1995, and on the 31st of May, the 14 exchanges	Loss of confidence. Initiation of internal and external studies of how to reform futures	In 1994 the number of exchanges in China was reduced to 14, then again in 1996 they were

Year of Event	Exchange	Type of Disruption	Policy Response	Public Response	Subsequent History
	markets, including Beijing Commodities Exchange, Wuhan Securities Exchange, Guangzhou Stock Exchange and Shenzhen Stock Exchange.	These involved illegal transactions exceeding established limits in government bonds; and "excessive speculation" untethered to economic realities. Some reported that there was wild speculation on the subsidized interest rate.	then offering bond futures trading closed out their positions ending the pilot program. No trading in government bonds has resumed to this date. After the bond contract was discontinued, trading limited to physical commodities and was redistributed to five and then three markets. [There were two governmental general rectifications: In the First Rectification, the number of exchanges was reduced from 40 to 15, 20 contracts were delisted, and futures brokers were licensed reducing number by 70%. CSRC formed in 1992 received expanded powers. The First Rectification was	legislation; with some reforms still pending. The Interim Rules Governing Futures Bond Trading were not effective until more than two years after trading was launched and later rules, including an Emergency Notice on Strengthening the Regulation of Bond Futures Trading, to respond to the incident were not part of a holistic framework. Margins were standardized and toughened.	further reduced to five, and prior to the opening of a second exchange in Shanghai to address financial futures, the markets had been reduced to three that traded solely in commodities. Banks were banned from trading futures and state run enterprises were to limit their trading (which could be on foreign markets) to products relevant to their businesses for hedging. CSRC has announced that a futures market in equity indexes will officially open this year; pilot trading now occurring. CSRC is restudying the components of a sound market for bonds; the new law however is not currently accessible.

Year of Event	Exchange	Type of Disruption	Policy Response	Public Response	Subsequent History
			announced with a Notice of Firmly Curbing the Blind Development of the Futures Market. The Second Rectification in 1998 closed 11 of the 14 exchanges that survived the first round, bringing the number down to today's three: The Shanghai Futures Exchange, the Dalian Commodity Exchange, and the China Zhengzhou Commodity Exchange. Contracts were cut back further to 12 from 35, and more brokers were closed, leaving just 175 standing from the early 1990s peak of 1,000. Margins were standardized and regulations further toughened. Trading on foreign futures exchanges was further		The settlement reserve was nationally licensed.

Year of Event	Exchange	Type of Disruption	Policy Response	Public Response	Subsequent History
			restricted to a small number of large, global entities.		
1996	London Metal Exchange (LME)	Rogue trader from Sumitomo, a Japanese commercial international company, in copper contracts threatens default. LME price in London was at a premium over the Comex price in NY drawing stocks from Comex-designated warehouses to LME warehouses. Artificial prices were alleged to also occur throughout the relevant cash market.	Immediate assumption of management of book by lead broker with acquiescence of regulatory authorities. Orderly liquidation; investigation of warehouses located around the globe. Multiple government and exchange reports on the facts of the market event, the LME practice of maintaining historic trade dates and the sufficiency of UK regulatory oversight powers. Collaboration by UK, Japanese, and US regulators on global policy response: London Conference and Tokyo Communiqué relating to the surveillance and oversight of physical	NYMEX requested legislation with respect to oversight of warehouses specified for foreign delivery (on the LME) located in the US. The scandal was rumored as resulting in US $4 billion of losses manipulation. Some still allege today that copper contract terms permit corners or squeezes at LME, the world's premier exchange for non-ferrous metals.	Enhanced powers for UK regulator and the beginning of the end of what was termed "self regulation" at the time. Addition of Japan to the Boca Declaration; no US legislation but legislative hearings. International cooperation in developing common high level definitions of market abuses. Amendment of Boca Declaration to add accumulation of unusually large positions in the market as a basis for information sharing. Enumeration of core elements of information that should be maintained and shared with respect to a market

Year of Event	Exchange	Type of Disruption	Policy Response	Public Response	Subsequent History
			futures contract of finite supply; exchange review and development of new arrangements to publicize availability of deliverable supply. CFTC enforcement action for manipulation: This resulted in the largest civil penalty (US$ 150,000,000) ever received at that point by a US regulatory authority.		event, adopted by IOSCO. Warehouse MOU relating to sharing of information on commodity stocks executed between UK markets, UK FSA, and the CFTC.
1996	Philippines	Massive fraud on the Manila International Futures Exchange perpetrated on customers, in various products. Fictitious trading reported to be in agricultural commodities.	Trading suspended by the Philippine Securities and Exchange Commission. Expert reports commissioned, funded by donor agencies. These reports questioned the viability of the domestic trading in the various products offered on the Philippines Exchange suggesting better alternatives existed in	The exchange remains closed to this day.	Subsequent reviews have been commissioned. It is possible that a market in copra might exist and it is also possible since 1996 that the availability of electronic technology would make niche market or electronic spot market possible.

Year of Event	Exchange	Type of Disruption	Policy Response	Public Response	Subsequent History
			world market for commodities such as raw sugar, and that as Philippines was a net importer of rice and corn, it should explore use of international hedging markets.		

TABLE 2: SELECTED AGRICULTURE MARKETS AND PRODUCTS

Exchange	Date Formed	Products	Regulator	Exchange Governance	Agricultural Support Programs
Agricultural Exchange of Thailand — AFET www.afet.or.th/english	May 28, 2004	Rubber (first contract) Latex Tapioca chips White Rice (listed August, 2004; revised to buyer's option of cash or product for delivery 2005; increased size from 5 to 15 metric tonnes, and added delivery points, 2006).	Agricultural Futures Trading Commission (AFTC) established in 2001 under Agricultural Futures Trading Act.	Formed by the Ministry of Commerce.	Price supports exist for rice that were very generous under the previous government; there is speculation that these will be lowered. New rice strategy introduced March 2007. No details on websites.
Brazilian Mercantile & Futures Exchange — BM&F (Brazil) www.bmf.com.br	Mercantile & Futures Exchange (BM&F) founded July 1985. Trading began Jan 31, 1986. May 9, 1991, BM&F signed an operational agreement with the São Paulo Commodities Exchange (BMSP). June 30, 1997,	Sugar Anhydrous fuel alcohol Arabica coffee Robusta coffee Real-denominated corn Soybean Live cattle Feeder cattle.	The BM&F is regulated by the Brazilian Securities and Exchange Commission or Comissao de Valores Mobiliarios (CVM); and for clearing the Central Bank.	The BM&F is a private, mutual, not-for-profit association whose activities are governed by civil legislation and specifically applicable rules. The rules provide for agricultural commodities local	Currently no supports; there may be subsidies in certain cases.

	another operational agreement took place, this time with the Brazilian Futures Exchange (BBF) of Rio de Janeiro, which was founded in 1983. On August 29, 2002, BM&F launched the Brazilian Commodities Exchange and opened for trading on October 22, 2002. On January 29, 2004, the Central Bank of Brazil granted commodity and futures exchanges the right to constitute commercial banks for settlement and custody; the BMV Settlement Bank commenced operations November 30, 2004.			(non-equity) memberships that permit their holders to trade only in agricultural commodity markets.	
Bolsa Cereales (Buenos Aires Grain Exchange)	May 15, 1854. This market is largely	Wheat Corn Sunflower seeds	Ministry of Agriculture	A mutual market.	A minimum price used to be fixed by the Arbitration Chamber

(Argentina) www.bolcereales.com.ar	a cash market.	Soybean			within the exchange.
Mercado a Termino de Buenos Aires SA — MATba (Argentina) www.matba.com.ar	Within the Bolsa Cereales. The Mercado a Término de Buenos Aires S.A. (the Buenos Aires Forward Market) was founded in 1907.	Flaxseed Wheat Corn Oats—spot and futures	Commision Nacional de Valores (CNV)	Not-for-profit, pit-based exchange. Only shareholders who are also members of the Grain Exchange can participate.	
Bolsa de Comercio de Rosario (Rosario Board of Trade) — composed of Mercado Fisico de Granos (physical market); Mercado a Termino ROFEX (futures and options) , and the Mercado de Valores (MERVAL) (all classes of negotiables)	Aug 18, 1884. The most important market is the physical market in grains. Almost 80% of edible oils are processed in Argentina, with soy the most important product.	Trigo (Wheat) Maíz (maize) Sorgo Granífero (sorghum) Avena (oats) Soja (soybean) Girasol (sunflower seed) Lino (linen) Mijo (corn) Dólar (US), Euro, Real (Brazil), Boden 2012	Commision Nacional de Valores (CNV)	A mutual exchange. Most contracts are traded electronically using an Internet based system. The market uses a system of guarantees and payments of differences pending deliveries. The exchange provides a dispute resolution system, as does the General Court of Arbitration.	Between 1946 and 1955 due to increasing government intervention, the State took over the monopoly of grain transactions halting all free-market operations including futures transactions.

(Argentina) www.rofex.com.ar					
Dalian Commodity Exchange — DCE (China) www.dce.com.cn	February 28, 1993.	Listed futures products are on-genetically modified soybean, or Soybean No.1, genetically modified soybean, or Soybean No.2, Soybean meal soybean oil Corn (2nd largest corn futures in the world), and Malting barley	China Securities Regulatory Commission (CSRC) under State Council; rules not available in English—just a general description on the website of the CSRC. In practice, the CSRC won't approve a product unless a consensus has been formed by the State Council and almost any ministry or commission that has some interest in the product. For some products that means over 10 ministries and commissions have to weigh in before a new contract gets a green light.	Non-profit, futures exchange authorized by the China Securities Regulatory Commission ("CSRC"), registered with the State Administration for Industry & Commerce, and subject to the supervision and governance of the CSRC. Government ownership and officials participate in operation.	Prices in the cash market can be adjusted by government Decree.
Shanghai Futures Exchange —	December 1999.	There are four contracts:	Formed under the "Interim Regulations	The SHFE is a self-regulated, non-profit	

SHFE (China) www.shfe.com.cn	The SHFE originated from the merging of the Shanghai Metals Exchange, the Shanghai Cereal and Oils Exchange, and the Shanghai Commodity Exchange.	Copper Aluminum Natural rubber Fuel oil.	on Administration of Futures Trading" and "Measures on Administration of Futures Exchanges" and regulated by the China Securities Regulatory Commission (CSRC).	organization, providing the place, facilities and services for the centralized trading of futures contracts. The Members' Meeting is the SHFE's power organ and constituted of all members. The Council is the standing entity of the Members' Meeting, and it governs the following seven specialized committees: Compliance Committee, Transaction Committee, Delivery Committee, Membership Committee, Arbitration Committee, Financial Committee, and Technology Committee.	

				In a futures exchange, the general assembly of members is the highest authority, and the board of governors is the executive body, whose chairman and vice chairman are nominated by the CSRC and elected by the board. The CSRC is entitled to appoint and discharge the general manager of an exchange.	
Zhengzhou Commodity Exchange — ZCE (China) www.czce.com.cn	The first experimental futures market approved by the State Council was established on October 12, 1990. It introduced futures trading on May 28, 1993.	Wheat Cotton Sugar Mung beans PTA (pure teraphthalic acid)	China Securities Regulatory Commission (CSRC). In October 1992, the State Council Securities Committee and its executive arm, the CSRC, were established, mandated to regulate China's securities and futures markets.		

			In 1998, the State Council Securities Committee terminated operation and its functions were transferred to the CSRC, which became the sole regulator supervising nationwide securities and futures markets. The CSRC is now one of the 14 organizations directly under the State Council.		
Jakarta Futures Exchange — JFX (Indonesia) www.bbj-jfx.com	PT. Bursa Berjangka Jakarta was established on August 19, 1999 by 4 palm plantations, 7 refineries, 8 coffee exporters, 8 securities companies and 2 general traders; it opened December 15, 2000.	The first two contracts: Olein Futures contract and Robusta Futures contract will be followed in due time by Cocoa Futures, Pepper Futures, Rubber Futures, and Plywood Futures. Options on Futures and Financial Futures will be considered later. Olein (EFP permits	The Commodity Futures Trading Commission (Bappebti) is an independent national regulatory agency responsible for the regulation and supervision of all futures trading in Indonesia.	December 5, 1997 as Act No. 32/1997 (Commodity Futures Trading Act).	Changing policies have affected the continuity of market development.

		transfer of different grades such as : Crude Palm Oil (CPO), Refined Bleached and Deoderized Palm Oil (RBDPO) and Refined Bleached and Deoderized Stearin (RBD Stearin) palm oil.			
Tokyo Grain Exchange — TGE (Japan) www.tge.or.jp	The Tokyo Grain Exchange originates from the Kakigaracho Rice Trading Exchange, established in 1874 by a group of the Chugai Shoko Kaisha. The Exchange then changed its name to the Tokyo Rice Trading Exchange, the Tokyo Rice Exchange and, in 1908, to the Tokyo Rice and Commodities Exchange. In July 1939, the Exchange	The exchange lists futures, options on futures and cash settled futures, the agricultural products (Soybeans, Azuki Bean, Corn, Soybean Meal, Coffee, Raw Silk and Vegetable), and the sugar products (Refined and Raw), along with providing trading facility for selected physical products.	Ministry of Agriculture, Forestry and Fisheries (MAFF).	A December 21, 2004 ordinance stipulated the date for enforcement of the Law to Amend the Commodity Exchange Law (promalgated May 12, 2004; Law No. 43), as detailed in Annex Article 1.3 of the 1950 Commodity Exchange Act. Also, JCCH Japanese Commodity Clearing House formed December 24, 2004.	No futures currently permitted on rice under a rice production adjustment policy pursuant to the 1994 Law Concerning the Stabilization of Supply, Demand and Price of Staple Food, which was originally to have expired in 2001. The TGE requested to reopen rice contracts at a public hearing in 2006.

	was forced to close. It was not until September 1952 that the Exchange was reestablished as the trading facility listing futures contracts on agricultural commodities, in response to the government lifting the policy of grain control in the previous year. It opened October 10, 1952.				
New Zealand Futures and Options Exchange — NZFOE www.nzfoe.co.nz	Purchased by Sydney Futures Exchange (SFE) in 1992, transferred trading in all products to Australia platform in 2004 and arranged for trading on SFE products based on NZX-listed (New Zealand Securities Exchange-listed) securities. SFE regulated by ASIC (Australian Securities Investment	National Securities Commission (NSC).	Financials and options on NZX securities listed on SFE. Apparently, no current agricultural products but corn and wine coming. NZFOE products are regulated under New Zealand law — the Securities Amendment Act of 1988 and Futures Industry Client Funds regulation of 1990.	In 2006 shares in SFE exchanged for shares in Australia Stock Exchange. ASX wholly owns SFE, SFE Clearing, and Australclear.	

	Commission).				
Sydney Futures Exchange (Australia) www.sfe.com.au	1960	Wool Cattle	Australian Securities Investment Commission (ASIC).	Sydney Futures Exchange and the Sydney Futures clearing organization are wholly-owned subsidiaries of the Australian Stock Exchange, a company listed on the Australian Stock Exchange.	Wool (from 1972) had a minimum floor or buffer price resulting in grower-financed stockpile of unsold wool, to have been phased out by 2000.
Futuros de Citricos y Mercaderias de Valencia (Citrus Fruit and Commodity Market of Valencia) — FC&M (Spain) www.bolsavalencia.es	First contracts: September 8, 1995 and January, 1996. Grew out of an initiative of the Valencia Stock Exchange, the Generalitat Valenciana, and the Chamber of Commerce and Industry of Valencia in the late 1980's. The Foundation of Stock Exchange and Financial Studies was founded in April 1990 to study the feasibility of a	Orange juice Navel-navelina oranges Olive oil	CNMV	Mutual market, using an electronic trading platform. Volume not very significant.	75% of national production in Valencia and Spain a major citrus fruit producer world wide and a top exporter of fresh fruit.

	commodities market. The French MATIF studied a format for the market. Then an arrangement was signed with the MEFF Renta Fija for technical support.				
Hannover Terminboerse(Germany) (Now RMX Hannover—Risk Management Exchange) (Germany) www.wtb-hannover.de	Late 1990s	Hog (piglets) index Potatoes and Grain RMX is cash settled	Lower Saxony State. Economic Ministry — Boersenaufsichtsbeh oer de fuer die niedersuechsiche Boerse zu Hannover.	Mutual market Various State Chambers of Agriculture operate price reporting.	
Bursa Malaysia Derivatives (Malaysia) www.klse.com.my	The Malaysia Derivatives Exchange (MDEX) was formed in June 2001 after merger of Kuala Lumpur Financial Futures and Options Exchange (KLOFFE), the Commodity and Monetary Exchange	Crude palm oil Crude palm kernel oil Ethylene The most active contract is crude palm oil. All contracts are settled in cash except for crude palm oil.	Malaysia Securities Commission. and the Minister of Finance.	Wholly-owned subsidiary of Bursa Malaysia, which from 18 March 2005 has been listed on the Main Board of Bursa Malaysia Securities Berhad. The Exchange offers clearing, settlement	The Securities Commission published a general capital markets development plan.

	of Malaysia (COMMEX). MDEX was a subsidiary of the Kuala Lumpur Stock Exchange (KLSE), which was formed in 1976. The Bursa Malaysia dates from 2004.			and depository services through Bursa Derivatives Clearing and Bursa Depository (the central depository for securities listed on the Securities Exchange.) The Malaysian Palm Oil Board provides statistics on crude palm oil as does the Malaysian Palm Oil promotion council.	
Singapore Exchanges (Singapore) www.ses.com.sg JADE: www.jadeexchange.com	1984. The SGX was inaugurated on 1 December 1999, following the merger of two established and well-respected financial institutions — the Stock Exchange of Singapore (SES) and the Singapore International Monetary Exchange (SIMEX).	Crude Palm Oil TSR 20 Rubber	Monetary Authority of Singapore		Government has the ability to participate and affect pricing.

	New commodity platform is known as JADE (Joint Asian Derivatives Exchange) and new products will be hosted on the CBOT electronic trading platform, powered by LIFFE CONNECT®. All trades will be cleared by the SGX derivatives clearing house.				
Euronext-liffe (UK, et al.) www.euronext.com/home_derivatives-2153-EN.html	For example, the French commodity exchange was combined with MATIF by law of December 31, 1987 and a prior commodity commission disappeared. In January 1988, Conseil du marché a terme (CMT) had charge of member admission and discipline; COB had market surveillance	Coffee Sugar Cocoa Corn Rapeseed Wheat On liffe and Paris — MATIF now under Paris Bourse.	UK Financial Services Authority. Other related authorities constituting college of regulators of federation of markets using the Euronext platform, as appropriate if traded through their portals. These include Amsterdam, Belgium, France and Portugal.	Wholly-owned subsidiary of NYSE-Euronext Group listed on Paris Bourse and the NYSE.	

	and some powers as over stock exchange. In 1996, CMT and COB roles were merged as Conseil des marchés financiers (CMF) and COB continued as regulator. In 2003, the AMF was formed by the merger of COB and CMF. AMF does international information sharing and market supervision. Intermediaries supervision is by the Commission Bancaire.				
Winnipeg Commodity Exchange (Canada) www.wce.ca	May 14, 2004; voted change as of Dec 2004. to e-cbot® trading platform powered by LIFFE - Connect®.	Canola	Manitoba Securities Commission as of 2000, subsequent to adoption of new legislation that provides powers to oversee the market. Previously regulated by the Canadian Grain Commission, a Federal authority	All electronic. Mutual exchange.	No supports.

			without any regulatory powers.		

TABLE 3: Cochran Fellowship Program
Potential Training Topics for 2007

Agribusiness
Agribusiness Development and Marketing
Contract Farming
Cotton Purchasing
Grain Procurement Management
Grain Purchasing
Risk Management
Women in Agricultural Leadership

Agricultural Cooperatives/Credit and Financing
Agricultural Credit and Financing
Agricultural Coop Management and Development

Animal Health
Animal Disease Control
Animal Disease Surveillance
Animal Health/Risk Assessment
Animal Identification and SPS Issues
Animal Laboratory Diagnosis
Avian Influenza/Wild Bird Management
Domestic Veterinary Epidemiology
Foreign Animal Disease Diagnostic
Good Laboratory Practices Animal Health
Quarantine Inspection and Customs
Veterinary Biologics
Veterinary Inspection/Border Control/Testing

Agricultural Market Information and News
Agricultural Information Pricing and Reporting
Agricultural Market News
Market Information and Standards

Agricultural Policy
Agriculture Trade Policy
Agriculture WTO Policy and Trade
Crop Insurance and Risk Management
Fumigation and Quarantine Treatment
Government Planning, Economics, Statistics and Information Systems

Import Export Procedures
Intellectual Property Rights
Project Administration and Procurement Practices
School Feeding
Tariff Rate Quota Regime
Trade Policy
Trade Policy Development

Agricultural Statistics
Agricultural Statistics and Remote Sensing
Crop Analysis
Statistical Analysis

Bioenergy/Renewable Fuels
Ethanol Production
Ethanol/Biofuels Development
Renewable Fuels
Use of Biodiesel

Biotechnology
Agricultural Biotechnology
Biosafety
Biotechnology Training Design

Food Safety
Animal Origin Product Safety
Fish Safety and Quality
Food Regulatory Standards
Food Safety - Applied
Food Safety Laws and Regulations
Food Safety Management (ISO 22000/HACCP)
Food Safety Policy
Food Safety Risk Analysis
Food Safety Risk Assessment
Food Testing Quality Systems (ISO 17025)
Good Laboratory Practices-Food Microbiology
HACCP Certification
HACCP Plan Validation and Verification
HACCP Practices and Policies
Health Certification and Food Safety
Institutional Food Safety/Nutrition

Meat and Poultry Inspection
Predictive Microbiology
Residue Levels in Food
SPS Notification Authority and Enquiry Point
Thermal Processing
Wheat Phytosanitary

General Technical Assistance/Research

Aquaculture Development
Aquaculture Policy Development
Citrus Greening
Cocoa Pod Borer Research Management
Construction of Oak Barrels
Male Sterile Mediterranean Fruit Fly Control
Seed Production
Soy Product Development and Nutrition

Grades and Standards

Dry Pea and Lentil Grading
Grades and Standards for Crops

Grain and Feed

Feed Formulations and Record Keeping
Feed Technology and Nutrition
Feed Use, Policy and Regulations
Grain Policy Development
Post Harvest Techniques for Corn Producers
Post Harvest Techniques for Dry Beans

Infrastructure Development

Agricultural Organization Management
Agriculture Extension and Irrigation
Cold Chain Development
Grain Handling and Port Operations
Post Harvest Management/Cold Chain
Rural Development

Livestock Production and Management

Beef Traceability
Dairy Genetics
Dairy Herd Management

Dairy Improvement
Dairy Nutrition and Management
Dairy Processing
Dairy Reproduction and Management
Embryo Transfers
Livestock Genetics
Poultry Breeding and Processing
Quality Management of Livestock and Poultry
Swine Industry Development
Swine Production and Management
Veterinary Management and Development

Marketing

Best Practices in Modern Retail Systems
Candy and Confectionary
Culinary Arts
Dehydrated Potato Marketing and Handling
Distilled Spirits
Fish/Seafood Processing and Marketing
Food and Bakery Ingredients
Food Retail
Fruit and Vegetable Processing and Marketing
Lumber Grading
Olympic Chefs Training - Culinary
Organic Production, Certification and Marketing
Produce Marketing and Handling
Restaurant Management
Seafood Retail and Marketing
Softwood Design and Application
Supermarket Management
U.S. Hardwood Quality and Standards
Wine and Food Pairing
Wine Merchandising and Marketing

Natural Resources Management & Environmental Quality

Botanical Garden Design and Education
Forest Surveying
Forest Inventory
Forest Policy Development
Nursery, Greenhouse Development, Landscaping
Soil conservation

Watershed Management
Waste Water Management
Water Management

Pesticide Residue
Chemical and Microbiological Residue Analysis
Good Laboratory Practices-Pesticide Residues
Pesticide Residue Analysis

Plant Health
APHIS Pest Databases
Development of Plant Health Regulations
Good Laboratory Practices for Plant Health
Integrated Pest Management
International Plant Protection and Risk Analysis
Pest Risk Assessment
Plant Protection

Processing Technologies
Bakery Ingredients Technology
Dairy Dessert Processing
Development of Food Products of Celiacs
Extrusion Processing
Food Ingredients Quality and Use
Food Technology
Frozen Dough/Baking Technology
Pasta Raw Materials and Processing Technologies
Sausage and Meat Processing
Soybean Processing
Use of Soy in Food Processing
Vanilla Science and Technology