



Knowledge grows

Yara South Africa's position on Regenerative Agriculture

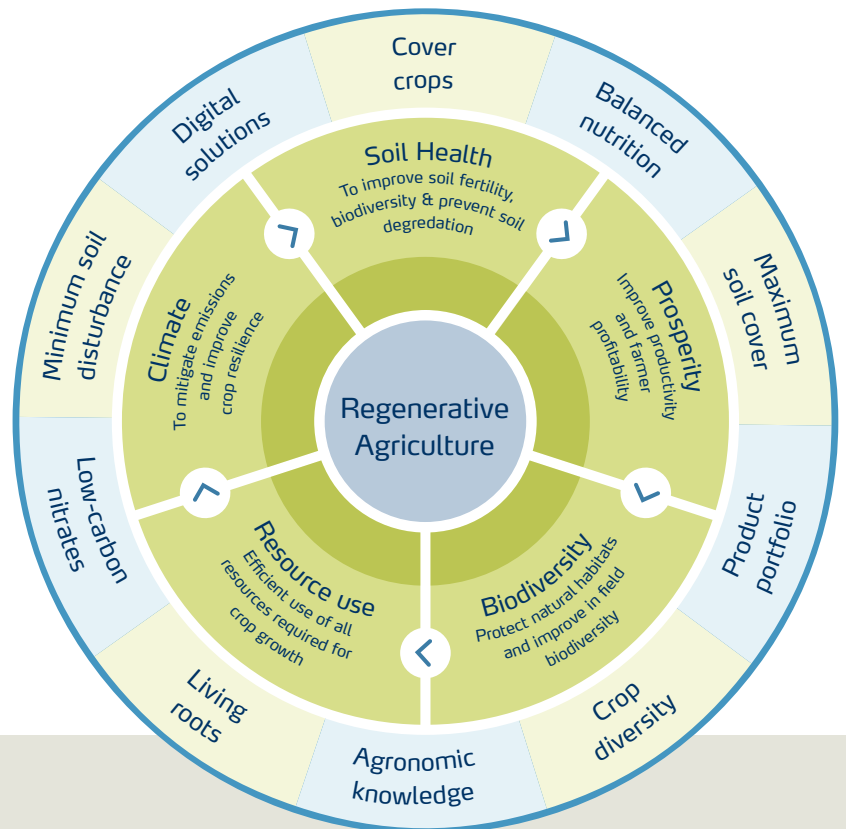
"Growing a Nature-positive food future".

How does Yara approach RA to grow a Nature-Positive food future?

Growing challenges of food security, climate change and soil degradation demands immediate action.

Regenerative agriculture (RA) is a systematic, outcome-based approach to adopt the best sustainable farming practices that positively affects soil health, climate, resource use, biodiversity, and farmer prosperity.

Yara's comprehensive product portfolio, low-Carbon Nitrates, agronomic knowledge, balanced crop nutrition approach, digital solutions, and promoting conservation agriculture principles, Yara can make a significant contribution towards scaling up regenerative outcomes in the food sector.



Yara's current view on soil health

Soil health is a concept that deals with the integration and optimization of the chemical, physical and biological processes of a soil that are important for sustained productivity, environmental quality, and net farmer profits over the long-term.

Soil health cannot be measured directly, but soil properties or indicators (e.g., pH, nutrient content, texture, soil depth, SOC, and microbial biomass) can be measured that indicate the soil health status. A "healthy soil" however differs from field to field due to heterogenous nature of soil, climate, and crop types. Soil health assessments therefore only acts as a

baseline within each field to manage or enhance various soil health indicators to improve the overall soil health status of the specific field.

Photosynthesis is the 1st step to soil health - while the sun shines there is a potential to improve soil health.

Yara South Africa's position on Regenerative Agriculture

Yara's position in the RA system:

- **Increased agricultural output** optimizing land use efficiency and ensuring food security.
- **Increased crop resilience** to climate stress through improved nutrient availability & crop quality
- **Improved soil health** through improved plant growth, hence higher Carbon (C) cycling, improving soil structure, nutrient supply to microbes and C sequestration.
- **Reduced Carbon footprint** as increased yields reduces emissions per unit crop produced (CO₂/ton)
- **Reduced stress on freshwater** as water use efficiency (WUE) is increased.
- **Reduced pressure towards land use change/deforestation** due to higher productivity from existing agricultural land.



Yara position	RA Building blocks				
	Soil health Soil chemical, physical and biological properties	Climate C footprint (CO ₂ /t crop) GHG Emissions (CO ₂ /ha) C sequestration (t/ha)	Resource use Ton Crop/ha % N-uptake/total N Ton Crop/m ³ water	Biodiversity Land use efficiency: (extra ton crop/ha) No of crop species	Prosperity Farmer productivity and profit/ha (ROI)
Digital Solutions AllFarm, N-tester	Enable soil health monitoring and improvement via soil analysis and field tailored programs	Informed decision and precise applications lower product C footprint through higher yields and reduced in-field losses.	Enable precise nutrient planning, crop monitoring and N-application decision support	A tailored combination of our products, agronomic knowledge and digital solutions supports informed decision making that helps farmers produce more crop with less impact on nature and biodiversity. Higher crop yields lower the need for clearing new land for agriculture.	With our product portfolio, low-Carbon Nitrates, agronomic knowledge, and digital solutions we can support farmers in maximizing economic returns with the lowest possible environmental footprint.
Product Portfolio YaraAmplix, YaraTera, YaraMila	Improved plant growth, higher Carbon inputs, nutrient supply to microbes and C sequestration.	Enhance crop performance; hence reduce product C footprint (CO ₂ /ton crop). Improve crop abiotic stress resilience. Lower in-field NH ₃ emissions	Optimum crop performance, higher nutrient uptake; hence higher nutrient and water use efficiency		
Agronomic knowledge	Improve soil fertility and soil health by advising on precise and balanced nutrient management.	Adoption of best practice in nutrition and farm management reduce emissions and increases C sequestration	Balanced crop nutrition advice, seasonal crop monitoring and precise fertigation principles.		
Low-Carbon Nitrates YaraBela	Higher crop biomass and SOC accumulation. Lower soil acidification (vs. non-nitrate)	Uses technology that results in 50 - 60% lower carbon footprint compared with regional averages	Higher NUE enables higher crop yields and reduced nutrient losses		
Conservation Agriculture Min-tillage, Crop diversity, Soil coverage	Maintain or improve soil health through its positive effect on SOC, soil physical aspects and microbial biomass.	Improve crop's stress resilience. Reduced CO ₂ losses / improved C sequestration	A healthier crop has a higher nutrient and water uptake ability that results in a higher resource use efficiency.		