CIRCULAR BIOECONOMY ALLIANCE

TRANSITIONING TOWARDS A HEALTHY SOCIETY ON A THRIVING PLANET

CIRCULAR BIOECONOMY ALLIANCE

INTRODUCTION
REIMAGINING OUR WORLD AROUND NATURE

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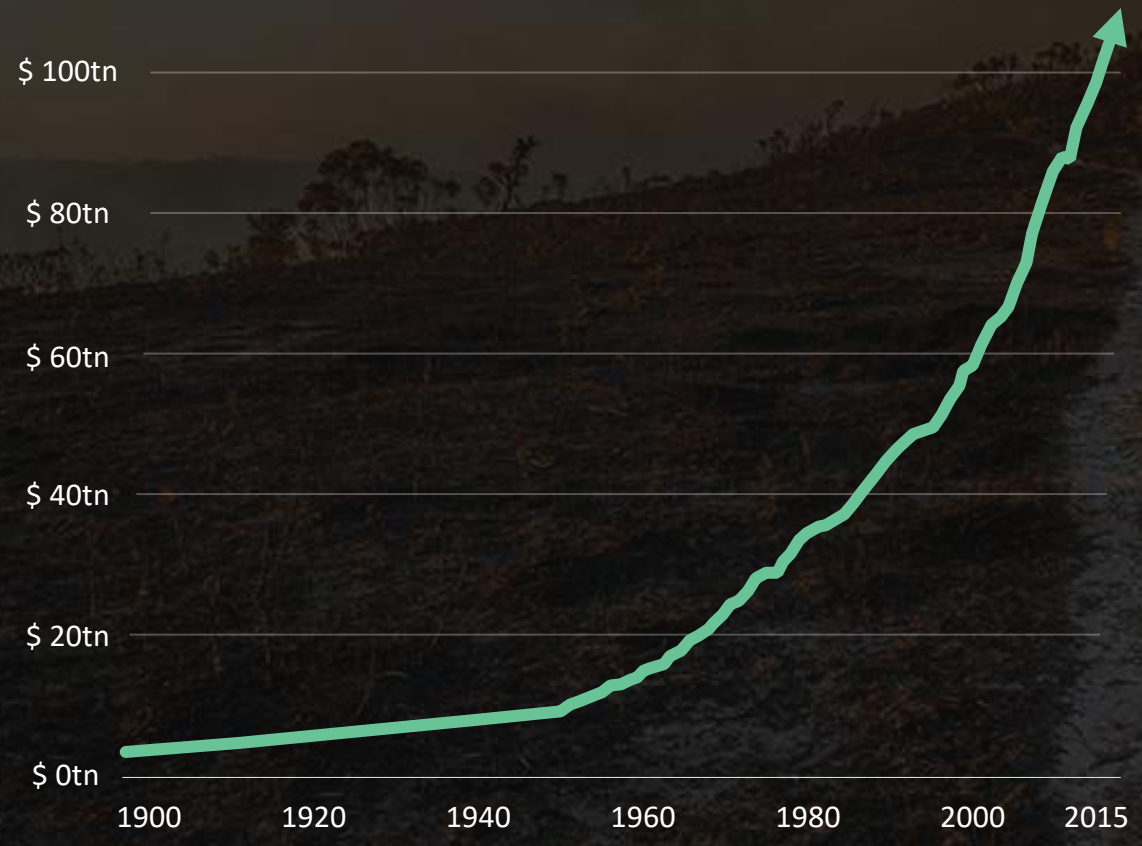
Circular Bioeconomy Alliance

OUR EXTRACTIVE ECONOMY POWERED BY FOSSIL RESOURCES HAS REACHED A TIPPING POINT

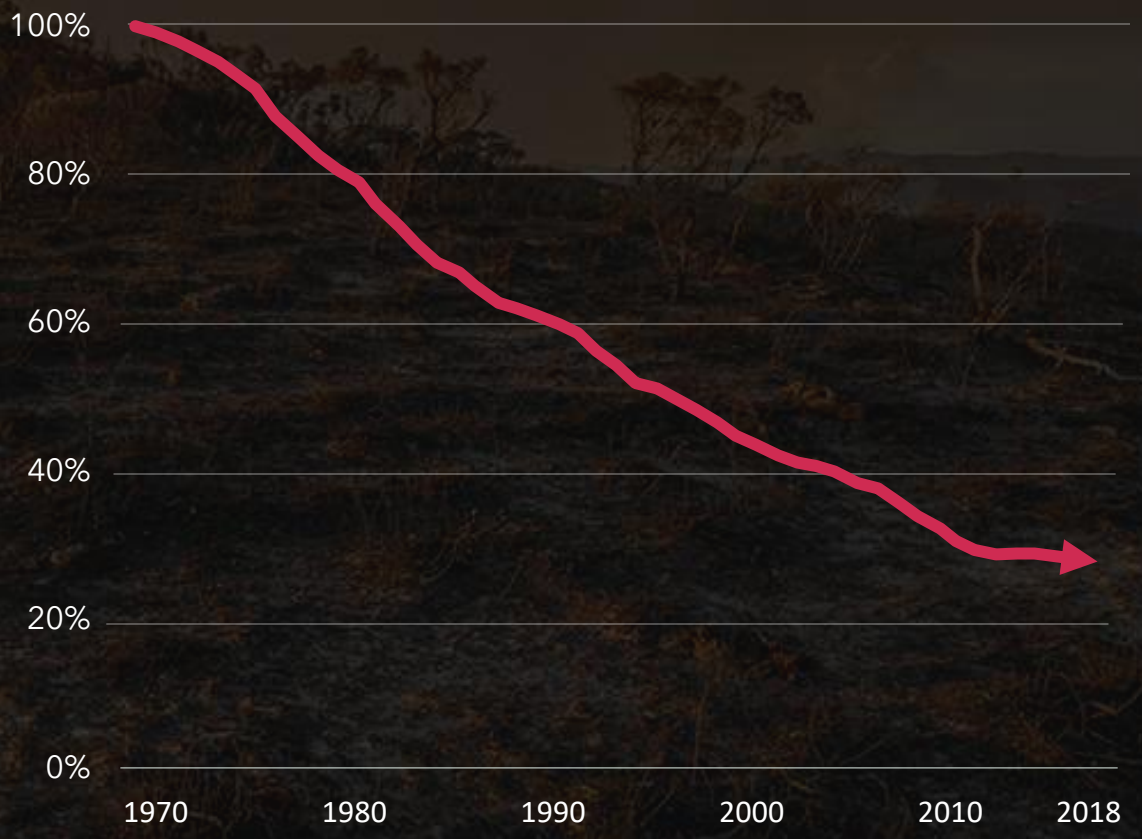
World GDP over the last hundred years

Total output of the world economy (adjusted for inflation, in USD 2011 prices)



Living Planet Index, World

The average decline in monitored wildlife populations[1].



Source: Our World in Data / World Bank, 2024. The index value measures the change in abundance in 31,821 populations across 5,230 species relative to the year 1970 (i.e, 1970 = 100%)
For illustrative purposes only.

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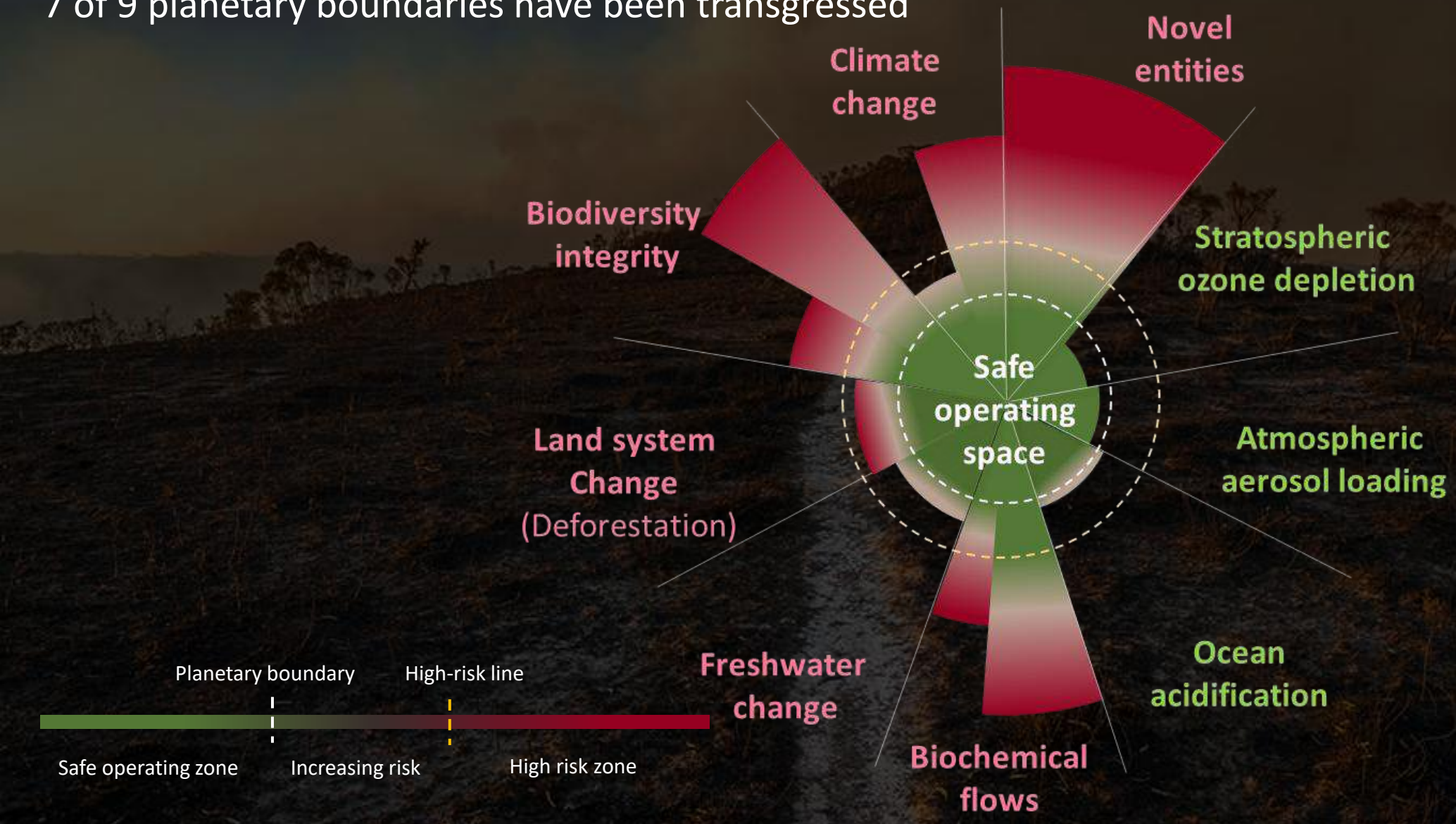
CROSSING THE SAFE OPERATING SPACE OF OUR PLANETARY SYSTEM

7 of 9 planetary boundaries have been transgressed



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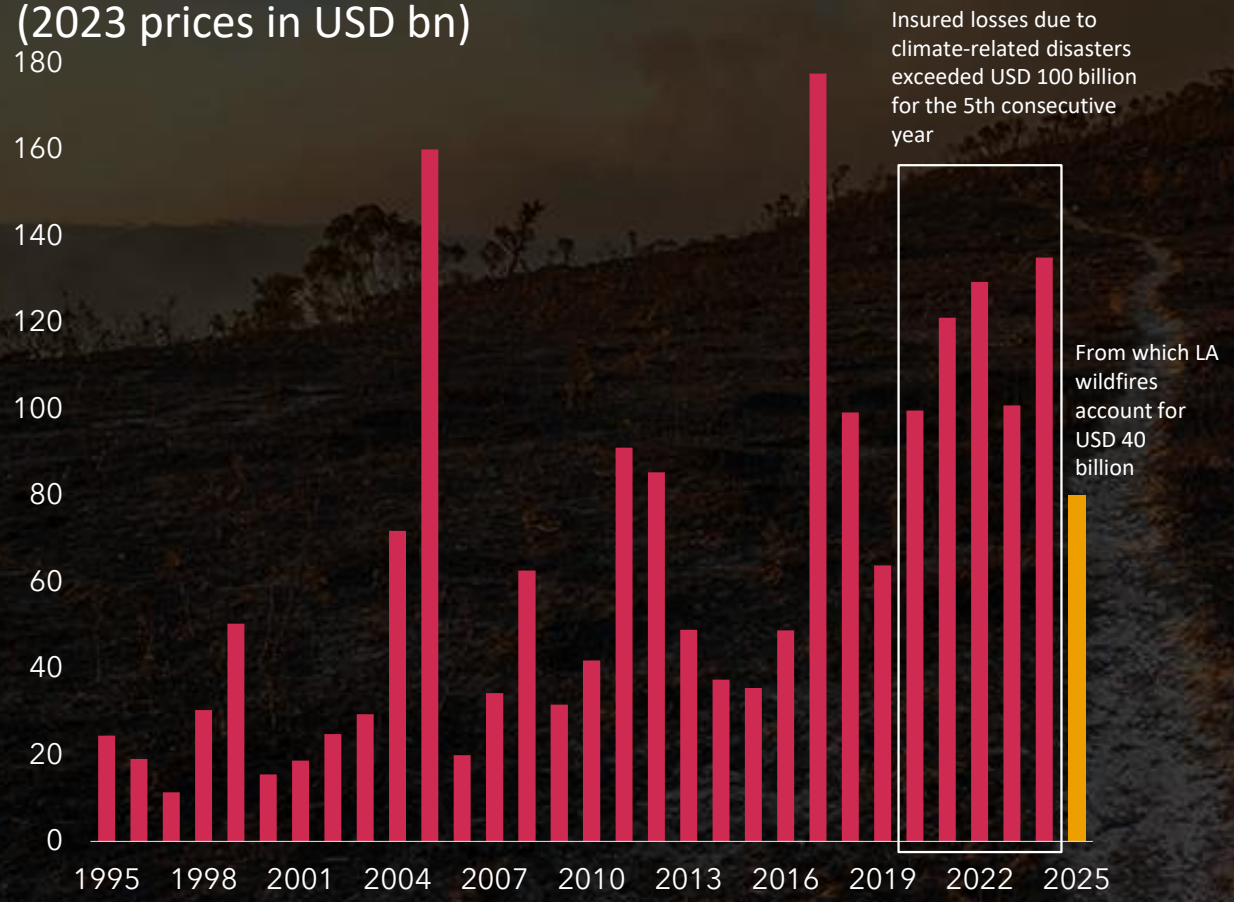
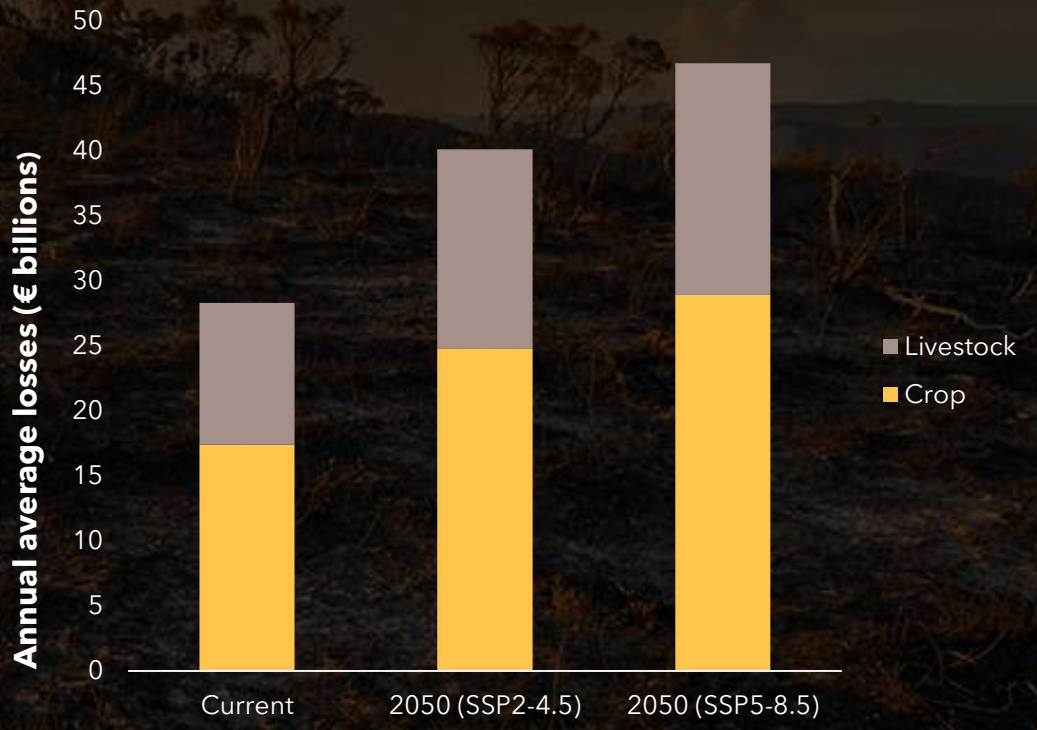
THE CLIMATE-NATURE CRISIS HAS A DIRECT IMPACT ON OUR ECONOMIC SYSTEM…

Weather-related insurance losses (2023 prices in USD bn)



EU agricultural climate losses are expected to rise from €28 billion[1] to €40-50 billion by 2050



Only 20-30% of losses are insured

Source: 1. LOIM analysis; based on EAFRD (2025). Insurance and risk management tools for agriculture in the EU. , 2. SwissRe (2022), In 5 charts: continued high losses from natural catastrophes in 2022. 3. SwissRe (2025), Wildfires and severe thunderstorms in the US

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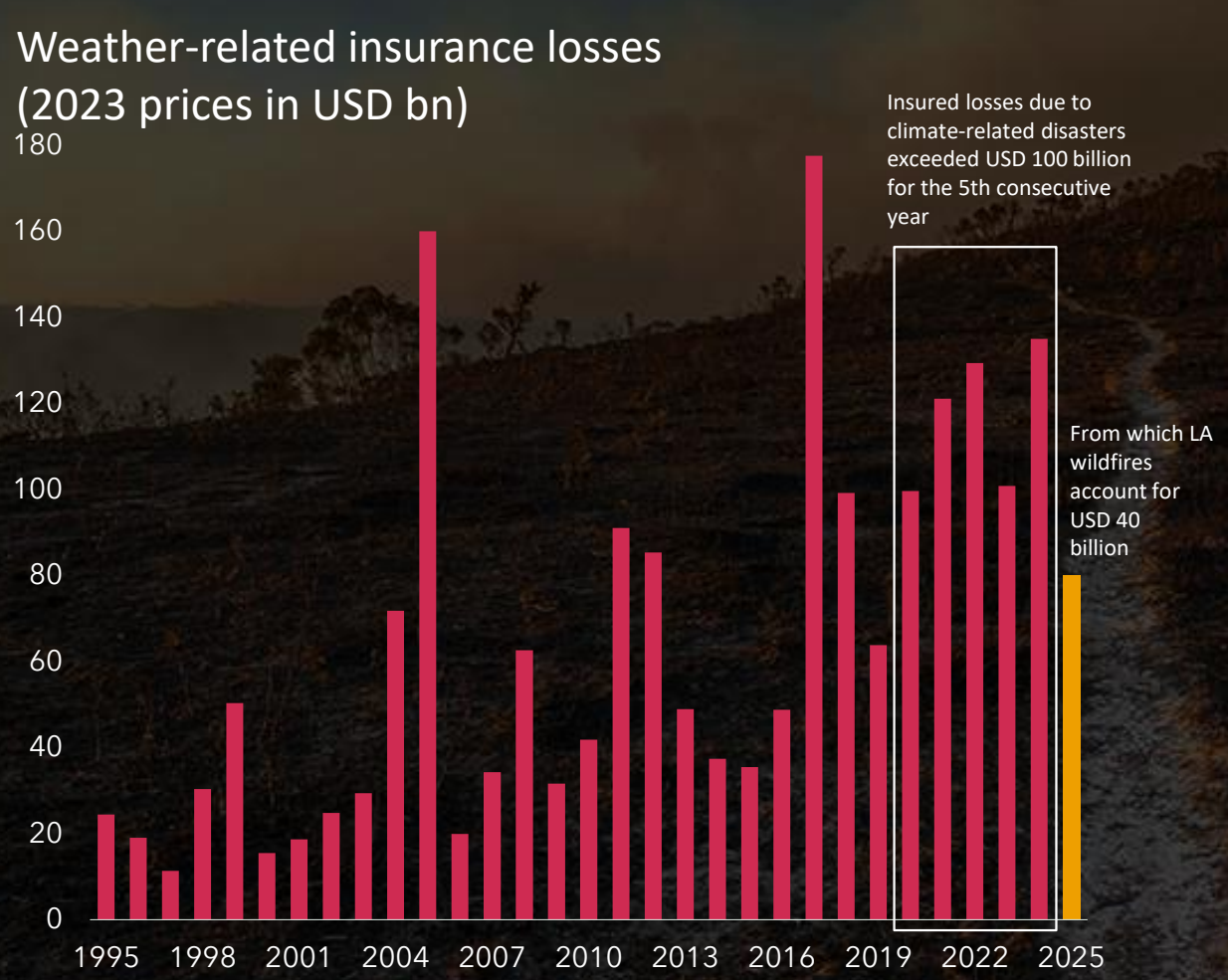
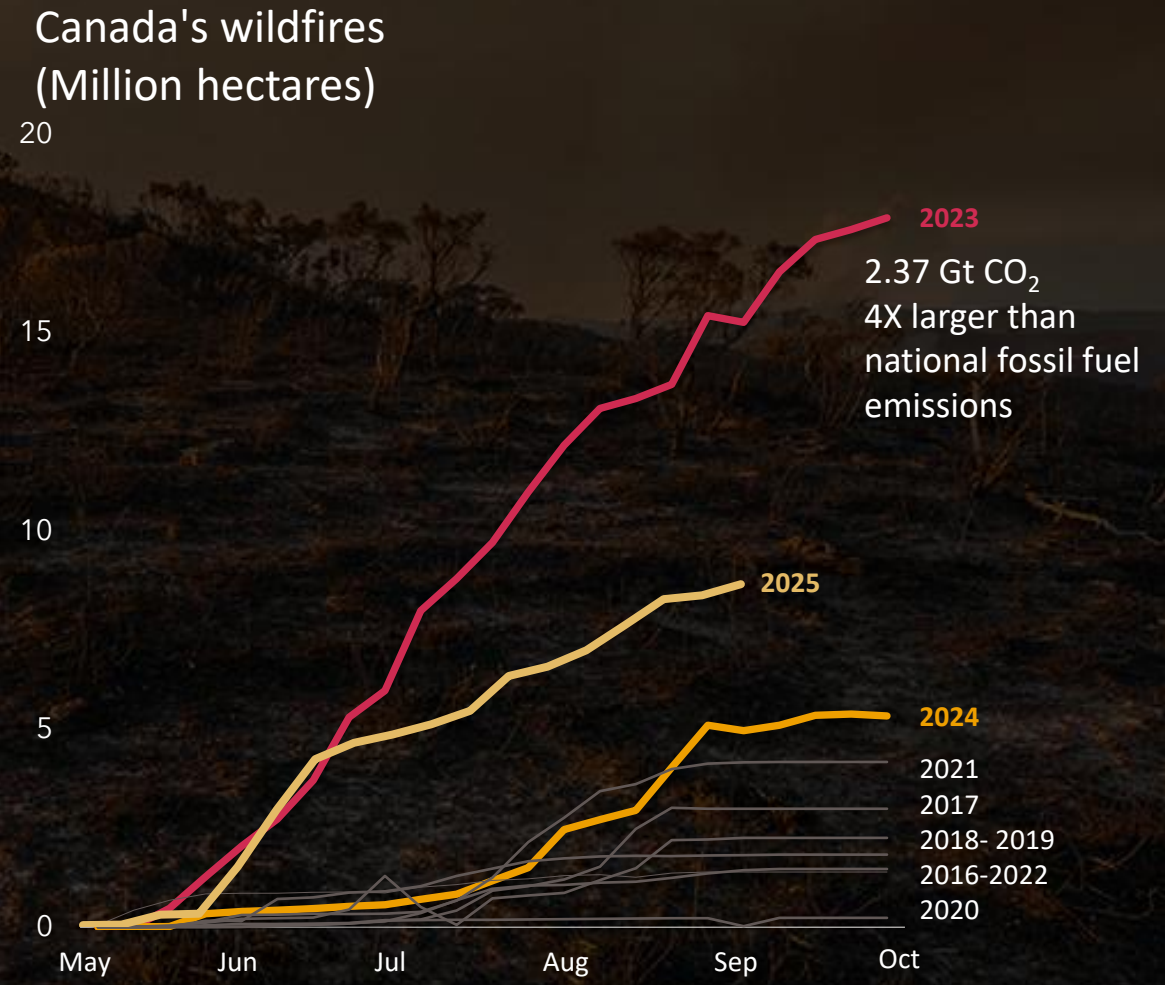
THE CLIMATE-NATURE CRISIS HAS A DIRECT IMPACT ON OUR ECONOMIC SYSTEM…





Source: LOIM analysis; based on 1. Canadian Wildland Fire Information System/CBC, 2. SwissRe (2022), In 5 charts: continued high losses from natural catastrophes in 2022. 3. SwissRe (2025), Wildfires and severe thunderstorms in the US drive global insured losses to USD 80 billion in first half of 2025. 3. Byrne et. al (2024). Carbon emissions from the 2023 Canadian Wildfires.

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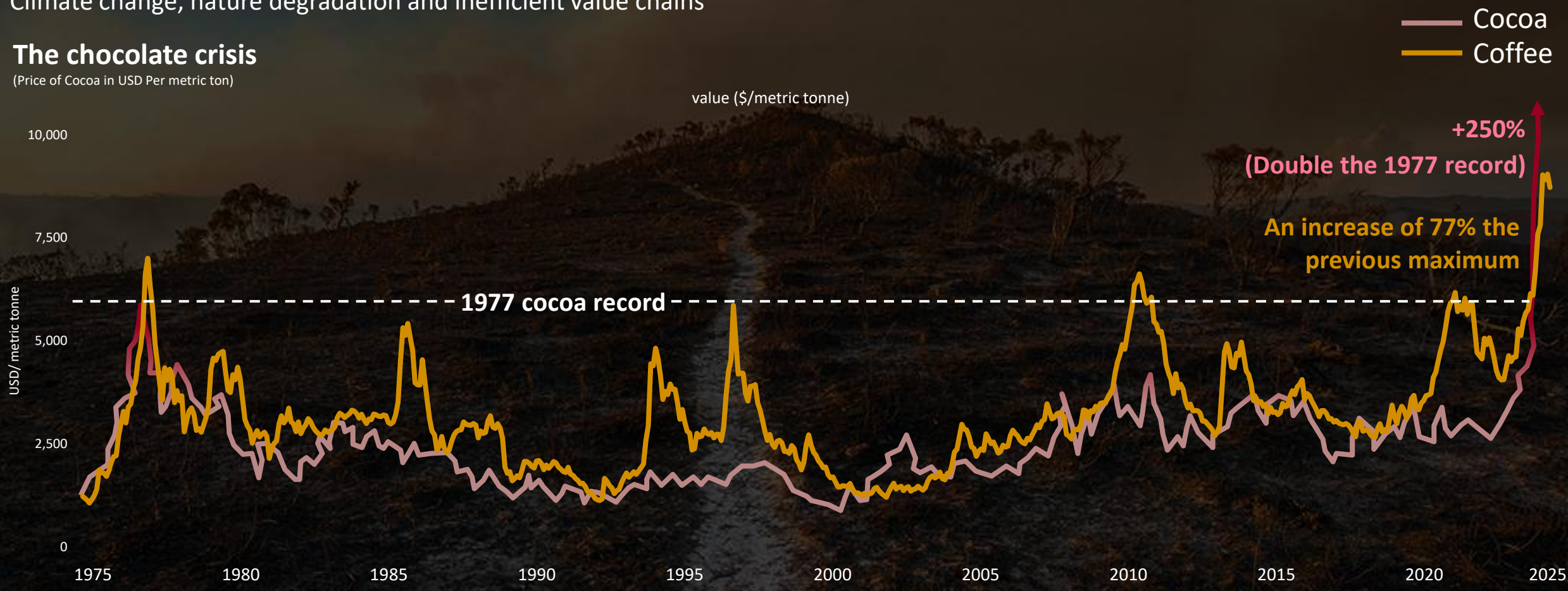
…AND THROUGH THE DISRUPTION OF GLOBAL FOOD VALUE CHAINS (1/2)…

Climate change, nature degradation and inefficient value chains



Source: Intercontinental Exchange Inc; Bloomberg; International Monetary Fund and Macrotrends. For illustrative purposes only.

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…AND THROUGH THE DISRUPTION OF GLOBAL FOOD VALUE CHAINS (2/2)…

UK: potato prices increase 22% from January to February 2024 following wet winter.

Pakistan: 50% increase in rural food prices in weeks following August 2022 floods.

India: onion/potato prices increase 89/81% in 2nd quarter of 2024 after May heatwave.

Italy/Spain: olive oil prices 50% higher in EU in January 2024 after 2022/23 drought.

China: vegetable prices rise 30% from June to August 2024 following august heatwave.

California/Arizona: vegetable prices 80% higher in US in November 2022 after western droughts.

South Korea: cabbage prices 70% higher in September 2024 after August heatwave.

Mexico: fruit and vegetable prices 20% higher in January 2024 following 2023 droughts.

Japan: rice prices 48% higher in September 2024 after August heatwave.

Ghana/ Ivory Coast: global cocoa prices 280% higher in April 2024 after february heatwave.

Vietnam: robusta coffee prices 100% higher in July 2021 after February heatwave.

Brazil: global coffee prices 55% higher in August 2024 after 2023 drought.

Indonesia: rice prices 16% higher in February 2024 after 2023 drought.

South Africa: maize prices 36% higher in April 2024 following March heatwave.

Australia: price of lettuce increases 300% in June 2022 following spring floods.

Ethiopia: food prices 40% higher in March 2023 following 2022 drought.

66.6% 90% 95% 100%
Exceedance of historical percentiles (1940-2019) by recent heat

66.6% 90% 95% 100%
Exceedance of historical percentiles (1901-2013) by recent drought

66.6% 90% 95% 100%
Exceedance of historical percentiles (1940-2019) by recent floods

Source: LOIM analysis; based on 1. Kotz M. et al (2025). Climate extremes, food price spikes, and their wider societal risks.

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A NEW PARADIGM…

“ EARTH DOES NOT BELONG TO MAN,
MAN BELONGS TO THE EARTH…MAN DID NOT WEAVE
THE WEB OF LIFE, HE IS MERELY A STRAND IN IT.
WHATEVER HE DOES TO THE WEB,
HE DOES TO HIMSELF.”

CHIEF SEATTLE

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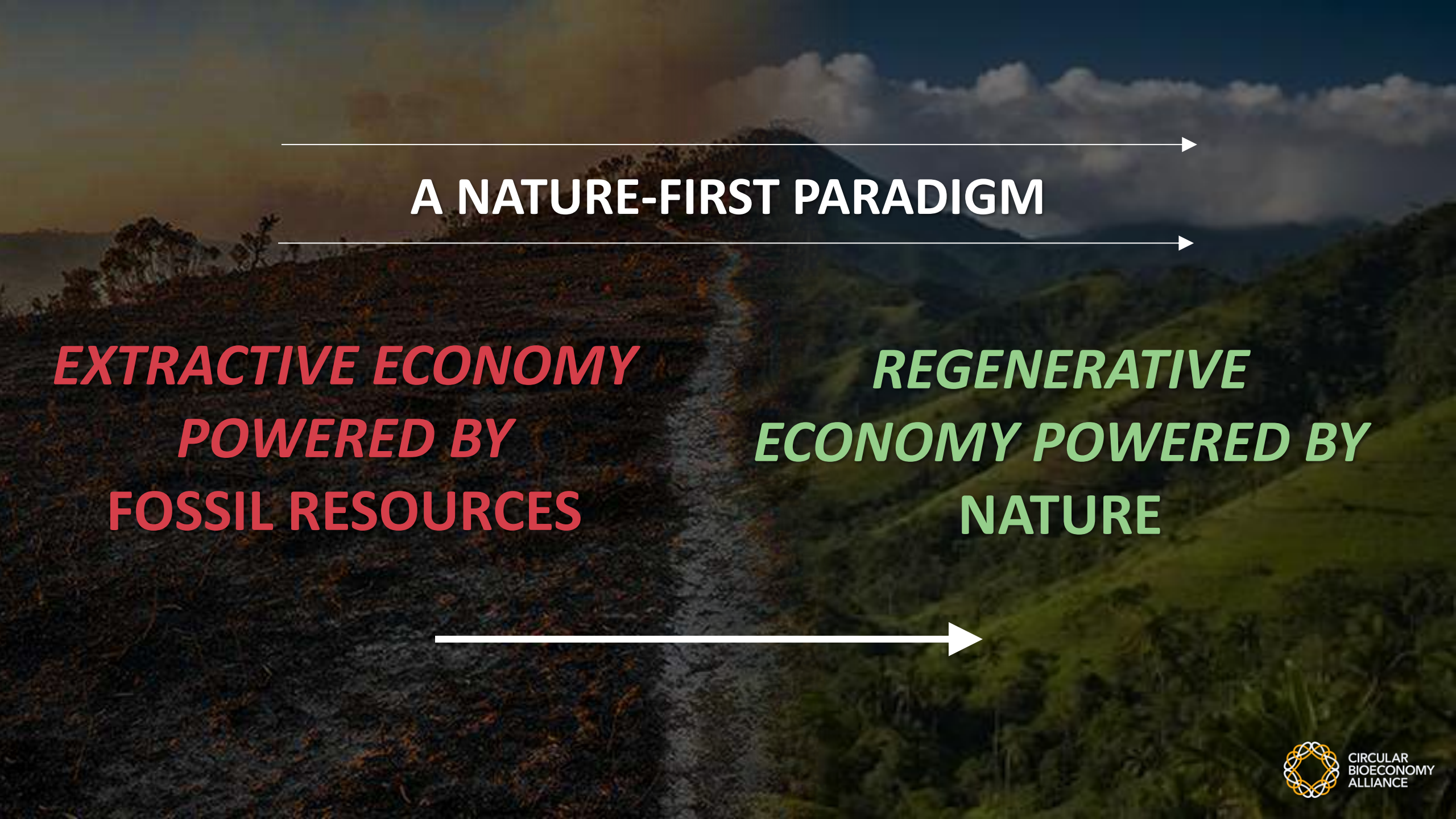
A NATURE-FIRST PARADIGM
EXTRACTIVE ECONOMY POWERED BY FOSSIL RESOURCES
REGENERATIVE ECONOMY POWERED BY NATURE
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TOWARDS A NATURE-FIRST PARADIGM: THIS IS THE CIRCULAR BIOECONOMY

Degraded landscapes

Nature-based solutions

Biodiversity

Regenerative landscapes & Resilient Communities

Science-based Principles

Equitable "global-local" partnerships

CIRCULAR BIOECONOMY

Third-sectors and final consumers

Tourism & hospitality, finance, insurance, healthcare

Primary sectors

Production of renewable biological resources: food, materials, energy, medicines,…

Landscape-to-value chain approaches

Secondary sectors

Food processing, textiles, construction, chemicals, etc.

Ecosystem services

- Provisioning services
- Regulating & maintenance services
- Cultural services

Source: Investing in Nature as the True Engine of our Economy (2020) Circular Bioeconomy Alliance. For illustrative purposes only.

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A NEW ECONOMY POWERED BY NATURE

NATURE-BASED SOLUTIONS

REGENERATIVE FARMING

SUSTAINABLE FORESTRY

CIRCULAR BIO-BASED VALUE-CHAINS

FOOD

MATERIALS

CHEMICALS

Source: Investing in Nature as the True Engine of our Economy (2020) Circular Bioeconomy Alliance. For illustrative purposes only.

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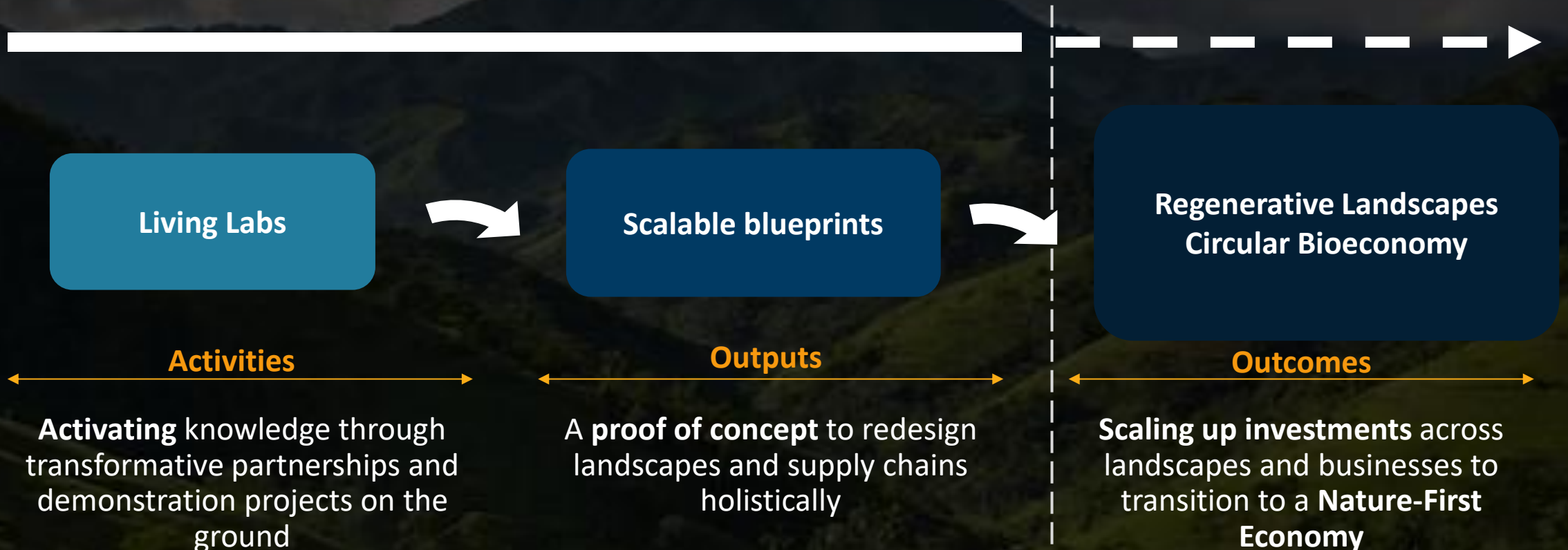
CBA LIVING LABS: CATALYSING THE NATURE-FIRST TRANSFORMATION



Source: Investing in Nature as the True Engine of our Economy (2020) Circular Bioeconomy Alliance. For illustrative purposes only.

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EXAMPLE | REGENERATIVE COTTON LIVING LAB 1.0 IN ITALY

Puglia, Italy Living Lab 1.0 | Phase 1 (2023 – present) sponsored by Armani

Living Lab → **Scalable blueprints** → **Regenerative Landscapes within a Circular Bioeconomy**

Context:

Cotton is the most important biomaterial for the fashion industry.

However, most cotton globally is produced in an extractive manner, depleting water resources, nature and the climate.

This Living Lab 1.0 is piloting how to produce regenerative cotton in Europe using an agroforestry system.

The results (so far):

A blueprint for regenerative cotton production in Italy, proving that high quality cotton can be produced while improving soil, water and biodiversity.

Armani is using the entire cotton production from this Living Lab in their supply chain in 2025.

Next steps:

CBA and SMI Fashion Taskforce facilitating discussions between Armani, farmers, scientists and suppliers to scale up this blueprint.

Preparing land for cotton agroforestry pilot

Raw cotton fibre

Partners: EFI, Pretaterra, SMI, Armani, CREA

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IN CONCLUSION

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THE NATURE-FIRST PARADIGM

A NATURE-FIRST ECONOMY IS ABOUT INVESTING IN NATURE TO TRANSFORM OUR ECONOMY, RATHER THAN TO OFFSET FOR ITS FAILURE!

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THE TREE OF LIFE

Source: Investing in Nature as the True Engine of our Economy (2020) Circular Bioeconomy Alliance. For illustrative purposes only.

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“NATURE IS COMPLETE, BUT NEVER FINISHED.”
J O H A N N
W O L F G A N G
V O N G O E T H E
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ALLIANCE

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