



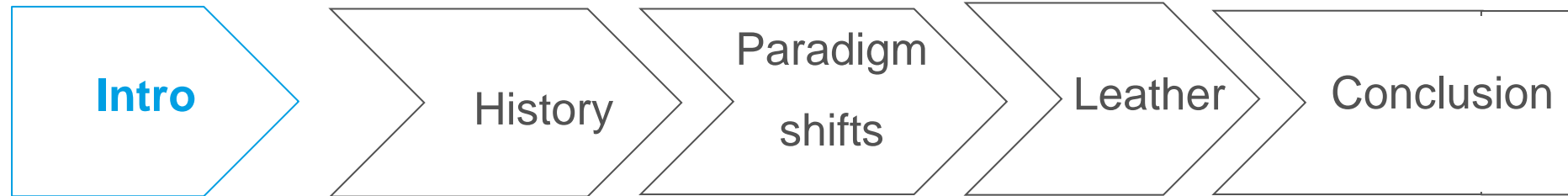
Understanding sustainability and the challenges/opportunities for the leather industry

AICLST

Whanganui, October 2022

Dr. Dietrich Tegtmeier

Understanding sustainability and the challenges & opportunities for the leather industry

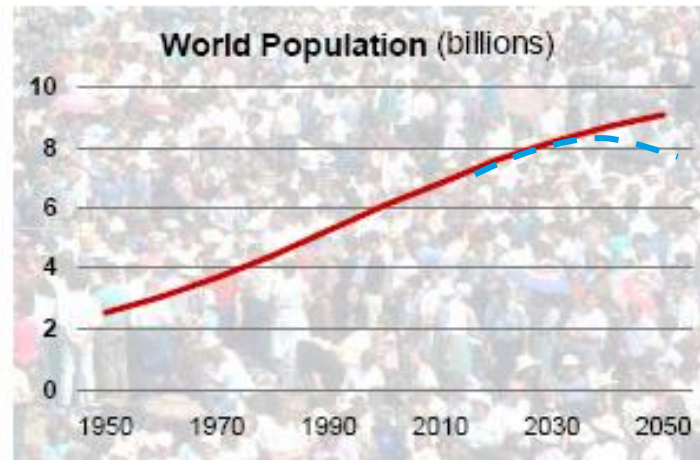




The atmosphere – our fragile, life saving protection shield



Balancing out the earth's resources with consumption and population growth is essential for future survival



**1. Increasing
Consumption and
World Population**

**2. Declining
Natural Systems**

Important Phases in the evolution of Sustainability: the first could be called the „Sustainability Cradle“



I. Carlowitz's forest farming principle (Freiberg, 1713)



Phase II should be named the „Sustainability Ice Age“



- I. Carlowitz's forest farming principle (Freiberg, 1713)
- II. Industrial revolution was a sustainability ice age; it has frozen any sustainable development until mid of 20th century



Engine fabrication August Borsig (um 1847)

Phase III - time of “Harm Reduction” Generation 1



- I. Carlowitz's forest farming principle (Freiberg, 1713)
- II. Industrial revolution was a sustainability ice age; it has frozen any sustainable development until mid of 20th century
- III. 1950ies/60ies pollution required immediate corrective actions
 - Installation of End of pipe technologies



Source: de.wikipedia.org

Bayerwerk / Leverkusen (1965)

End of pipe technologies

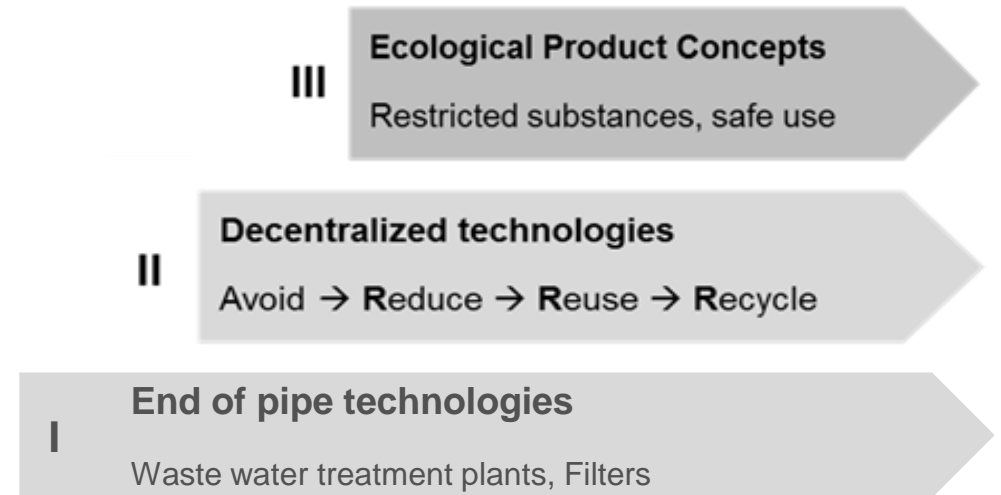
Waste water treatment plants, Filters

Phase III - time of “Harm Reduction”

Generations II and III of push programs followed in the 80ies



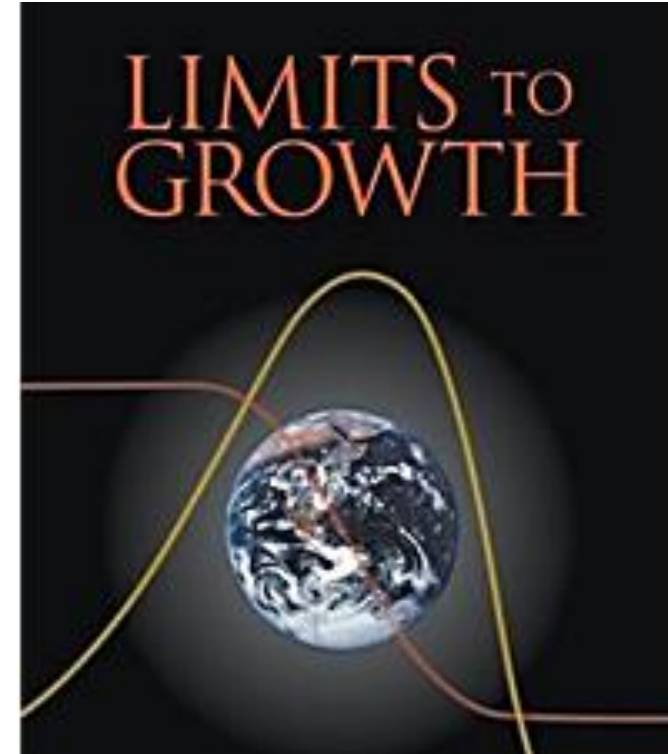
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- II. Industrial revolution was a sustainability ice age; it has frozen any sustainable development until mid of 20th century
- III. 1950ies/60ies pollution required immediate corrective action
 - Installation of End of pipe technologies
 - In the 1980ies the focus was shifted even towards decentralized protection technologies
 - In the 1990ies the scope even incorporated product integrated aspects



Important Change: phase IV can be called the „Rude Awakening“ the beginning of sustainability mind setting



- 1972 Club of Rome initiated study: “Limits of Growth” hammered in like a bomb blast



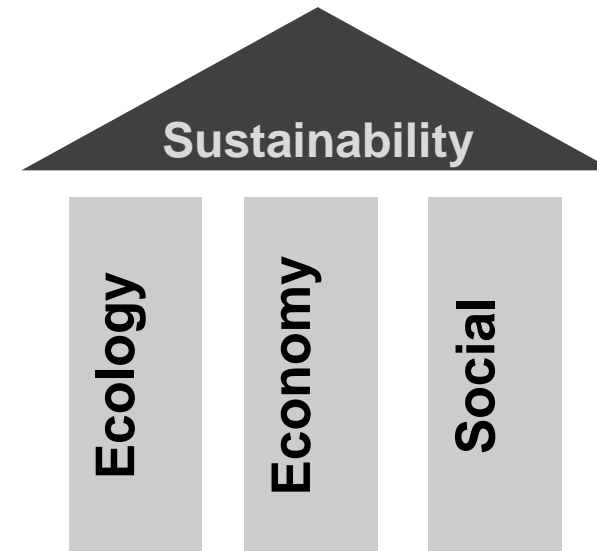
Donella and Dennis Meadow's

Phase V: start of the global Sustainability Governance



- UN World Commission on Environment and Development (Brundtland Commission, 1983)

- **Ecology:** e.g. global warming, deforestation, fossil resources, health threatening
- **Economy:** e.g. unemployment, financial instability, outstanding debt
- **Social:** e.g. poverty, child labor, violations



Sustainability ... aims to meet today's human needs without compromising the ability of future generations

Phase VI finally Sustainability achieved the Global Reach



- Rio summit (1992)
 - ➔ Fight of poverty should have priority,
 - ➔ 60 % reduction of CO2 emission until 2050,
 - ➔ convention for protection of bio-divisibility,
 - ➔ declaration against deforestation,
 - ➔ convention of fight against desert extension
- Kyoto protocol (UN, 1997)
- Non Governmental Organizations (NGO's) became the driving force for many initiatives
- First voluntary partnerships for binding commitments were established (e.g. Responsible Care)



world leaders meeting during the summit segment of the United Nations conference on environment and development - Rio Earth Summit - on 13 June 1992 in Rio de Janeiro, Brazil. Photograph: UN photo

Phase VII, transition to the Strategic Sustainability Era



- Millenium Development Goals (UN MDG, Y2K)
 - Cut down poverty by half until 2015
 - Push education and health programs
 - Eliminate social and cultural imbalances
 - ...



„Peace, Security, Development
go hand in hand with
Prosperity and Growing Markets“

Kofi Annan

Phase VII, transition to the Strategic Sustainability Era

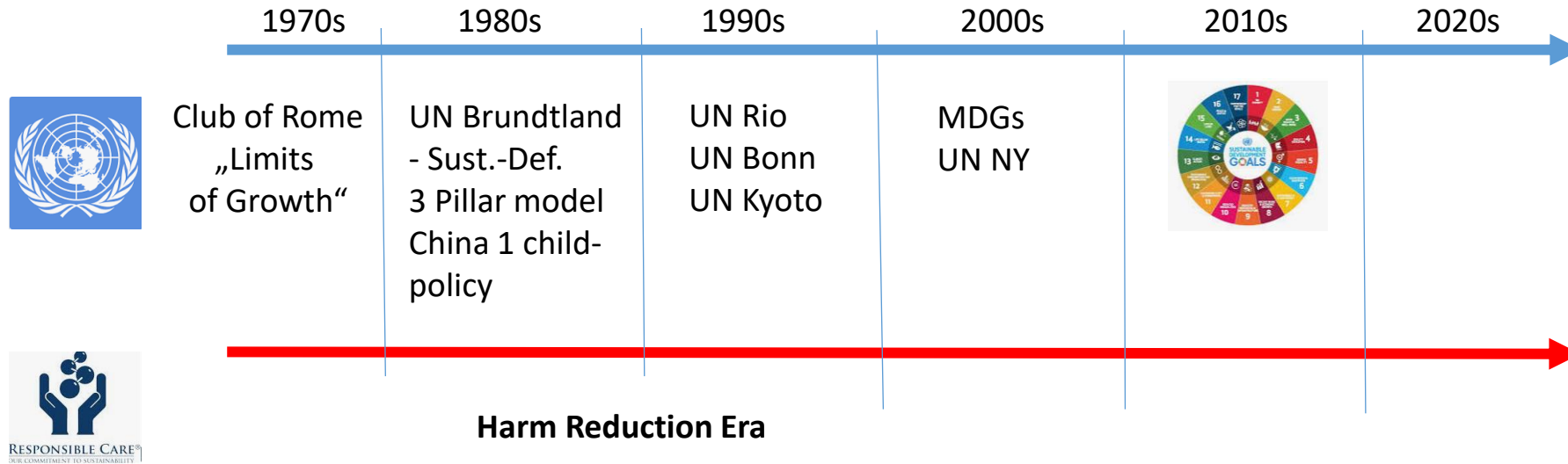
Binding Climate Targets for all nations are the ongoing debate



- World Climate Conference (Durban, 2012)
- World Climate Conference (Melbourne, 2014)
- World Climate Conference (Paris 2015)
- Global Compact
 - 10 principles on: Human rights, Labor, Environment, Anti-Corruption
 - 12.000+ participants
 - Companies started to incorporate sustainability targets in their strategies

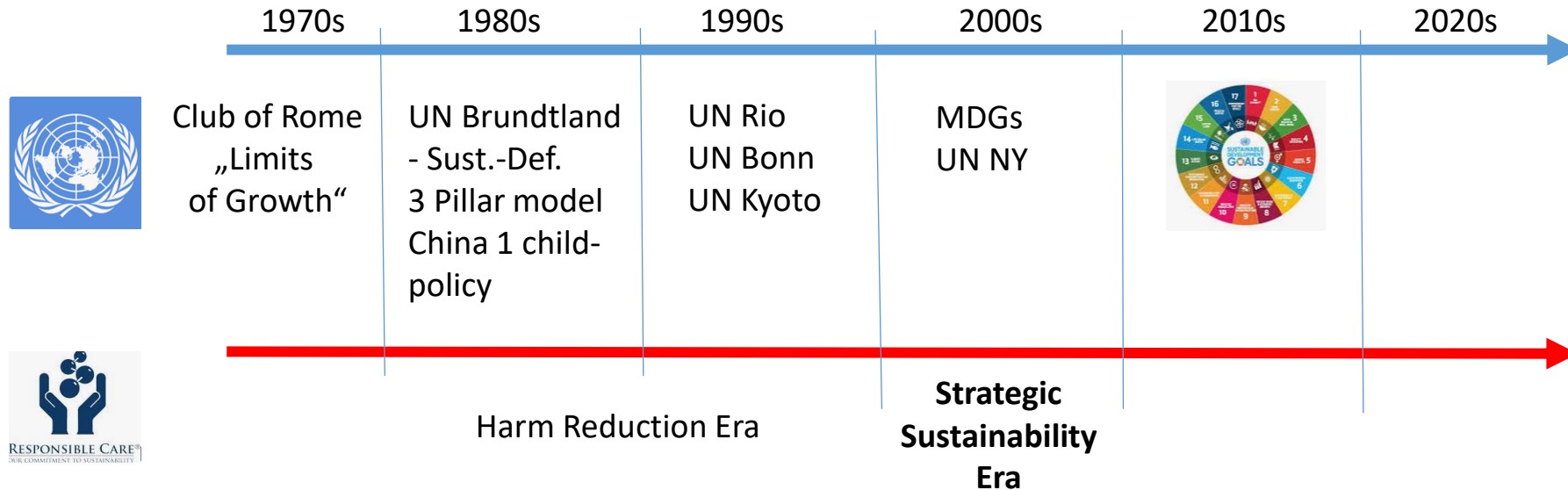


During these Sustainability Evolution Process the chemical industry went through different eras



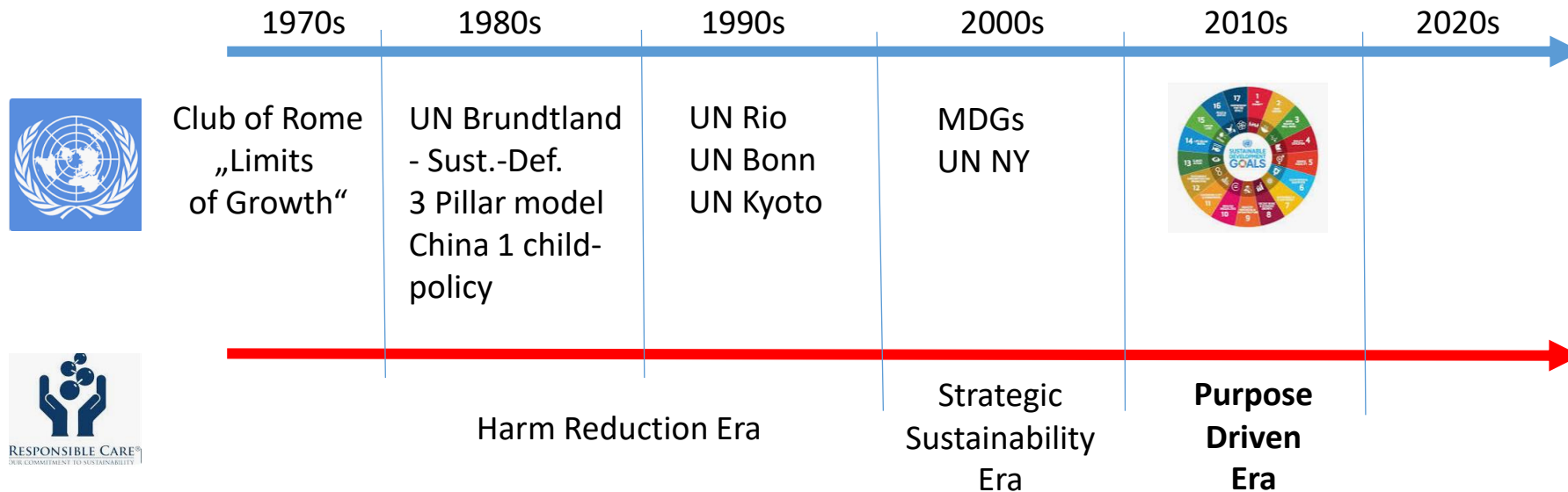
- Fokus on end of pipe technologies and benign emissions
- Rapid increase of regulatory activities shifted the focus on consumer products
- Strong push from NGO's with the need to retain a social license to operate
- The outcome was to minimize negative impact and have a better social behaviour

During these Sustainability Evolution Process the chemical industry went through different eras



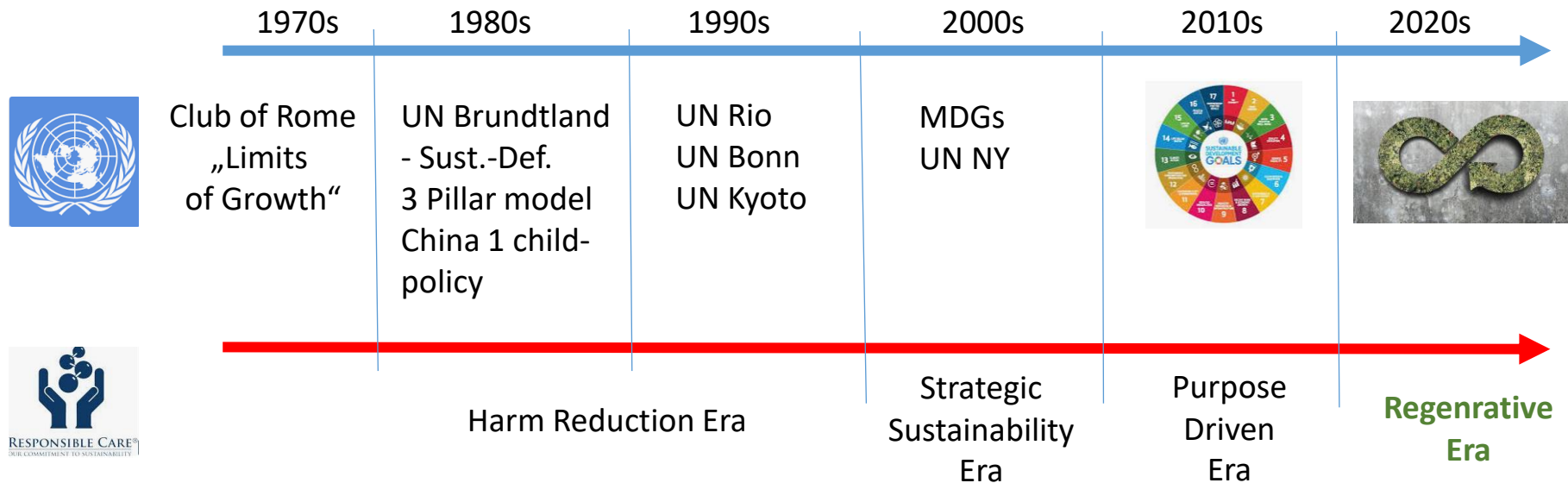
- 1st smartphone decade
- Volatile economy
- Companies see the need for a comprehensive approach
- Doing less harm no longer enough, but also the ability to exist in future becomes part of a strategy

During these Sustainability Evolution Process the chemical industry went through different eras



- Strategic Plan + Action = Purpose
- „No plan „B“
- Not profit, but purpose driven business plan
- Purpose is the foundation, and require a culture of support and advocacy to amplify

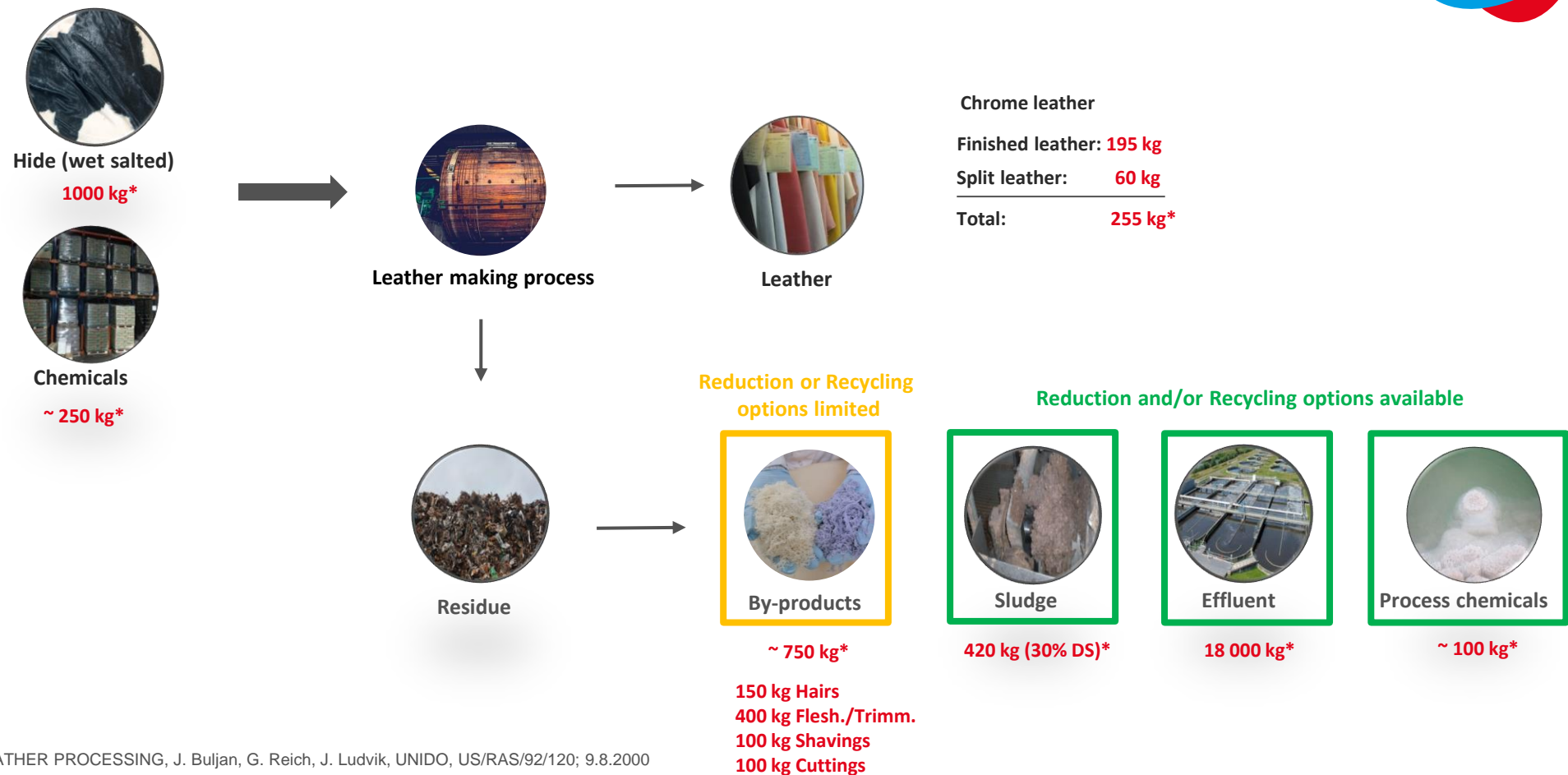
During these Sustainability Evolution Process the chemical industry went through different eras



- Galvanizing the entire organization and supply chain for “All In“- concepts
- sensitizing all stakeholders
- redesigning commerce
- renewable energy, carbon neutral processes
- zero waste concepts, closing the loop

$\Delta RP > \Delta GDP$

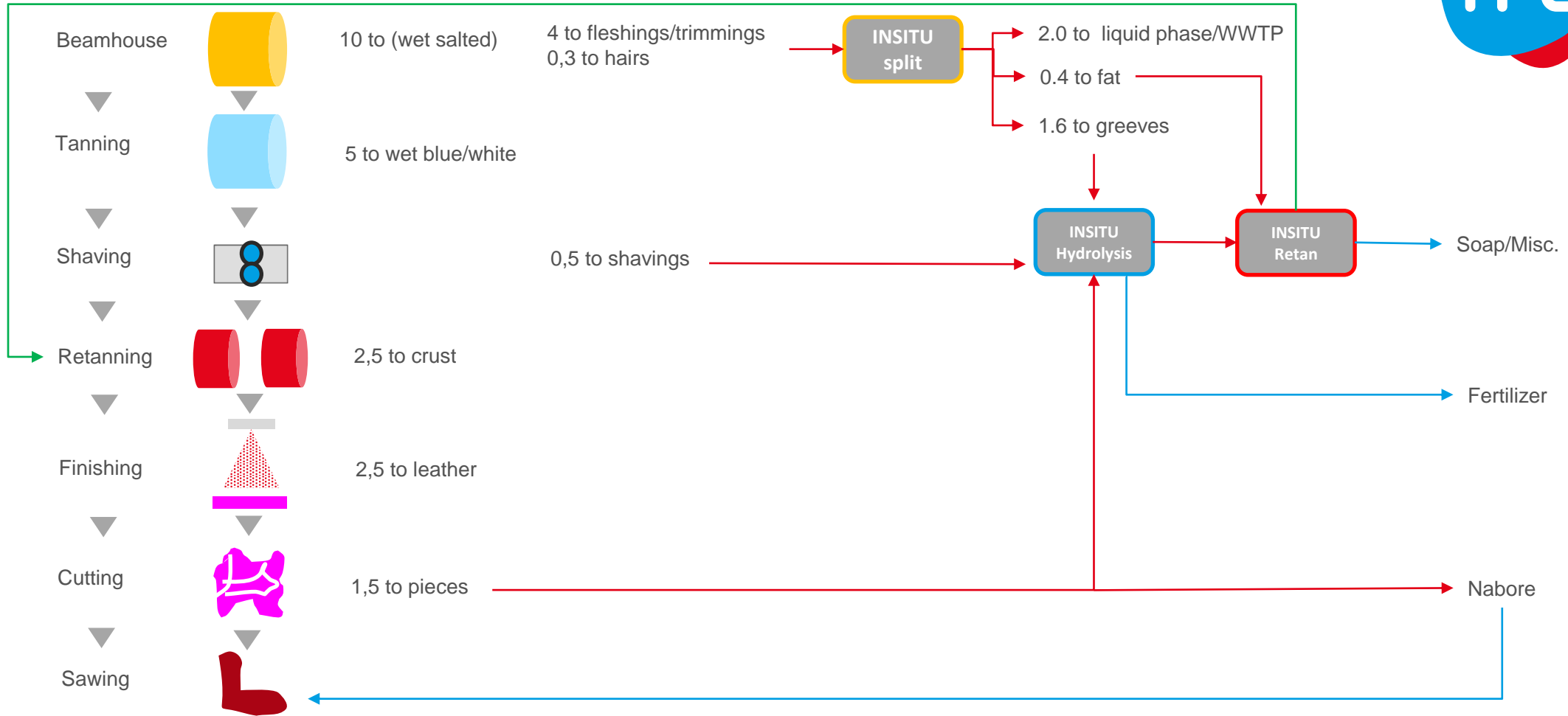
Mass Balance for chrome tanned leather



*MASS BALANCE IN LEATHER PROCESSING, J. Buljan, G. Reich, J. Ludvik, UNIDO, US/RAS/92/120; 9.8.2000

INSITU concepts

Turning a Tannery into a Full Cycle Collagen Factory

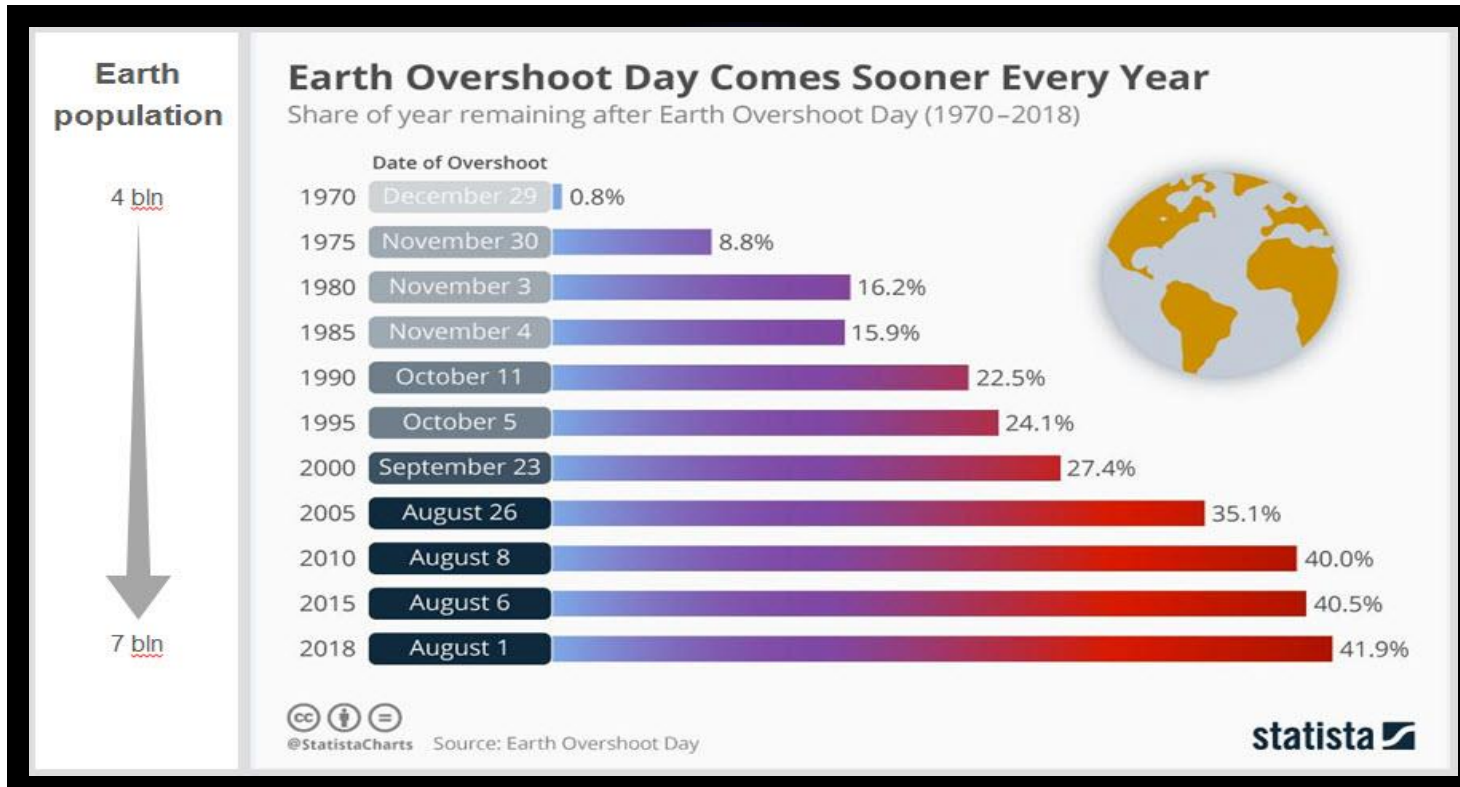


In addition: all available sustainability industry tools should be used and further improved



- Conduct an environmental and social LWG audit of your tannery operation
- Use ZDHC MRSL approved chemicals
- Calculate the PCF/LCA of the leather
- Establish a traceable raw material sourcing /tracing as much as possible
- Maximize the bio-content in the recipe development
- Make a C14-Analysis of leather articles to report the bio-content of the leather article
- Support/Drive animal welfare & regenerative agriculture concepts if possible
- Support the industry campaigns to improve the image of leather
- Join LN, the global club of promoters/defenders of Leather as a sustainable material





The Earth Overshoot Day

July, 28th

- If the population reaches 9.6 billion by 2050, an equivalent of 3 planets would be required to sustain current life style

Source: <https://www.umweltbundesamt.de/themen/earth-overshoot-day-2017-ressourcenbudget>



- The world has understood:
 - We need a paradigm shift in material management
“Linear economy” → “Circular economy” → “Regenerative Era”
 - Philosophy of repair, working at symptoms is not good enough
“Prevention/Anticipation” should be the base of the new thinking
 - Neoclassical thinking of permanent growth needs to get redefined
“Homo Economicus” → “Homo Sustines”



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- The leather industry has to set priorities:
 - Shift from a tannery into a collagen factory
 - Adapt all available technologies, tools and industry services
 - **Leather can be the ultimate sustainable material**



Sustainability – our license to operate



Thank you for attention