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The International Market for Agricultural Insurance

USDA's Agricultural Outlook Forum

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Background and Importance



Canola field, Saskatchewan, Canada



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Background and Importance

- Agriculture plays an important role in feeding the planet.
- Promote policies that aim to:
 - End hunger
 - Achieve food security
 - Improve nutrition
 - Promote sustainable agriculture



Background and Importance

- How do we drive increased productivity and stability in the agriculture and food sector?
- Agricultural insurance plays a critical role in the stability and growth of the agriculture sector.
- Helps to reduce the negative impacts of natural catastrophes.
 - Effective risk transfer
 - Encourages investment in improved technology
 - Helps to secure loans.



International Comparison

- The overall level of government support, and the extent to which support provides a market distorting effect, varies widely across countries.
- Trend toward reforming domestic agricultural policies to reduce support through output-related measures in order to let markets increasingly determine agricultural production.
- The commitment of agricultural support on countries' economies has generally declined, but, public support is still important for the agricultural sector in many countries.
- In general, the level of support to producers in the OECD area and emerging economies is converging



Agricultural Insurance - Canada



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- AgrilInsurance program differs substantially compared to the U.S. model.
 - Unique partnership between provincial and federal governments and private sector.

Pre 1990's

Commodity specific to stabilize prices and farm income.
Major ad-hoc payments led to high budgetary payments.

1990's

Established safety nets based on whole farm support at federal level.
Major provincial commodity specific programs remained.

1996

Elimination of western grain transportation subsidy
reduced price support for wheat and barley..

2003

Agriculture Policy Framework (APF) introduced longer-term risk management programs.
BSE crisis led to higher budgetary payments

2009

Growing Forward (GF) expanded risk management programs with BRM suite.
Maintained budgetary support.

2013

Growing Forward 2 (GF2) reduced coverage under AgriStability

2018

Canadian Agriculture Partnership (CAP) framework.
Review of BRM programs.



BRM Suite

- **AgrilInsurance (Production Insurance)**
- Protection from production losses.
- The main program utilized by grain farmers in Canada.
- Premiums are generally subsidized 60 percent by governments, and producers are responsible for 40 percent.
- The program covers only production losses, **and does not guarantee market prices or input costs.**



BRM Suite

- **AgrilInsurance (Production Insurance) Cont'd**
 - Primarily yield-based.
 - In 2012 premium of CD\$1.7 b and liability of CD\$17.3 b.
 - Rating methodology to break even over time – not for profit
 - Efficient framework, with average administration costs of around 9%.
 - Methodology to calculate premium rates and yields certified by an actuary every five years.
 - Premium rate
 - Risk zone long-term average yield
 - Selected coverage level (50, 60, 70, or 80 percent).
 - Insured price
 - Customer's experience discount or surcharge.
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BRM Suite

- **AgrilInvest**
- A government-matched savings account to address net farm income declines.
- Accounts earn interest, and withdrawals can be made any time.
- Intended to help producers protect their margin from small declines.
- Each year, producers can deposit up to 1.5 percent in the current GF2 framework, and 1 percent under the new CAP framework effective in 2018, of their Allowable Net Sales (ANS) into the AgrilInvest account, and this is matched by government contribution.
- ANS is limited to \$1.5 m per year, making the largest matching government contribution \$22,500 per year under the current GF2 framework, and \$15,000 per year under the new CAP framework effective in 2018.
- The account balance is limited to 25% of a producer's average ANS.



BRM Suite

- **AgriRecovery**
- A disaster-relief program offered by the Federal, Provincial, and Territorial (FPT) governments to assist producers with extraordinary costs of recovering from natural disasters.
- Provides a framework for FPT governments to respond with targeted assistance to help those producers affected by natural disasters resume business operations as quickly as possible.
- The main challenge with this program is that it is not bankable, as the program is ad-hoc with the form of assistance being unique to the specific disaster situation.



BRM Suite

- **AgriStability**
- Whole-farm program that provides protection when a producer has a large margin decline.
- Intended to provide protection against large decreases in farm income.
- Payouts triggered when a producer's current year program margin drops below 70 percent of their reference margin.
 - Program margin is based on allowable income minus allowable expenses in a given year, and adjustments are made for changes in receivables, payables and inventory.
 - Reference margin is the average program margin based on a five-year Olympic average.
- Major challenge of this program is in regards to the determination of the reference margin, which is based on the production history of the producer.



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- To help manage losses, provinces can elect to participate in a deficit financing program, called the federal-provincial reinsurance fund.
 - Backstopped by the federal government.
 - Provincial government insurance corporation must pay a premium to participate.
 - Currently five of the ten agricultural provinces participate in this program.
 - Individual provinces may also purchase reinsurance from the private market.
 - Western Livestock Price Insurance Program (WLPIP)



Agricultural Insurance - Australia



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- Support to producers has continually been reduced from already low levels, and is one of the lowest in the OECD area.
 - Support is roughly equally split between direct to producers and general services support.
 - No measures that convey market price support.
 - Direct support is largely targeted towards input use.
 - Recently implemented the Managing Farm Risk program, which targets the information barriers and transaction costs associated with taking on complex financial products.



Agricultural Insurance - Brazil



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- Relatively low level of support.
 - Direct support is about 75% of total support.
 - The role of direct payments is minor.
 - Access to most farm programs is conditional on environmental criteria.
 - Agricultural policy has three main components:
 - Minimum guaranteed prices: direct government purchases (AGF program), deficiency payments, marketing loans, etc.
 - Rural credit: for commercial and small-scale family farm sectors.
 - Crop insurance subsidies: insurance premium subsidies or compensation for production losses due to natural disasters.



Agricultural Insurance - China



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- Relatively high levels of support.
- Market price support is dominant.
- Agricultural Insurance rapid progress since 2007.
- 2016 premium ~6 billion USD, with 70% from crop and 30% from livestock.
- Subsidies by three levels of government, including central, provincial, and local.
- The total subsidy ratio is usually 70% to 80%.
- Main product is Cost of Production Insurance.
- Pilot products include, weather index insurance, price insurance, margin insurance, revenue insurance.
- Example: price insurance/margin insurance developed for hogs, milk, chicken, vegetables, sugar cane, cotton, maize, and apples, and piloted in all provinces of China.

	Central Government Subsidy		Provincial Government Subsidy (minimum)
	East China	Middle & West China	
Crop	35%	40%	25%
Livestock	40%	50%	30%
Forest (public)	50%	50%	40%
Forest (commercial)	30%	30%	25%
Natural rubber and Tibetan commodities	40%	40%	25%



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- Catastrophic Programs
 - Disaster relief programs.
 - Three types of arrangements to help deal with catastrophic risk for the agricultural insurance program:
 - Required to load the mandatory catastrophic risk reserve fund, and buy private reinsurance to cover underlying risk.
 - Risk-sharing model with private insurers, where government covers the catastrophic risk when indemnity ratio >200% or 300%.
 - The China Agricultural Reinsurance Pool (CARP), which is a mutual reinsurance organization (2014).



Agricultural Insurance - India



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- Agricultural Policy formulation in India is very complex.
 - Minimum Support Price (MSP) guarantees minimum price for 23 crops.
 - Input subsidies are the most expensive aspect of policy, aiming to keep farm costs low and production high.
 - Finance is a major bottleneck as the majority are small operators with less than two hectares of land. Annual targets are set for providing agricultural credit.
 - The National Crop Insurance Program (NCIP):
 - Modified National Agricultural Scheme (MNAIS)
 - Weather Based Crop Insurance (WBCIS)
 - Coconut Palm Insurance Scheme (CPIS)
 - A uniform maximum premium of between 1.5% and 5% is paid by farmers, and balance paid by government (shared between Central and State).



Agricultural Insurance - EU



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- Common Agricultural Policy (CAP), which has moved towards the dismantling of price supports, and increasing market focus.
- “weight” of instruments is about 1% insurance, 39% safety nets, 60% income support with direct payments.
- Pillar 1: Market Support Measures and Direct Subsidies
- 76% of budget is allocated to Pillar 1.
- The largest share to direct payments.
- Pillar 2: Rural Development Programs
- 24% of budget is allocated to Pillar 2.
- 118 different RDP’s in the 28 MS.

EU FARMERS HAVE ACCESS TO:

Compulsory schemes (all Member States)

- Basic payment
- Green payment
- Young farmers scheme

Voluntary schemes (Member States choice)

- Coupled support
- Support in natural constraint areas
- Redistributive payment

All payments subject to cross compliance

OR

A simplified scheme for small farmers (voluntary for Member States)

Source: Policy Department: *Structural and Cohesion Policies. Comparative analysis of risk management tools supported by the 2014 farm bill and the CAP 2014-2020, European Parliament.*



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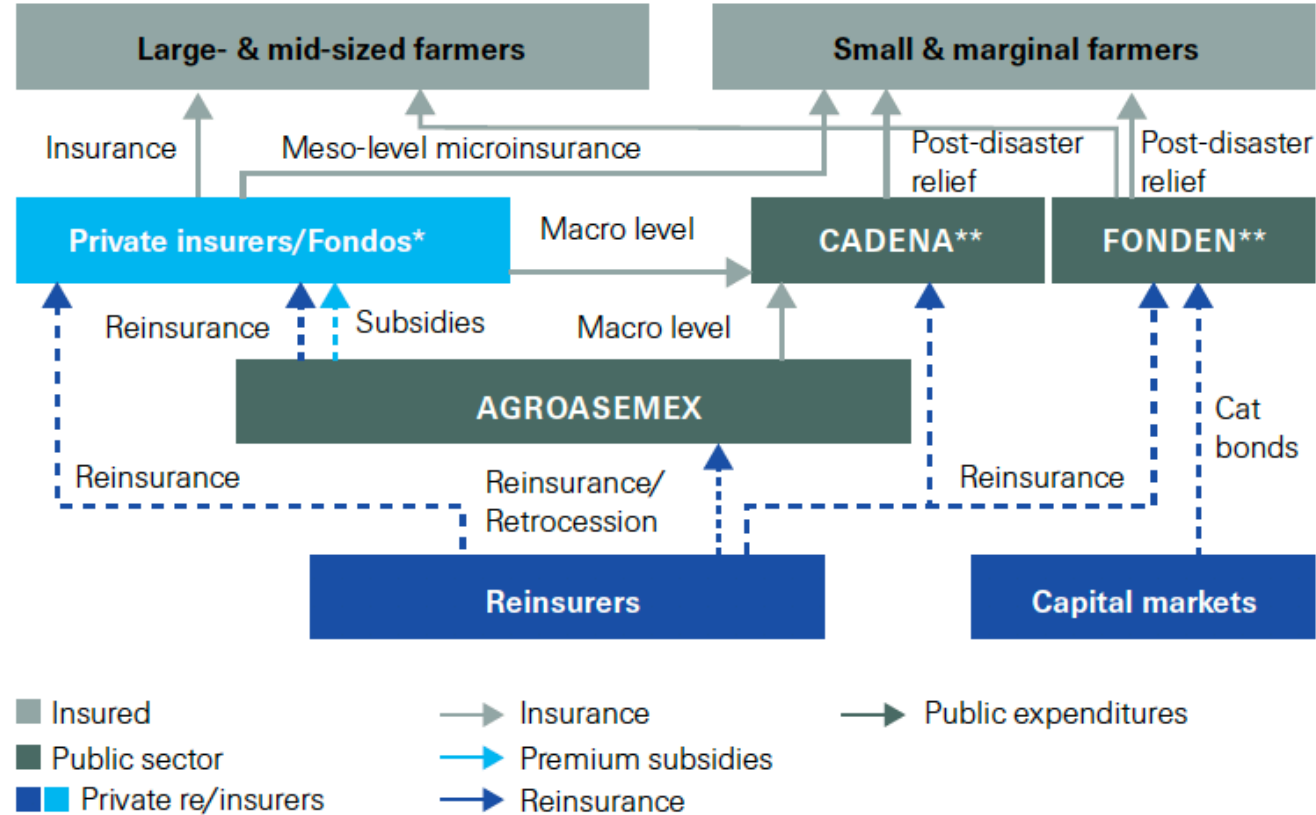
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- Current CAP strengthened the risk management instruments, but, transferred these instruments from Pillar 1 to Pillar 2.
 - Now these instruments have become optional measures that may be co-financed by the MS.
 - There are three tools:
 - Premium on Insurances
 - Mutual funds
 - Income Stabilization Tool (IST)



Agricultural Insurance - Mexico



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*Mutual insurance funds; ** Agricultural Fund for Natural Disasters (*Componente de Atencion a Desastres Naturales*), *** Natural Disaster Fund (*Fondo de Desastres Naturales*)
Source: Swiss Re Economic Research & Consulting.



Agricultural Insurance – New Zealand



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- Level of support to farmers has been among the lowest in the OECD.
 - Almost all prices are aligned with world market prices due to open trade.
 - Primary instruments to support the agriculture industry include:
 - animal disease control
 - relief payments in the event of natural disasters
 - agricultural knowledge and information system.
 - Examples:
 - OVERSEER
 - The Sustainable Farming Fund (SFF)
 - Industry's Irrigation Acceleration Fund (IAF) and Crown Irrigation Investments Limited (CIIL)
 - Primary Growth Partnership (PGP) program
 - New Zealand Emissions Trading Scheme (NZ ETS)



Desirable Criteria for Agricultural Risk Management and Insurance Programs

Potential government objectives

- Trade neutral programs (non-trade distorting and WTO compliant), and programs should not overly favor particular sectors or commodities.
- Cost efficient programs, and acceptable subsidy levels in terms of producer and taxpayer interests.
- Provides choices for producer in terms of coverage level (e.g. producer may be able to purchase higher coverage, though maybe not as subsidized), and various lengths of coverage.
- Avoids having producer have extended years of financial challenges with no program payment.
- Satisfies long-term and short-term stability needs of producer, and affordable for producer.



Desirable Criteria for Agricultural Risk Management and Insurance Programs

Potential government objectives

- Effective for the bulk of crop and livestock production (80% plus production), and sufficiently high producer participation rate.
- Suitable size and frequency of payments (indemnities) for producers.
- Allows producers to maintain sufficient efficiency and size to compete worldwide.
- As equitable as possible across producers.
- Suitable in the eyes of bankers and those lending to producers.
- Avoids having government crowd out the private sector in their risk management and insurance development efforts.



Desirable Criteria for Agricultural Risk Management and Insurance Programs

Actuarial Principles and Regulatory Requirements

- Actuarially sound and insurance based (analysis of liabilities, loss ratios, premiums, etc).
- Simple for producer to use and easy to understand, a timely payment of indemnities (funds owed to producers), low administration costs, and flexible.



Challenges in Developing Countries

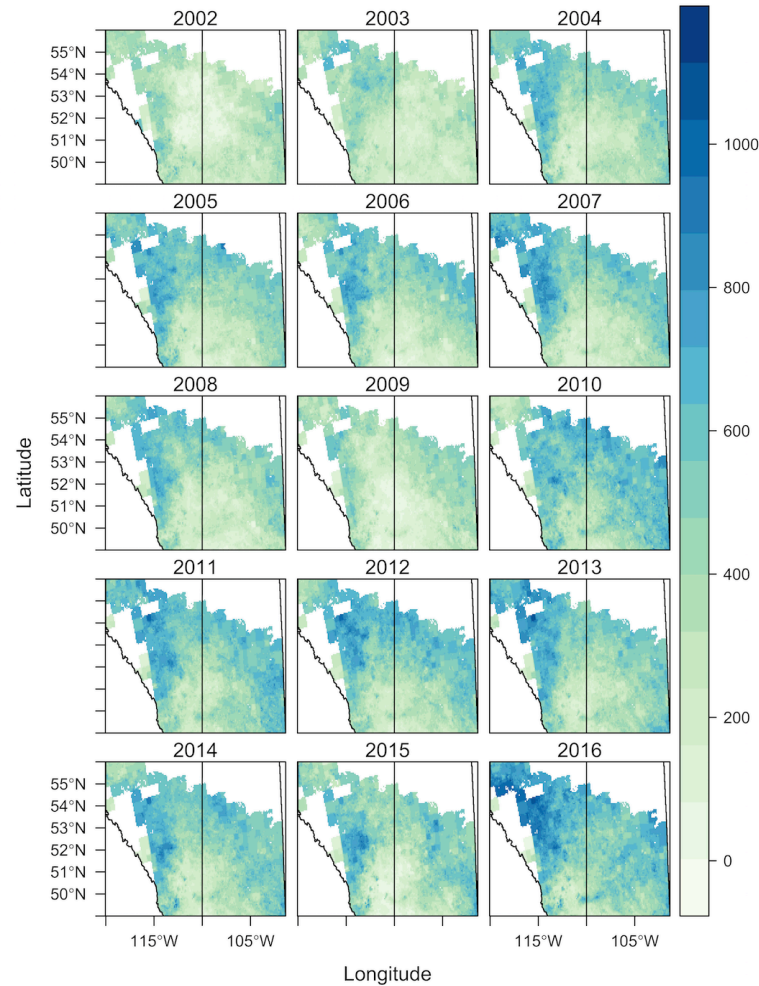
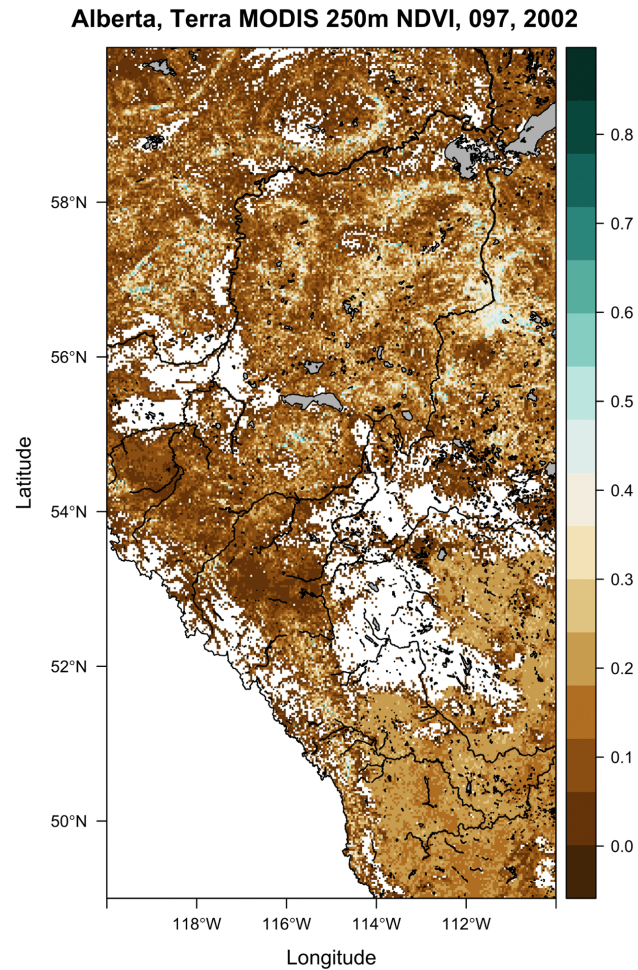
- Lack of reliable long period data on crops yields and losses.
- Wide variety of agricultural practices.
- Existing land tenure and land record systems.
- Lack of understanding and poverty of farmers.
- Lack of trained personnel.
- Limited financial resources of the countries.
- Lack of insurance consciousness amongst farmers.
- Lack of Reinsurance support from international reinsurers.



Advances in Technology and New Approaches to Insurance and Risk Management

- Satellite based crop yield estimation has been improving over time, and will continue to improve rapidly with advances in satellite technology.
- Satellites continue to improve with more bands, better sensors, and better resolution.
- Also, software and image processing capability continues to improve, along with more computing power (e.g. cloud computing), and more data storage is available to deal with big data at lower cost.
- As well, advances in machine learning, such as neural networks, can improve the computing and processing capability.





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Canada



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