



Swiss Re

Index based insurance for agriculture



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Innovative Finance for Sustainable Development
New York, Oct 18-19, 2007

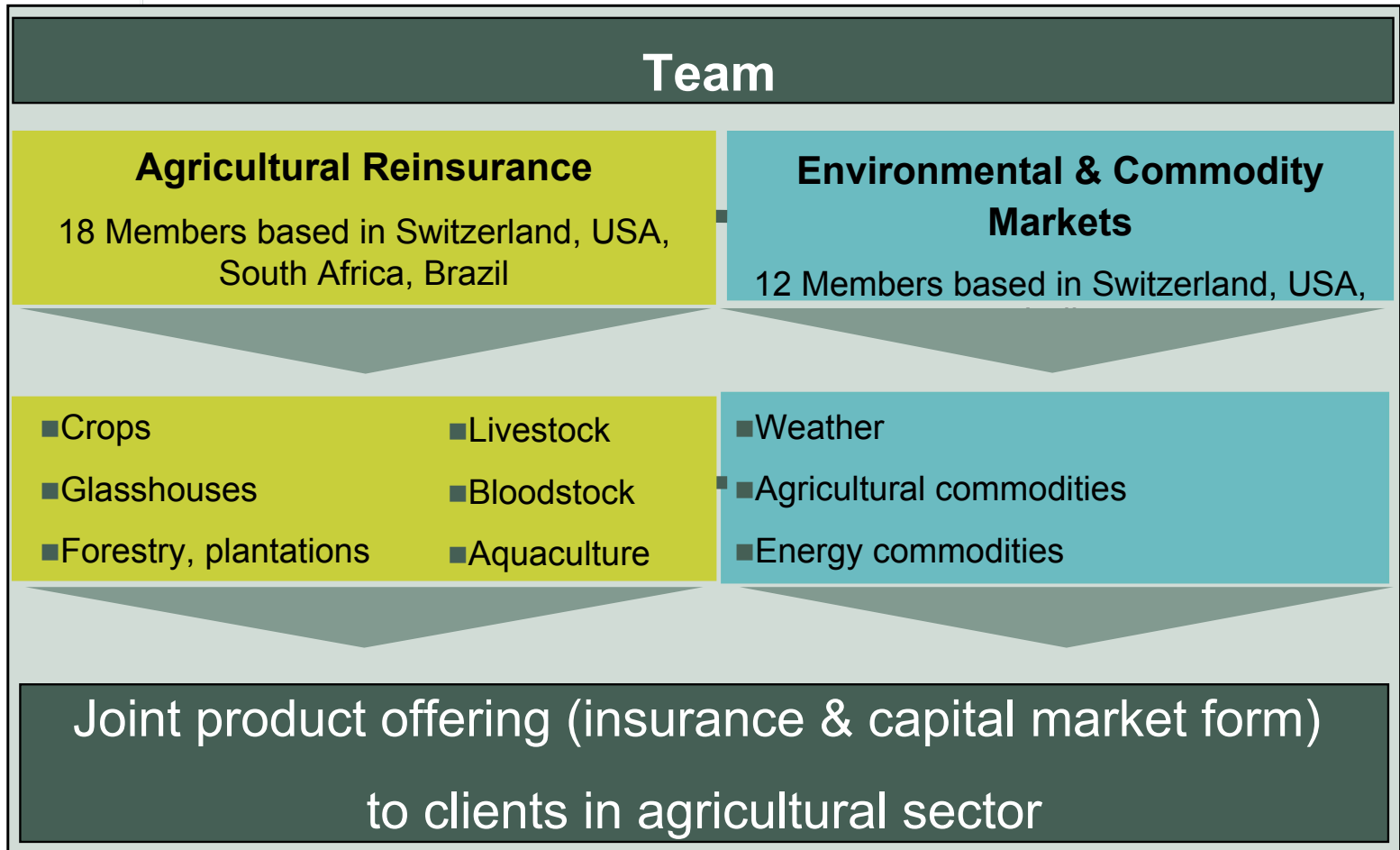


Content

- I Swiss Re's position & products in agri risk markets
- II Swiss Re's commitment & track record of executing agri risk transfer business in emerging markets
- III Conditions for the reinsurance sector
- IV Conclusions



Worldwide team of 30 with expertise in agricultural insurance & capital markets





2 in traditional agricultural reinsurance markets

Swiss Re's standing in agricultural reinsurance

Market by reinsurance premium 2006

Region	Overall	Swiss Re
North America	1450	45
Latin America	170	50
Europe/Africa	620	100
Asia/Australia	260	30
Total	2500	225

Source: Own Estimations

in USD million

Ranking by premium 2006

Reinsurer	Premium
Munich Re	550
Swiss Re	225
Partner Re	165
Scor	110
Total	1050

Source: Own Estimations

in USD million



Product offering includes whole range of traditional products and ... (1/2)

	Main Perils	Insured Interest	Loss Metric	Rates
				Deductibles
Crop	Basic cover: hail; MPCl: hail, windstorm, drought, flood, frost, disease	yield, revenue, quality	yield/ha, revenue, qualitative criteria	1% - 25% 5% - 75% of S.I.
Forestry	fire, windstorm, snow pressure	yield, input costs	m ³ wood/ha, sales value of log	0.2% - 2% 0.5% - 1% of S.I.
Greenhouses	fire, hail, windstorm, weight of snow, equipment failure	structure, contents, BI	crop value and greenhouse value	0.3 – 0.7 % max. 10% of loss 1% of SI

Multi Peril Crop Insurance (MPCI)



Product offering includes whole range of traditional products and ... (2/2)

	Main Perils	Insured Interest	Loss Metric	Rates
				Deductibles
Livestock	death or necessary slaughter as a consequence of disease or accidental injury and sometimes epidemics	single animals, herds, BI, emergency slaughter	animal value, value of products	1% - 10% 0% - 10% of loss on TSI
Poultry	death or disability as a consequence of disease or accidental injury, farm package	single animals, stables, transport, disability, infertility, medical treatment	animal value	1.5% - 10% 0% - 10% of loss
Aquaculture	death, disease, pollution or algae blooms, loss of fish stock and/or equipment due to meteorological events	fish stock, equipment, transport	fish value	3% - 8% 15% - 30% of S.I.



...is complemented by broad range of weather & commodity-related capital markets instruments



Swiss Re's commodity markets product range

	Product Range	Experience (since 1998 worldwide)
Indexes:	<ul style="list-style-type: none">- Temperature- Precipitation- Wind Standalone or combined with power, gas, wheat, maize, soybean	<ul style="list-style-type: none">- HDD, CDD, Tmax, Tmin, avg. temp- Lack/excess of rain/snow, river flow- Wind speed- Wave height- Sunshine hours
Instruments:	<ul style="list-style-type: none">- Swaps- Options- Quantos- Compound Options	<ul style="list-style-type: none">- More than 5,000 options since 1998- Average market share of 30%¹⁾
Services:	<ul style="list-style-type: none">- Risk analysis & structuring in cooperation with end users	<ul style="list-style-type: none">- Tailored indexes for energy and agricultural sector

¹⁾ In the OTC market based on notional values as published by Weather Risk Management Association in June 2007



... where Swiss Re has access to multiple client base to foster economic development in emerging markets



Level:	Swiss Re's client base:	Customer Benefit:	Swiss Re's role:
Macro (PPP)	Public sector / governments NGOs	Budget protection, livelihood protection & social stability	Risk identification, product design, aggregate risk taking
Meso (B2B)	Corporations, SMEs	Production, income and credit protection	Product design, aggregate risk taking
Micro (B2C)	Property insurers, banks, MFIs, farm associations	Access to credit, credit protection	Product design, bundling, aggregate risk taking

Public Private Partnership (PPP)

Business to Business (B2B)

Business to Consumer (B2C)



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Motivation

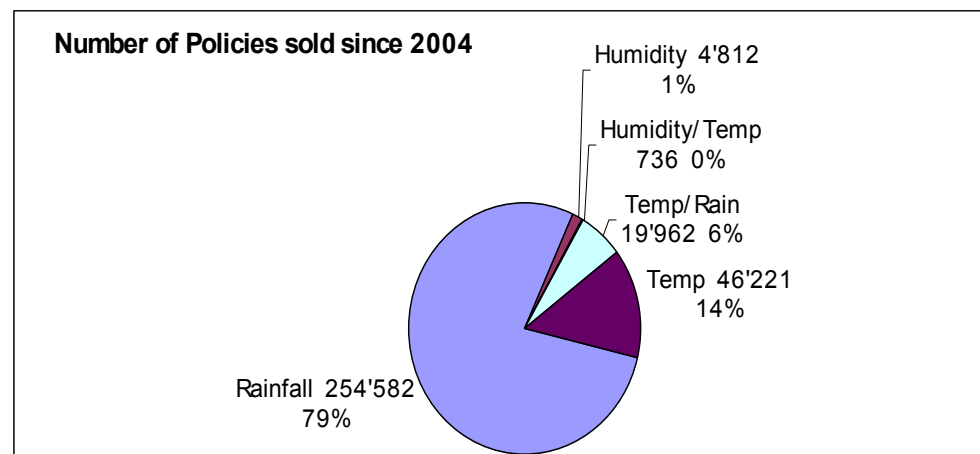
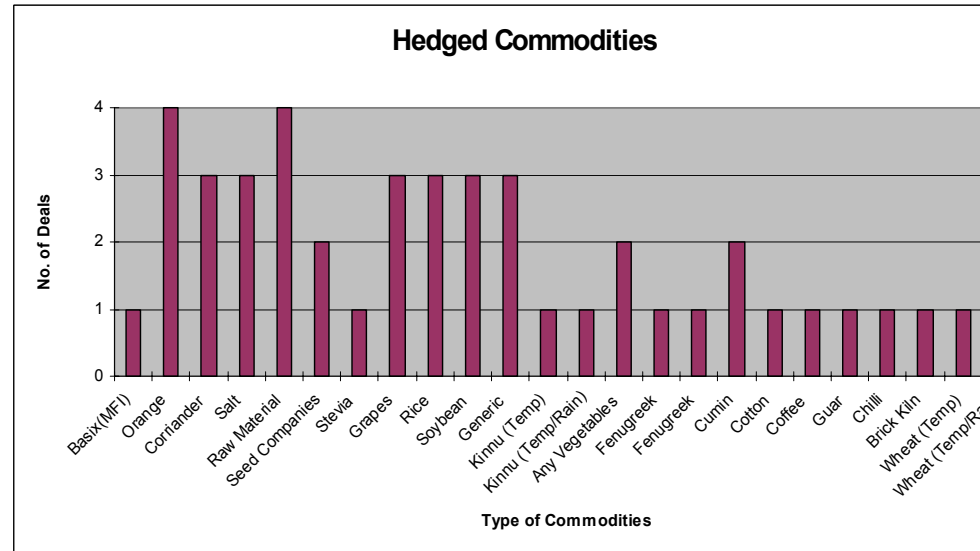
- Product features & benefits (⇒ economic development, access to credit, protection against severe income shocks, budget smoothing)
- Innovation (⇒ many components are new, overcoming challenges such as transaction costs, distribution has value beyond specific transactions)
- **Risk taking is our business** (⇒ we expect to make profits)




Swiss Re significantly supported development of Indian weather insurance market as a first mover



- First deal in 2004 with Basix (microfinance institution) for Castor and Groundnut crop in Mehbubnagar, Andhra Pradesh against deficit rainfall covering 1,500 farmers
- Since then 44 reinsurance contracts closed providing coverage for 320,000 insured
- Offers a viable alternative to the traditional crop insurance market and has the potential to extend beyond business with smallholder farmers into agri corporates and other industry sectors
- Currently working on solutions for agri input companies, wind farms, tea plantations, hydro power projects, sugar production, salt production, various crops and vegetables, contract farming, etc





Swiss Re is committed to build up of risk transfer markets and significantly invests into R&D, risk dialogue, education & training and...

Swiss Re



R&D investments

- Swiss Re Economic Research & Consulting (e.g. Sigma study on potential of agri insurance in emerging markets)
- NCCR Climate Swiss Climate Research
- Beijing Normal University
- Climate Adaptation Development Program (e.g. cooperation with International Research Institute for Climate and Society at Columbia University)

Risk dialogue and education & training

- Agricultural Insurance workshop, 22 March 2007, Moscow
- China Knowledge Fair, 14 May 2007, Beijing
- Agricultural Insurance workshop, 6 June 2007, Nairobi
- Swiss Re Academy (former SITC) offering courses, e-learning, etc. under www.swissre.com/academy



... pioneers pro - poor drought coverage with NGO

Media release September 2007

Swiss Re, the Earth Institute at Columbia University and the Millennium Promise Alliance have pioneered weather derivative contracts protecting several villages in Kenya, Mali and Ethiopia against severe drought. The contracts protect smallholder farmers against drought-related livelihood shocks such as food shortages and famines. About 150,000 people will benefit from the coverage.

- Three village clusters Sauri (Kenya), Tiby (Mali), and Koraro (Ethiopia) received USD 2m of financial protection
- Goal is to support index development of additional 9 village clusters
- **Swiss Re will bring transactions to market in a competitive bidding process on behalf of Millennium Promise**



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How does the risk differ from other insurance products?

- Non uniformity of risks over time \Rightarrow antiselection (watch information at closing of contracts)
- Fixed payouts (sum and date) \Rightarrow hedging & trading possible
- No physical losses \Rightarrow correlation between index and insured interest (pay attention to insurance regulation, compliance)
- No physical losses \Rightarrow special care for calculation of settlement values (fallback stations, - methodology needed)
- Contracts can be in insurance or derivative form
- Underlying data typically shows a trend (data quality!!)



What are conditions for involvement of the reinsurance sector?

- Third party reliable/verifiable data
- Enhanced data
- Legal & compliance qualification with local regulator
- Tax requirements are clear
- Transaction size
- Geographical diversification
- Constant deal flow
- Multi year structures



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Competitive bidding & commercial pricing are key success factors for build up of risk transfer markets in non-OECD countries

Swiss Re



- Swiss Re has the product expertise, global reach and access to multiple client base of the agricultural sector needed for a successful build up of such markets
- Swiss Re fosters the development of rural risk markets with own R&D projects as well as through R&D cooperation with others and education & training
- Agricultural risks from non-OECD markets make up a significant part of Swiss Re's overall exposure to the worldwide agricultural markets and we are committed to further grow this market



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