

There's a lot more to Swiss Re than reinsurance.
Isn't it time you found out how much more?

Corporate Solutions

Swiss Re



Weather risk solutions – what Swiss Re can bring to the table

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MD Environmental & Commodity Markets

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Swiss Re – a leading international risk taker



Headquarters, Zurich



Armonk, New York



The "Gherkin", London

Swiss Re is a **leading and highly diversified global reinsurer**, founded in Zurich (Switzerland) in 1863

The company offers **traditional reinsurance products and related services** for property and casualty, as well as for life and health businesses

These traditional reinsurance products are complemented by Swiss Re Corporate Solutions' global insurance capabilities for large corporate risks.

Swiss Re is rated "**A+**" by S&P's, "**A1**" by Moody's and "**A**" by A.M. Best

Key Statistics	FY2009 USD bn	FY2010 USD bn
Premium earned:	22.7	19.7
Net income:	0.5	0.9
Sharedholders' equity:	25.3	25.3
Return on equity:	2.3%	3.6%
Return on investments:	1.8%	3.5%
P&C combined ratio:	88.3%	93.9%

Environmental & Commodity Markets – solutions for weather-related energy and agricultural risks

Worldwide reach – team of 30 in Beijing, London, Mumbai, New York, Sao Paulo, Singapore, Zurich

Leading risk taker in weather and weather contingent commodity markets – in the market since 1998; 5-year average market share in excesses of 30% based on Price Waterhouse Coopers yearly market survey

Innovation, large net risk taking, services and ... – 1st online sales platform (Elrix, 2002-03; CelsiusPro since 2008); 1st international weather risk taker in emerging markets (India 2004, numerous pilots in Africa since 2007); 1st weather market-based cooperation with World Bank Group (Technical Partner to IFC-led Global Index Insurance Trust Fund since 2011)

... relevant local experience – since 2010 weather index based drought cover offered to farmers in Serbia in cooperation with local direct insurer

Offering – products & services for various client segments

Segment	Client description	Client Benefit	Swiss Re offering
Macro (PPP)	Public sector / governments NGOs	Budget protection, livelihood protection & social stability	Risk identification, product design, aggregate risk taking
Meso (B2B)	Corporations, Insurers	Cash flow smoothing, enhanced product offering	Product design, bundling, aggregate risk taking
Micro (B2C)	Trade associations & membership, SMEs	Access to insurance coverage, credit protection	Consortium set up, online sales platform, aggregate risk taking

Public Private Partnership (PPP)

Business to Business (B2B)

Business to Consumer (B2C)



PPP Example – providing risk capacity to World Bank for the benefit of Malawi

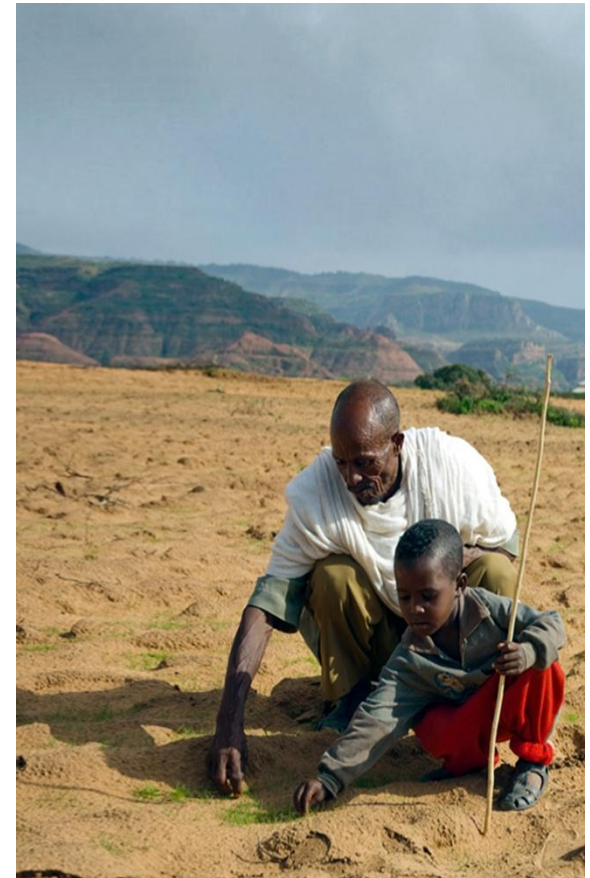
Drought affects the economy: A Solution for the Government of Malawi

Situation

- The World Bank and other development partners have been supporting Malawi's efforts to strengthen food security through agricultural technology, investments in irrigation and development of grain markets
- The government of Malawi had expressed interest in developing strategies to mitigate the impact of drought on the economy

Solution features

- The government of Malawi can access funds quickly in the event of a severe catastrophic drought to reduce dependency on humanitarian appeals
- A weather index was developed based on a basket of weather stations spread across the country linking rainfall level and maize production
- The weather derivative contract was purchased by the government of Malawi in 2008-09, 2009-10, 2010-11, 2011-12
- The World bank acted as intermediary between Malawi and Swiss Re





B2B Example – developing the Indian weather market with local direct insurers

Drought affects farmers: Solutions for India and ...

Situation

- Indian private sector insurers have been developing weather index covers to protect crops of small farmer households and NGOs/MFIs seek risk transfer possibilities with parametric products
- The Indian government supports the initiative through premium subsidies

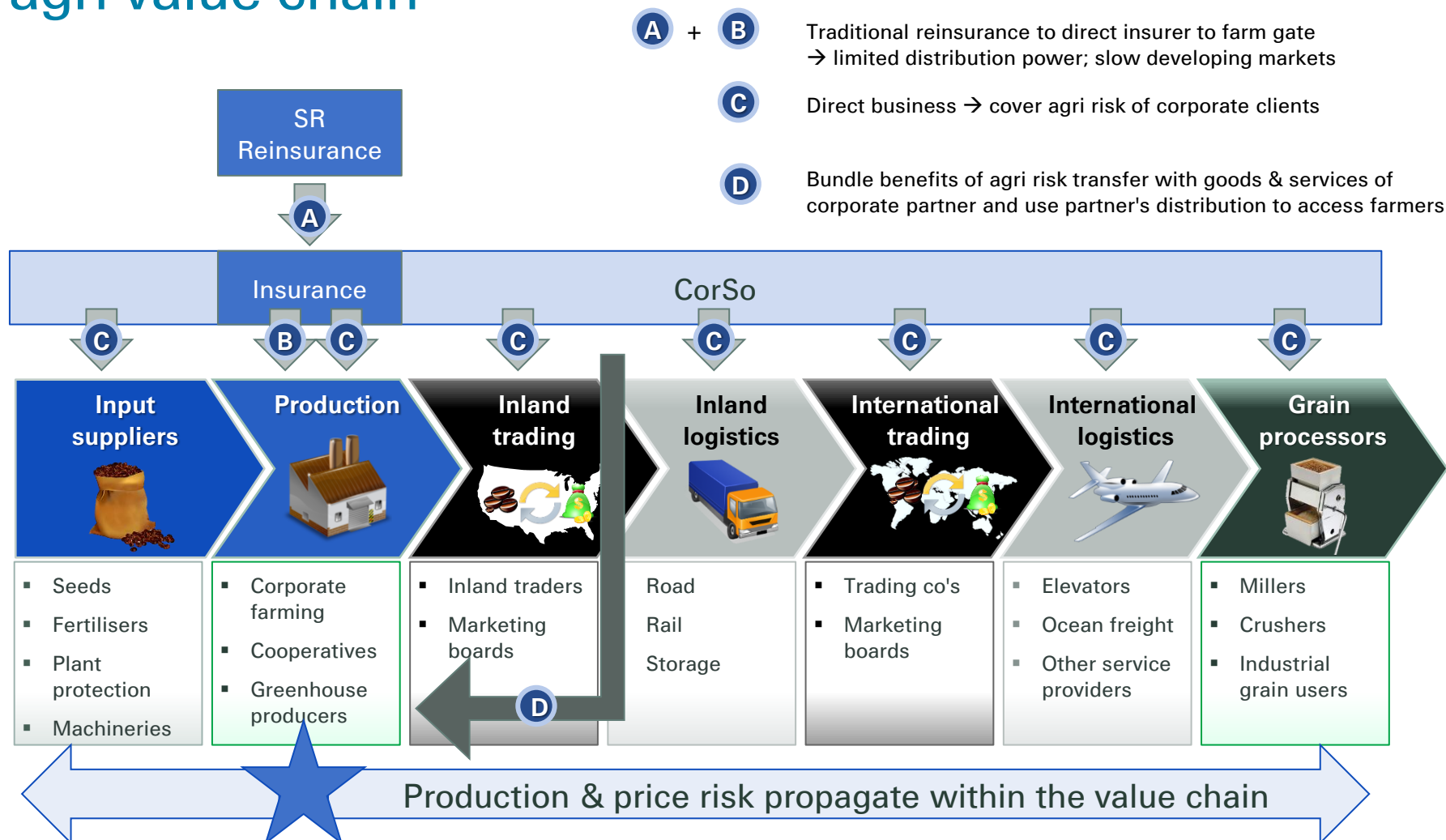
Solution features

- Swiss Re closes first deals as a pioneer with Basix (MFI) in Andhra Pradesh for deficit rainfall in 2004 with now 350,000 farmers insured
- Swiss Re collaborates with the Indian insurers to systematically develop a weather insurance market for agriculture risks in 2005 with now two million farmers insured
- Cover: deviations from normal rainfall and or temperature measured at weather stations over different crop growth cycles
- Sales: by bank agents to loanee farmers of government banks (compulsory cover) and by insurers to non-loanee farmers
- Benefits: fast payout following a loss, low administrative costs





... elsewhere working with the whole agri value chain





B2C Example – covering Frost
risk of Dutch construction
sector in consortium with local
marketing partners

Frost days trigger absenteeism payments: Solutions for Dutch construction workers

Situation

- Standard labor contract releases site workers when "Frost Day" conditions are met, but they still have to be paid
- Winter 2009/10 was very costly for the sector, leading to severe financial pressure and bankruptcy for some medium-sized contractors
- Contractors turned to their trade association for help

Solution features

- Payout based on the number of Frost Days as defined in labor contracts → no basis risk
- Local marketing partners inform construction companies about solutions available and on demand assist in the sales process
- Construction companies have possibility to online design their solution of choice and review benefits / costs based on historic information
- Settlement is transparent and automatic; no need to file claim and no ambiguity about amount.





Consortium to deliver solutions to SMEs ... replication potential for Europe Re?

Celsius Pro operates online sales platform but no local distribution

Swiss Re provides risk capacity and risk assessment but is not set up to handle small risks

CelsiusPro 
Professional Weather Protection

Swiss Re



Bouwend Nederland

MEEÛS

AON BENFIELD

Bouwend Nederland has access to membership but is not in the risk management business

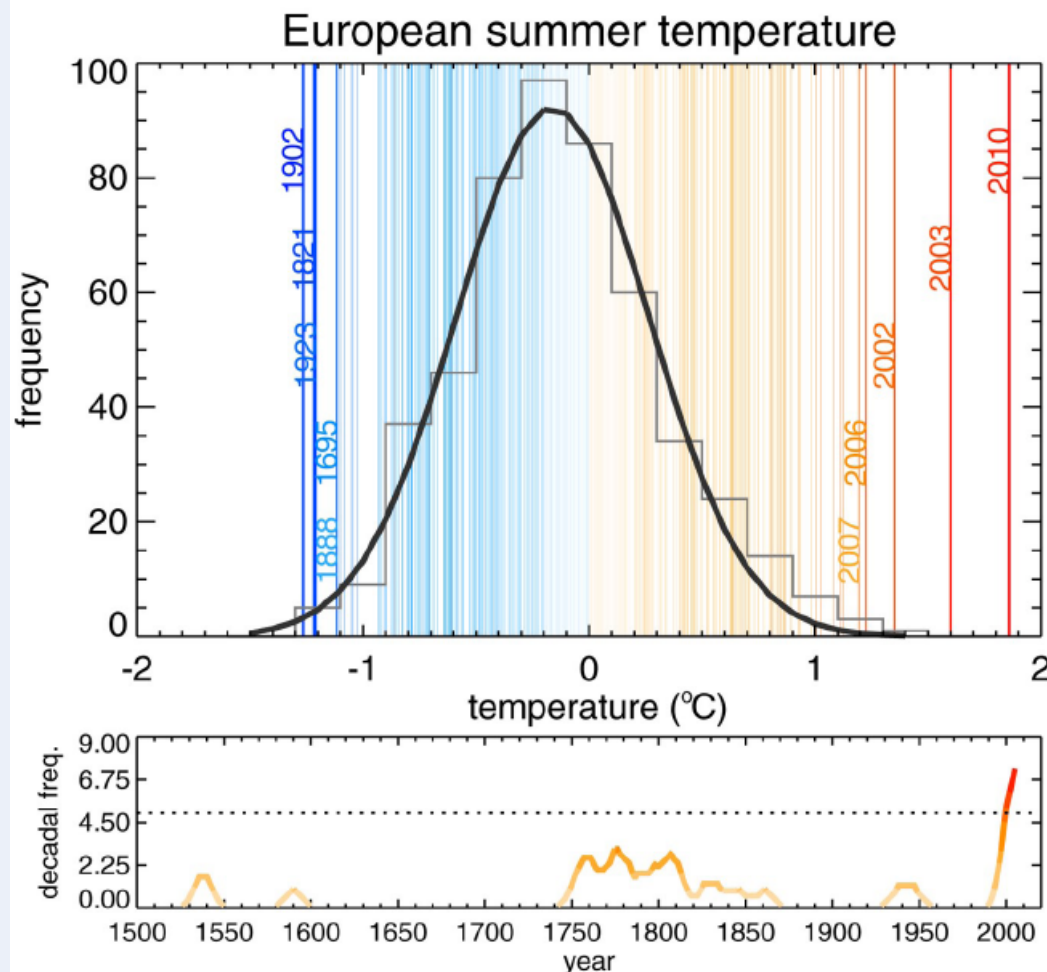
AON and Meeus act as producing brokers and advisors to Bouwend



Why weather matters and the need for an enhanced risk management tool box at the example of the agricultural sector



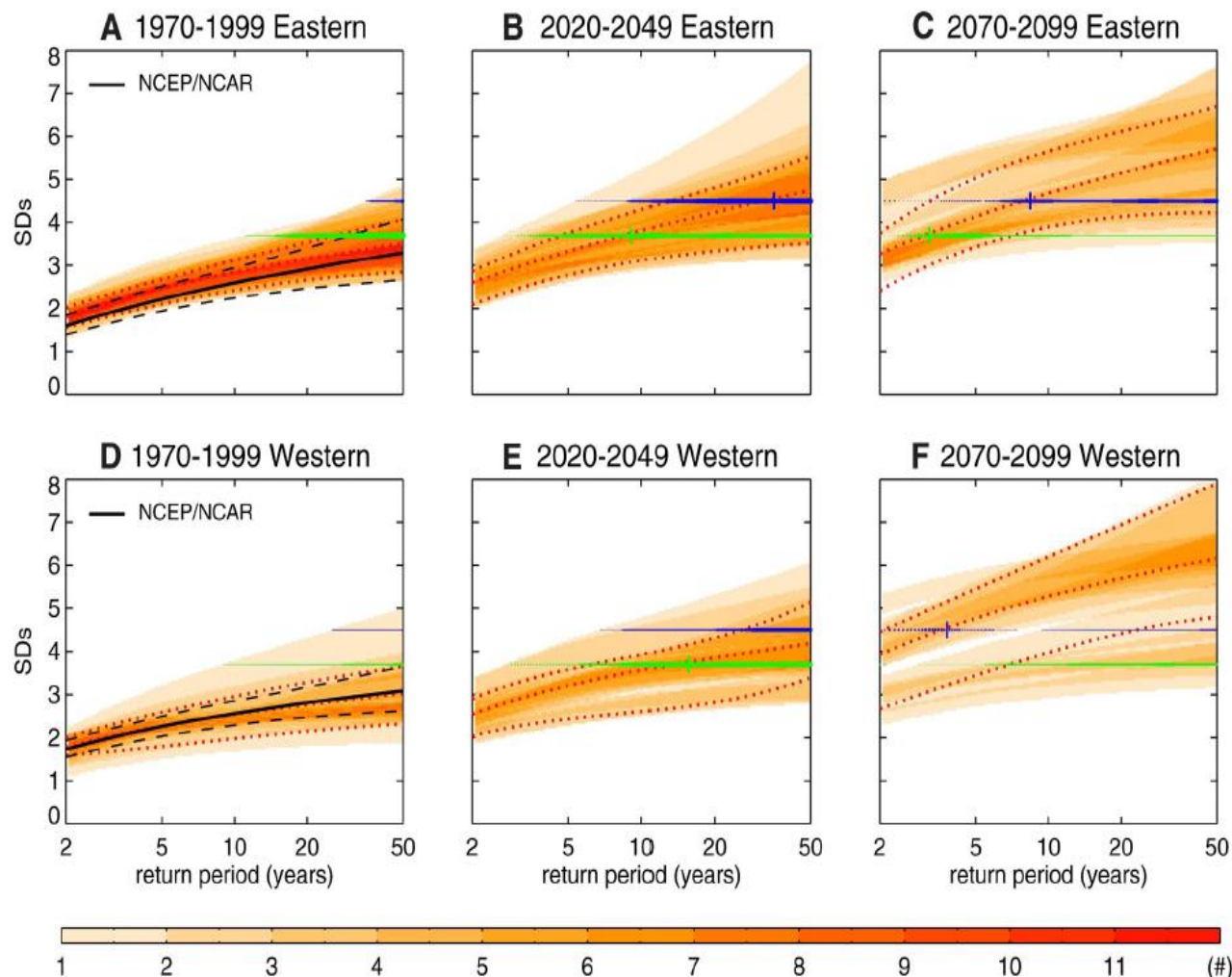
Increase in # of hot summers (droughts)...



Frequency distribution of European ([35°N, 70°N], [25°W, 40°E]) summer land temperature anomalies (°C, relative to the 1970-99) for the 1500-2010 period (vertical lines). The five warmest and coldest summers are highlighted. Grey bars represent the distribution for the 1500-2002 period with a Gaussian fit in black.

Running decadal frequency of extreme summers, defined as those with temperature above the 95th percentile of the 1500-2002 distribution. A 10-yr smoothing is applied. Dotted line shows the 95th percentile of the distribution of maximum decadal values that would be expected by random chance.

Source: The Hot Summer of 2010: Redrawing the Temperature Record Map of Europe, David Barriopedro et al, Science, March 2011



Multi-model projections of 'mega-heatwaves'. Return periods (years) of 7-day summer maximum regional temperature for three 30-yr periods and 11 Regional Climate Models over:
 a-c) EE ([52.5°N, 60°N]; [27.5°E, 40°E]);
 d-f) WE ([42.5°N, 50°N]; [0°E, 15°E]).
 Anomalies are depicted as standard deviations relative to 1970-99.

Blue 2010 heatwave

Green 2003 heatwave

Source: The Hot Summer of 2010: Redrawing the Temperature Record Map of Europe, David Barriopedro et al, Science, March 2011



How can farmers tackle the challenges ahead?

■ Climate Change

- Adjustment of the production system
- Water preserving technology
- New seed varieties

■ Economic Pressure

- Growth of area/farm
- Investment in new technology/machinery (cost reduction)






■ Role of insurance products

- Additional collateral → release of credits
- Adds planning security



Availability of crop insurance in Europe (2010)



-  Multi Peril Crop Insurance (65% subsidies thereof 75% EU co-funded)
-  Yield insurance – large spectrum of perils covered (incl. drought)
-  Combined insurance – several perils covered (excl. drought)
-  Single risk insurance – mainly hail insurance (some minor perils may be added)
-  Insurance schemes less developed/no data

■ Three options to cover drought:

- Rainfall index: covers drought only
- Yield index: covers shortfall of production (metric tons/hectar) below a pre-agreed level (all risk cover)
- Multi Peril Crop Insurance: covers various perils; settlement based on loss adjusters' assessment

■ Index covers:

- weather index covers complement but not fully substitute existing covers (e.g. crop hail)
- settlement of index covers doesn't require loss adjusters and therefore is fast and cost effective
- especially weather index covers can be designed to address a single risk (e.g. drought) and therefore are a cost effective add on to existing solutions

Weather insurance in Serbia – a solution that can be scaled up

Situation

- Serbia is the first country in Europe to complement crop hail insurance with a rainfall based weather insurance
- Roll out in 2010 for maize
- Expansion in 2011 to also include sugar beet (29 provinces) and soybeans (10 provinces)

Solution features

- Calculation period of 2 or 3 months depending upon crop
- Daily rainfall aggregated over decades (10-day periods) and capped to reduce basis risk related to rainy decades
- Good experience with product as impact of wet May 2011 capped resulting in a payout inline with dry core summer months in 2011
- Solution developed by Swiss Re in cooperation with local direct insurance partner
- Swiss Re main risk taker



Swiss Re Corporate Solutions



Top brand



**Financial
strength**



**Large net
capacity**



Innovation



**"We are
here to
stay"**



Thank you



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