



XVII Congreso Internacional ALASA 2022

 **alasa**
Asociación Latinoamericana para
el desarrollo del Seguro Agropecuario

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COP 26, Climate Change: Is Ag-Insurance ready to contribute to new solutions?

SCOR's perspective on Transition to Net Zero and COP 26

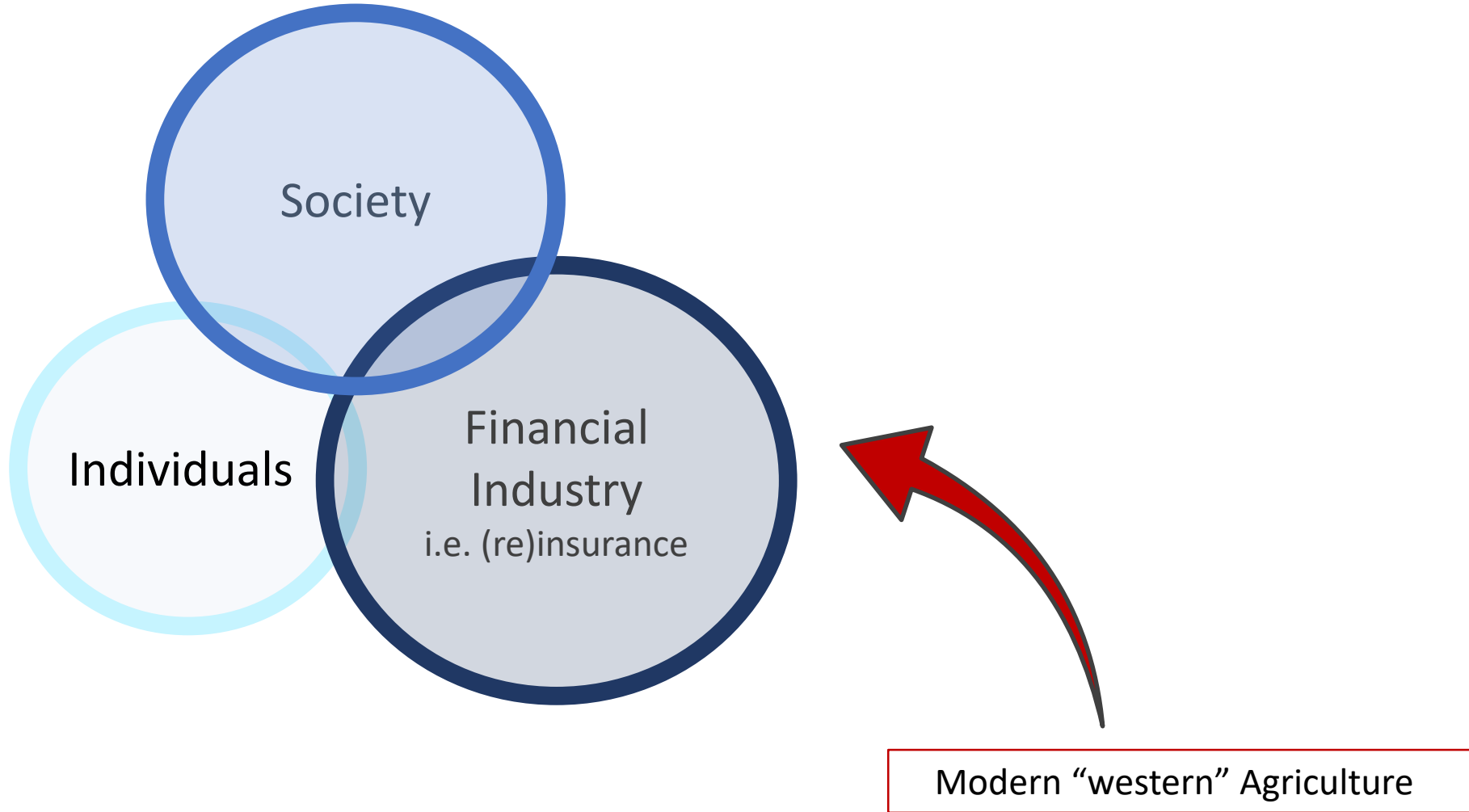
- Unchecked, climate change threatens the insurance industry's long-term future.
- The science is clear: net zero by 2050 is necessary to stabilize the climate...
... but emissions are continuing to rise.
- Only the concerted efforts of governments, businesses, academia and us all as individuals can drive the pace of change that is needed.
- At COP26 the private sector showed leadership, stepping up commitments.
- SCOR is engaging for this change on all levels, institutional, investment, underwriting and operational.
- Our *Raison d'être* is to support the welfare, resilience and sustainable development of society.
- **We want to help clients transform their businesses, and we stand ready to insure the transition that society needs.**
- **Agriculture is no exception.**

“ (Re)insurers need to lead a sustainable growth agenda to be fit for purpose for *all* stakeholders.

Laurent Rousseau – SCOR CEO

ReFocus Conference March 7, 2022

Where do we as Ag-Insurance industry act today?



Agriculture: 3 basic principles to keep in mind

As simple as it might sound

**We are talking
living things**

i.e. complex systems with
trigger points, inherent
resiliencies,
interconnections,
feedback loops.

**Only death will stop
permanent
evolution and
change**

**Good farming means
permanent adaption
& crop rotation**

striving for a good
steady state.

! Stability is a “urban concept” !

The agriculture (r)evolution over the last hundred years

From “manual agriculture” ...



- **Mixed farms, similar to an organism**
Few intake (machines, seeds), few outgo (crops / animals); main driver of production was the sun.
- **Fully autonomous**
Animals were used for labor, manure for fertilizer on the fields, straw to stock organic material brought back to the fields.
- **Labor intensive, multifunctional and with inherent risk management**
“if there is moisture on wheat, at least I will have apples...”
- **Local**
Decentralized structure and short distance shipping.

The agriculture (r)evolution over the last hundred years

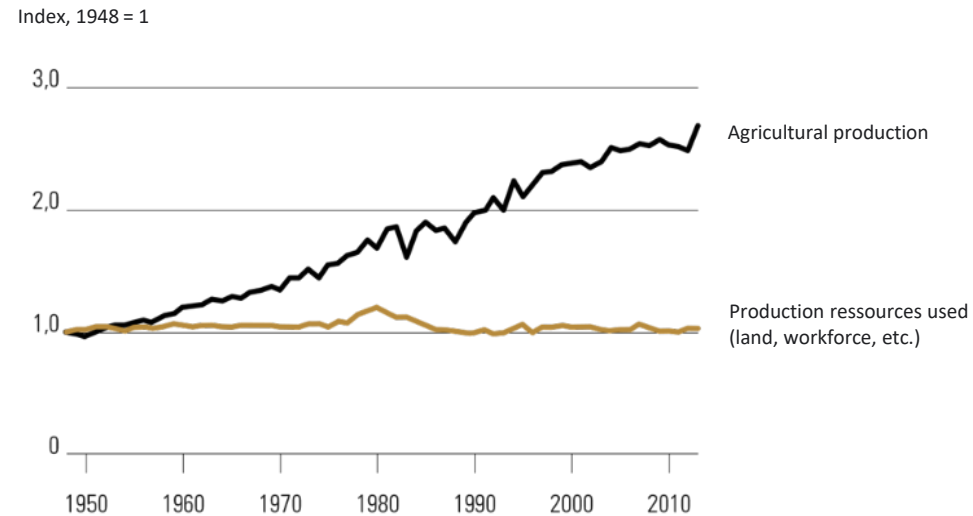
... to “industrial agriculture”

- **Highly specialized production**
1-3 crops with no animals or reduced to industrial animal husbandry, limited to parenting, raising, fattening.
- **Increased energy input**
Synthetic fertilizer, pesticides etc.
- **High capital demand**
- **Very few autonomy along the full cycle**
High dependency on few products and many interdependencies outside of farm => external risk management need increased.
- **Local to Global**
Long shipping and long upstream chains.

The agriculture (r)evolution over the last hundred years

- Labor intensity has been replaced by mechanization & freed up a lot of working power.
This enabled accelerated urbanization which, in turn, needs again industrialized agriculture.
- Rationalized / industrialized Agriculture enabled cheaper food.
Spending for food in Switzerland represented 6,3% of income on average in 2018¹⁾ vs. 40% 100 years ago²⁾.

The impact of technological progress on agricultural production in the USA from 1948 to 2013³⁾



QUELLE: USDA

From a sun driven to a fuel driven system

Does Ag-Insurance industry put the right price to risks?

Traditionally, only hail or fires could put in danger a mixed farm, but this has changed over the past 70 years:

- Disruptive changes in Agricultural practices started with mechanization, then synthetic fertilizers, GMO's, Glyphosate, Neonicotinoids.
Next step involve digitalization, drones, satellites.
- Spatial, cultural and temporal inhomogeneity limit the comparability of data.

Today, even without adding the Climate Change parameter, we struggle to get sufficient reliable data for insurance:
Do we have enough data to statistically analyze ground data?

- maximum 1 crop season of same type per year per location.
- since ww2, per location only 80 data points.
- with crop rotation probably only 20...
- of which only the downside is interesting to insurance...
- => **2-5 relevant data points?**

Does Few Data means no risk evaluation?

Traditional statistical methods are extremely limited for the agricultural risk modelling and climate change adds another dimension of uncertainty (when, how much, what consequences): are we able to quantify impact on crop insurance?



What does this mean in relation to a changing climate?

- **Can we model it? Let's face it: we cannot!**
- **We need to talk about buffers!**

**Agriculture UW will mean more and more a blended approach:
knowledge and data driven risk assessment**

-

“Vorsicht ist die Mutter der Porzellanke”¹⁾

1) “Better safe than sorry”

Possible scenarios to address Climate Change



Keep the same industrial way of production with higher volatility.



Operate a crop shift.



Change in practice on the same crops, stop irrigation, etc.



Abandon areas that are not suitable anymore.



Apply new (old?) cropping systems: Agroforestry, Crop mixes on same field, etc.



What if...

- glyphosate would be banned,
- neonicotinoids would be banned,
- CO2 sinks and biodiversity would be priced.



Pictures: Agroscope Switzerland.

Outlook of Ag Insurance – important questions



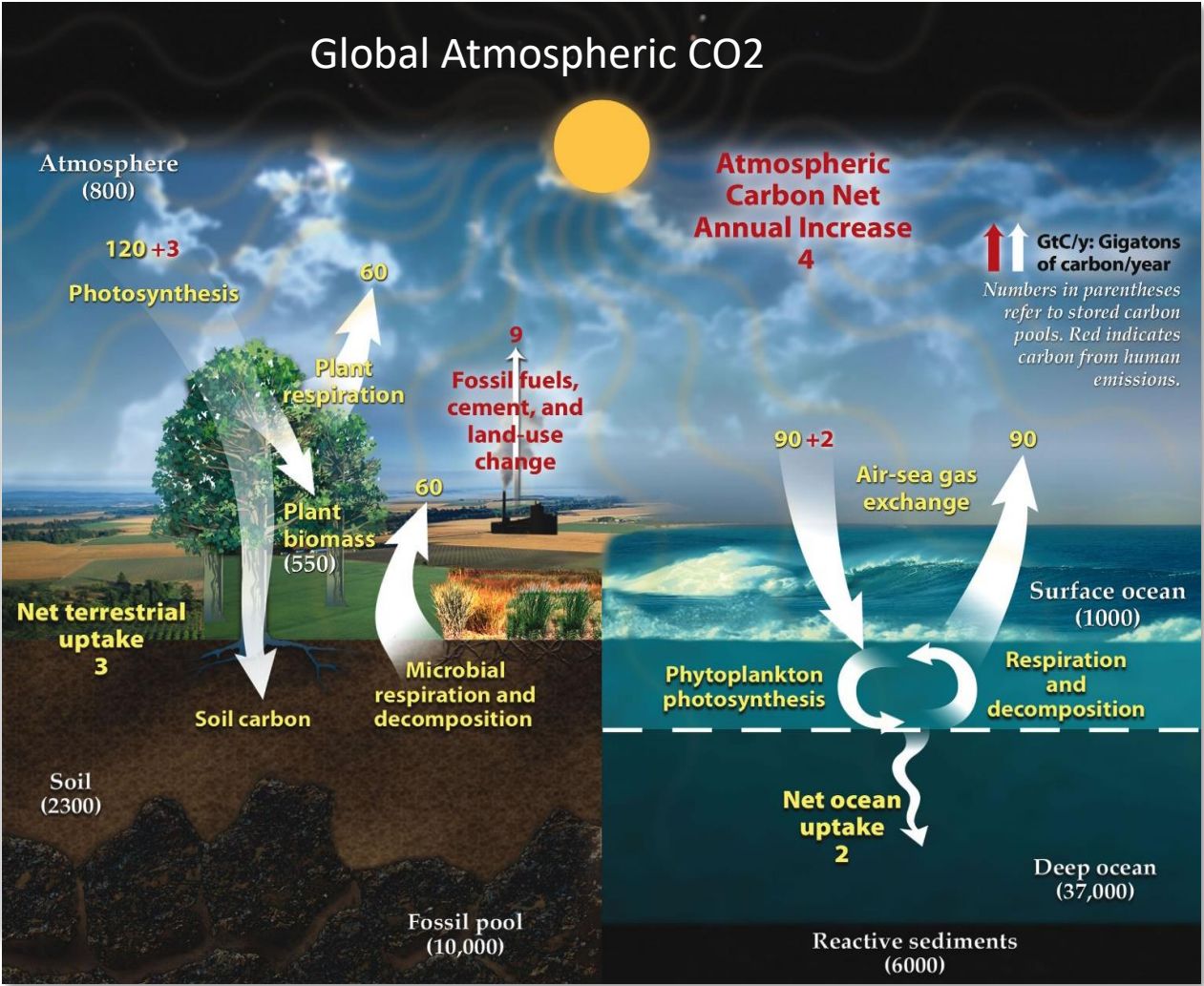
A thinkable example - Carbon & Soil Values

Annual intakes
(in GtCO₂/year)

Fossil Fuel
33.1

Forest Fire
4.78

Land Use Change
1.6



• CO₂ figures: Tree4Us 2019 / der Spiegel 2019

• System Graph: NOAA

A thinkable example - Carbon & Soil Values

Is our industry ready to consider unvalued and hence uninsured elements of ecosystems?

Forestry

- 615 GtCO₂ are stored in Boreal areas¹).
- Through fires and clear cut leading to depletion of soil, hundreds of millions of CO₂ are released to atmosphere annually.
- Close to 1 bio ha could be restored with forest; storage capacity reaches approx. 200 bio t of Carbon (2/3 released since begin of industrialization)²).

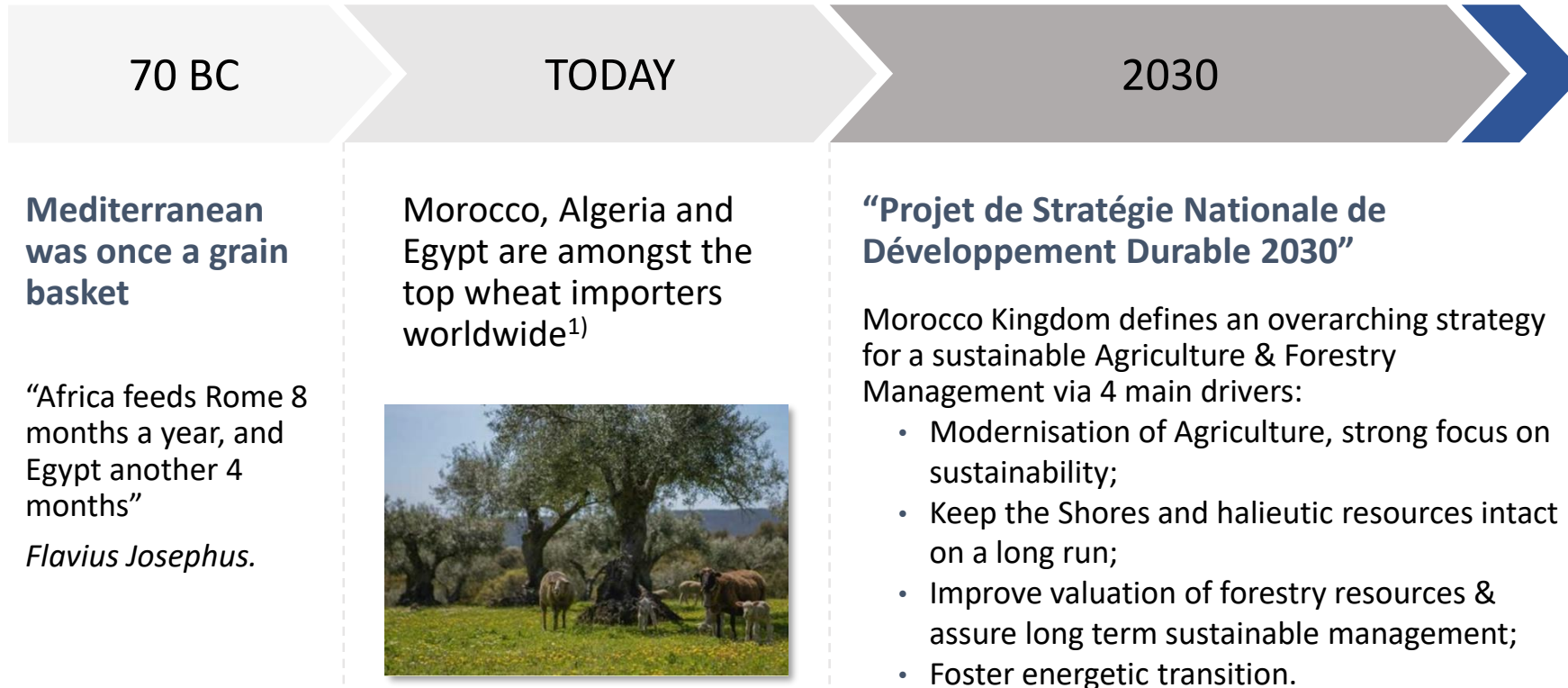
Agriculture

- Would worldwide Agro soils be enriched by 0.4% of humus annually, worldwide CO₂ output could be balanced.
- Satellite data linked to Carbon Balance Model today can assess with relatively high accuracy whether soil treatment leads to Carbon sink or release.

Can insurance assist in certification process, risk mitigation, valorization & avoidance of CO₂ release?

- CO₂ figures: Tree4Us 2019
- ETHZ, study from July 2019

A thinkable example – a different Agriculture?



Can we give back significance to the primary sector and improve value of Agriculture goods and services?

A thinkable example – 3 questions to ourselves

1

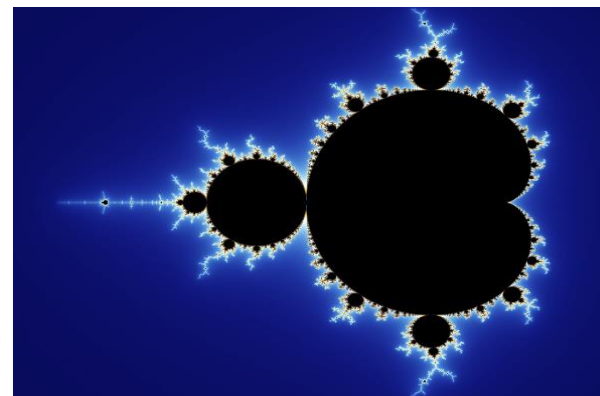
Life is rich at borders and interfaces (Riparian Zones) – can our industry cope with this fact?

2

With the broader awareness of climate change effects and threats of loss of biodiversity, wouldn't it be a good time to think in which direction Agriculture should develop?

3

How can we re-create (eco-) systemic stability? Studies from northern Canada clearly show that fire risk in uniform (re-forested) forestry stands is multiple of what it used to be previous to laws which prohibit controlled spring burning.



Key take aways for us as Ag-Insurance Industry



We, from the insurance and reinsurance industry, have to get ready for exiting developments and contribute as much as possible.



We will continue being confronted with lack of statistics, not because they do not exist, but because the farm practices, varieties, vulnerabilities will change.

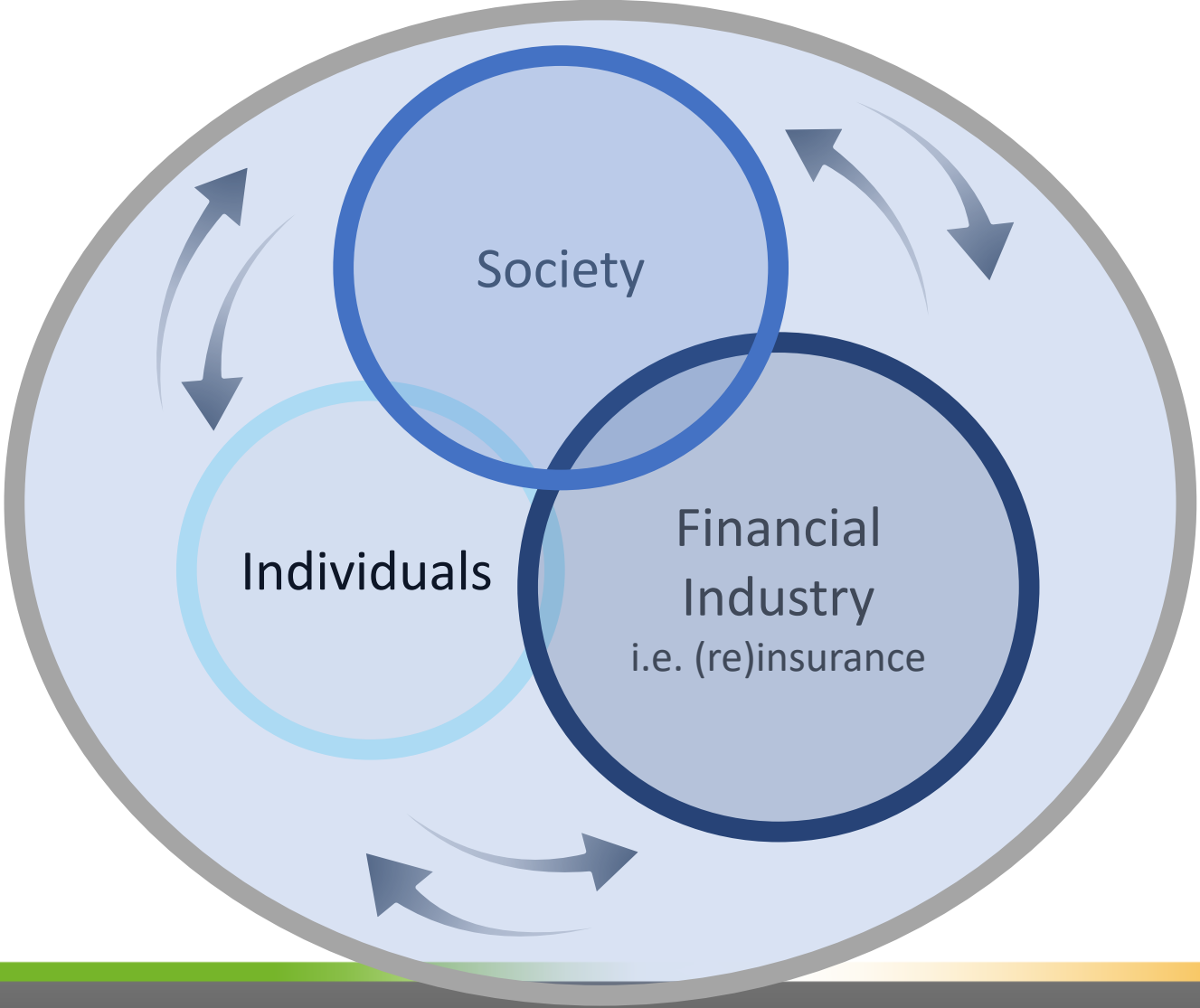


We are today geared towards “bringing back to the status quo before event” – even if the status quo is not what is desirable for the future.



A new Agriculture scenery may need new concepts, new technologies and an entrepreneurial spirit in the very sense of the term.

Remember: it will be a joint project...



“

Pay attention to the countryside, it is the future of the world – 50% of world population is living in cities, but cities represent only 2% of the surface. Everybody is looking into cities, thinking about metropolitan architecture – the real revolution is taking place in the rural area.

Rem Koolhaas – Architect

while preparing his exhibit at the Guggenheim Museum in 2020.

Thank You!

¡Muchas Gracias!

A photograph of a person hiking on a mountain trail, overlaid with a semi-transparent green filter. The text is centered over the image.

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the Art & Science of Risk
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¡Gracias!

