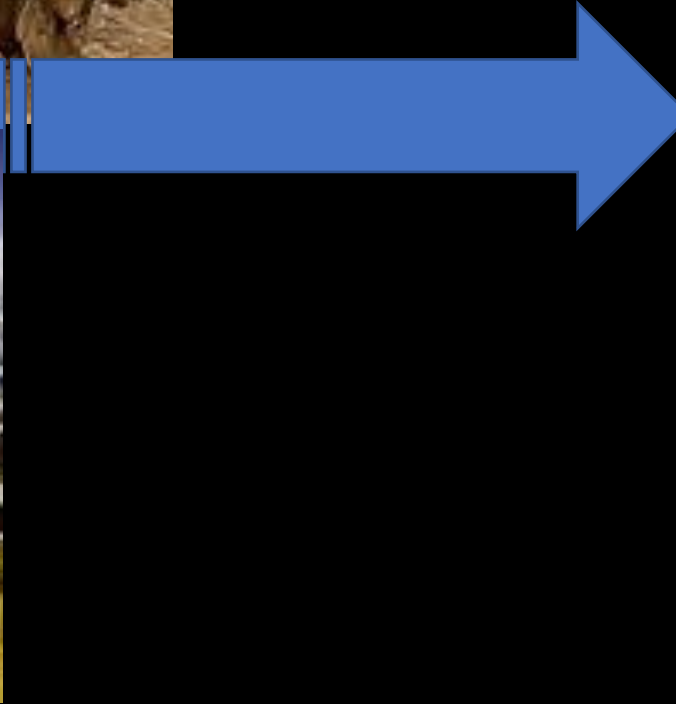


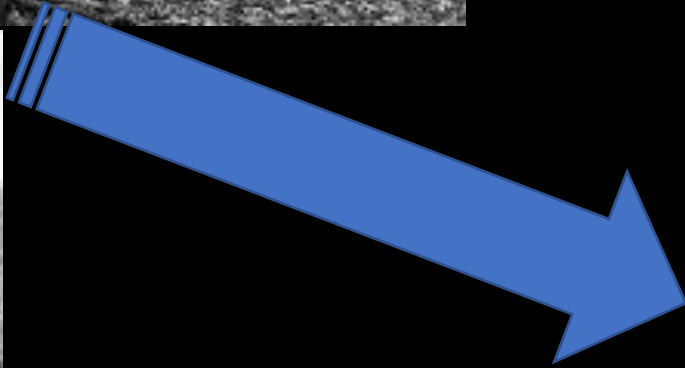
Regenerative Agriculture

Just another buzzword, or a much needed paradigm shift?

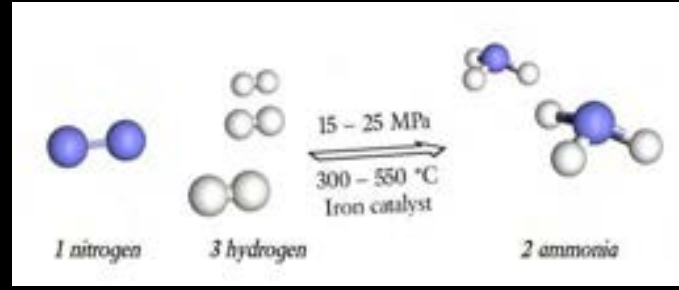
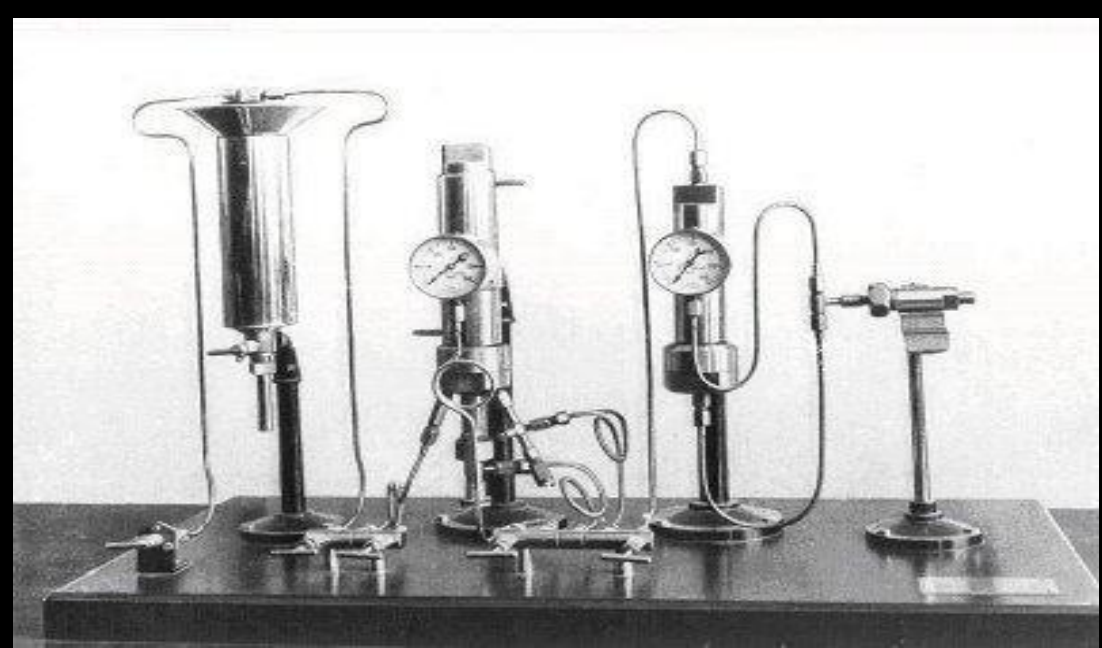




12,000-10,000BC	1850 -1900's	1909	1960's	1960's
Domestication of the wild				



12,000-10,000BC	1850 -1900's	1909	1960's	1960's
Domestication of the wild	Mechanisation of agriculture and the industrial revolution			



Carl Bosch (chemical engineer)



Fritz Haber (chemist)

12,000-10,000BC	1850 -1900's	1909	1960's	1960's
Domestication of the wild	Mechanisation of agriculture and the	Artificial nitrogen fixation		



12,000-10,000BC

1850 -1900's

1909

1960's

1960's

Domestication of the wild

Mechanisation of agriculture and the

Artificial nitrogen fixation

The Green Revolution

Degenerative agriculture

Ecosystem entropy: complex to simple

= Loss of topsoil, nature's sponge

= Loss of biodiversity, life



12,000-10,000BC

1850 -1900's

1909

1960's

1960's

Domestication of the wild

Mechanisation of agriculture and the industrial revolution

Artificial nitrogen fixation

The Green Revolution

12,000-10,000BC	1850 -1900's	1909	1960's	1960's
Domestication of the wild	Mechanisation of agriculture and the industrial revolution	Artificial nitrogen fixation	The Green Revolution	



12,000-10,000BC	1850 -1900's	1909	1960's	1960's
Domestication of the wild	Mechanisation of agriculture and the industrial revolution	Artificial nitrogen fixation	The Green Revolution	The birth of Sustainability

The different branches of sustainable agriculture

1960's →

Sustainable agriculture

Practices:

- No till
- Organic inputs
- Crop diversity
- Cover crops and mulch
- Permaculture
- Agroforestry
- Etc...

Motivation:

Adopt these practices to stop the ecosystem destruction caused by conventional farming

Organic agriculture

No chemical fertilizer or pesticide.

Certification

Motivation:

Clear and simple framework:

- bind farmers and policy makers,
- to inform consumer decisions

The different branches of sustainable agriculture

1960's →

Sustainable agriculture

Practices:

- No till
- Organic inputs
- Crop diversity
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- Etc...

Motivation:

Adopt these practices to stop the ecosystem destruction caused by conventional farming

Conservation agriculture

No-till
Soil covers

Not against chemical input, but changes to

- Timing
- Amount
- Type

Motivation:

Transition towards sustainable practices

The different branches of sustainable agriculture

1960's →

Sustainable agriculture

Practices:

- No till
- Organic inputs
- Crop diversity
- Cover crops and mulch
- Permaculture
- Agroforestry
- Etc...

Motivation:

Adopt these practices to stop the ecosystem destruction caused by conventional farming

Permaculture

• Production in harmony with nature

• Uses design principles that imitate natural ecosystems

Motivation:

Tap into the inherent abundance and resilience of nature

The different branches of sustainable agriculture

1960's →

Sustainable agriculture

Practices:

- No till
- Organic inputs
- Crop diversity
- Cover crops and mulch
- Permaculture
- Agroforestry
- Etc...

Motivation:

Adopt these practices to stop the ecosystem destruction caused by conventional farming

Climate-Smart agriculture

- Mitigation
- Adaptation
- Increased resilience of the land

Motivation:

Adaptation of small scale farming systems to climate change

1960's →

Sustainable agriculture

Practices:

- No till
- Organic inputs
- Crop diversity
- Livestock integration
- Cover crops and mulch
- Permaculture
- Agroforestry
- Etc...

Motivation:

Adopt these practices to stop the ecosystem destruction caused by conventional farming

1970's →

Agroecology

Practices:

- Everything under sustainable agriculture
- PLUS A SOCIAL DIMENSION
- Farmer's associations and cooperatives
 - Peer-to-peer knowledge sharing
 - Integration of indigenous practices
 - Systems-thinking

Motivation:

Apply these practices to stop landgrabbing and centralization of power with the industrial multi-national companies

2010's →

Regenerative agriculture

Practices:

- Everything under agroecology
- PLUS A CLIMATE DIMENSION
- Carbon sequestration
 - Maximized photosynthesis
 - Restoration of the water cycle
 - Regenerate discarded and marginalised land

Motivation:

Adopt these practices to reduce the greenhouse gasses in the atmosphere and cool the planet

Regenerate...

land previously degraded and discarded:

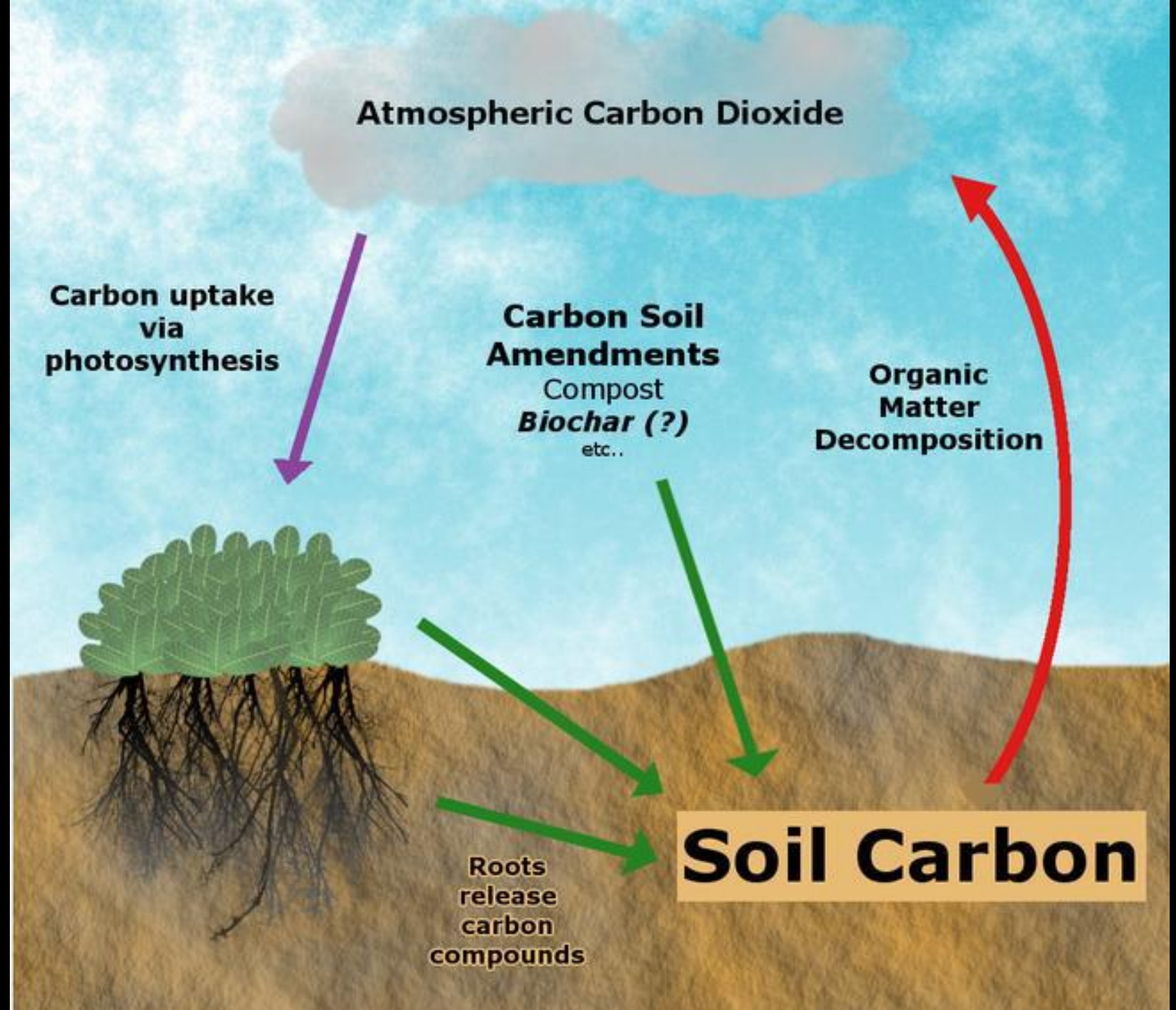


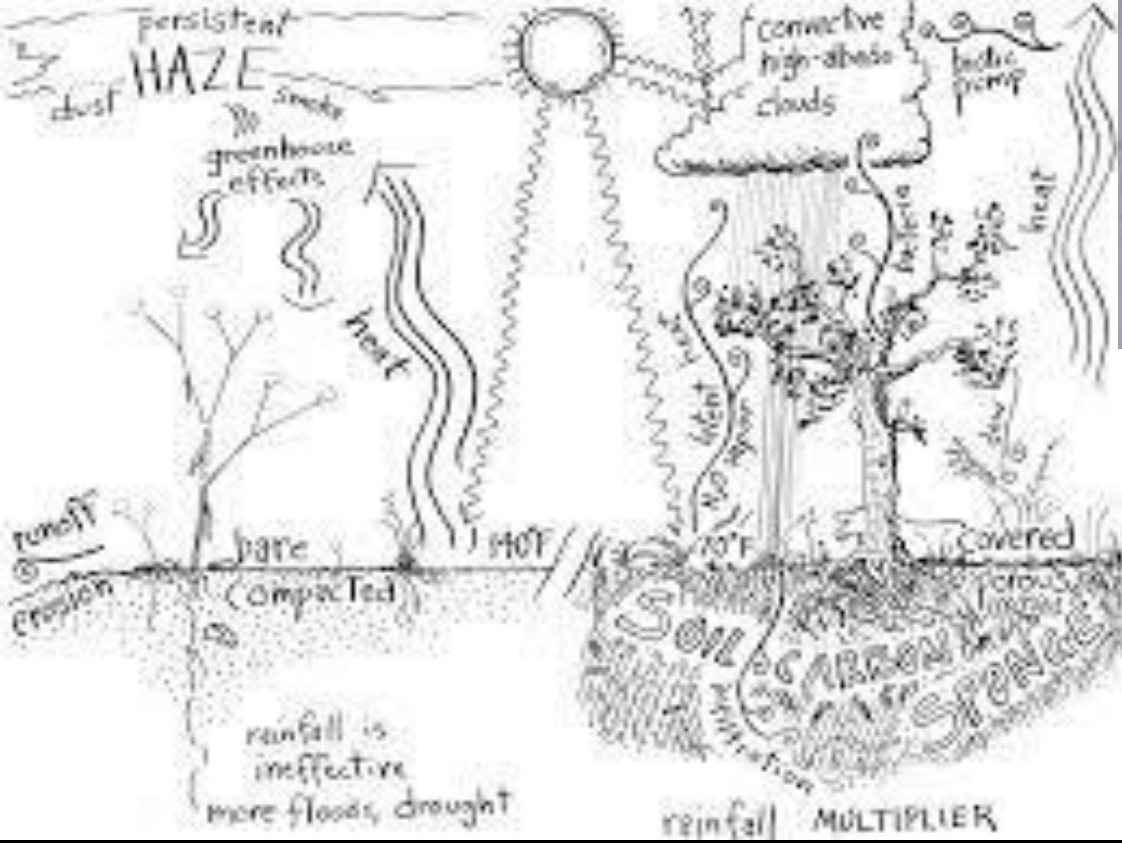
The example of the **Loess plateau**.



Regenerate...

the balance of greenhouse gasses in the atmosphere





Regenerate...

the water cycles that cool the planet and facilitate life



RESTORING THE WATER CYCLE TO COOL THE CLIMATE

WALTER JEHNE



• Similarities

- Cover crops
- Intercropping
- Diversify production
- Perennial crops (native species)
- CO2 sequestration + biochar



Norway:

- Grain and grass farm without livestock
- Mostly conventionally farmed today
- Clay soils, temperate climate

Mozambique:

- ~1 ha- family farms
- Subsistence
- Mixed input, organic without trying to be
- Sandy soils, tropical climate

Differences

- Reduce tillage stepwise until no-till
- Source off-farm organic input (livestock)
- Hedgerows

- Syntropic agroforestry
- Water management installations/design
 - Contour planting
 - Riparian buffers
- Compost
- Integrate livestock



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