

Good Growth Plan

The Good Growth Plan Progress Data - Soil



Version: March 2023

1. Summary

In our Good Growth Plan, Syngenta commits to strive for carbon neutral agriculture, while improving biodiversity and soil health. Specifically for soil health, our commitment is to promote and support in-field adoption of certain soil management and use practices that will sustain soil productivity and support crop productivity for a long time.

Sustainable farming needs resilient, healthy soils to secure our food supply. Poor management practices degrade millions of hectares.

The Soil dataset shows aggregated hectares of farmland reported since reporting year 2014 that benefit from soil conservation practices established in collaboration with Syngenta. The dataset also includes the project location, the type of soil practice, and the carbon benefit potential. The number of hectares of benefited farmland are tracked locally through in-field assessments, documented, and reported by project managers.

2. Structure of the data

Variable name	Definition	Unit	Type of data
Country	Country		String
ContinuousSoilCover	Maintaining crop residue or vegetative (crop) cover on the field to protect the soil against erosion and retain soil moisture		String
ControlledMachineryTraffic	Controlled traffic on cultivated fields reduces the area of the field that is used for driving farm machinery by sticking to certain traveling lines or paths (i.e. controlling exactly when and where traffic moves in-field). Soils are damaged by heavy or repeated agricultural machinery passes on the land. Controlled farm traffic helps in preventing soil from being compacted on a larger area of the field and as such improves the water holding capacity of the soil		String
CropRotation	Growing different crops sequentially on the same field during different seasons and years		String

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MinimumOrNoSoilDisturbance	Implementing minimum or no-tillage practices to reduce soil disturbance, beneficial for improving soil fertility and structure		String
SoilNutrientManagement	Optimizing soil nutrient management through active management of soil carbon and soil organic matter levels, including optimal application of organic and inorganic fertilizers in the right quantities, at the right time, and the right place. This entails linking soil, crop, weather, and hydrologic factors with cultural, irrigation, and conservation practices		String
WaterUseManagement	The management of water resources on farm can help increase crop production, prevent soil erosion, and avoid salinization. This may include the adoption of approaches such as: Advice to farmers on soil and water management to allow for improved water retaining/holding capacity of the soil and/or for better irrigation management, e.g. when to apply irrigation and in what amount; Provision of tools/services to farmers for better soil and water management, for example diagnostic tools		String
OtherSoilConservation Practices	Other practices include the implementation of farming practices that support ecosystem resilience and soil fertility. This would include integrated farm management practices, agriculture inputs (e.g. seeds, fertilizers, and crop protection), farm diagnostic, management tools or training activities related to the above-mentioned practices		String
ImplementedHectares	Hectares of land on which good soil management practices were introduced	Hectares	Numeric
BenefitedHectares	Hectares of farmland that benefit from the positive change brought in by implementation of good soil management practices	Hectares	Numeric

CarbonBenefitsPotential	The total annual mitigation potential of soil (implemented) hectares	Tons CO2e/year	Numeric
ReportingYear	Syngenta’s non-financial indicator reporting period is October to September		Categorical
Notice			Categorical

3. Background and methods

3.1. Description of project activities

Our Soil commitment aims to support the establishment of “healthy, functional, and resilient ecosystems” in a way that is progressively more integrated with our commercial operations.

To achieve this commitment, we’re focusing on good soil management practices, such as conservation agriculture – combining minimum or no-tillage, crop rotation, and continuous soil cover. These practices foster healthy productive soils that can store more water and reduce erosion and crop damage. This lets farmers improve cropping while protecting soil and water resources on which production relies. For instance, minimum or no tillage minimizes soil disturbance. Crop rotation counteracts weed, disease, and insect damage and builds soil fertility, and covering the soil with crops and crop residues reduce erosion and pesticide runoff.

We’re advising farmers and giving them the tools to implement these practices globally in partnership with external stakeholders. Soil fertility improvement within agricultural landscapes has many different ways of implementation in different geographical regions. The key practices in scope of this reporting are described in the previous section.

3.2. Sources of data

In-field assessments of the hectares implemented with and benefited from soil conservation practices are conducted and documented by local project managers and external stakeholders. The respective data is measured once, either at the time of implementation or at the time of Syngenta’s involvement.

3.3. Data collection tools and process

The number of hectares of benefited farmland established through each initiative is tracked and reported using project record-keeping systems and quality assurance processes. The data and respective evidence are documented, reported, and consolidated at a country, regional, and global level, using Smartsheet’s spreadsheet-centric work management tool. A risk assessment has been conducted to identify reporting risks. Identified risks are mitigated by the implementation of internal controls.

3.4. Progress measurement

The data are reported annually and cumulatively by adding the hectares that have been newly established or managed in the respective reporting year. The target is to enhance biodiversity and soil health on 3 million hectares of rural farmland per year.

3.5. Calculation of carbon benefits

To calculate carbon benefits, annual mitigation potentials (tCO₂e/ha/yr) from the IPCC fourth assessment report, Table 8.4¹, were used. Good Growth Plan soil practices are aligned with IPCC practices as follows:

Soil or Biodiversity practice	IPCC practice	Mitigation potential (tCO ₂ -eq/ha/yr)			
		Climate Zone	Mean	Min	Max
Minimum or no soil disturbance - Minimum or no-tillage to minimize soil disturbance.	Tillage and residue management (croplands) - Conservation tillage and zero-tillage reduce the use of energy (farm equipment) and increase carbon storage in soils.	Cool-dry	0.17	-0.52	0.86
		Cool-moist	0.53	-0.04	1.12
		Warm-dry	0.35	-0.77	1.48
		Warm-moist	0.72	-0.44	1.89
Crop rotation - Growing different crops sequentially on the same field during different seasons and years. Soil cover - Maintaining crop residue or vegetative (crop) cover on the field to protect the soil against erosion and retain soil moisture.	Agronomy (croplands) - Improved agronomic practices that increase yields and generate higher inputs of carbon residue can lead to increased soil carbon storage.	Cool-dry	0.39	0.07	0.71
		Cool-moist	0.98	0.51	1.45
		Warm-dry	0.39	0.07	0.71
		Warm-moist	0.98	0.51	1.45
Soil nutrient management - Optimizing soil nutrient management through active management of soil carbon and soil organic matter levels.	Nutrient management (croplands) - Practices that tailor nutrient additions to plant uptake	Cool-dry	0.33	-0.21	1.05
		Cool-moist	0.62	0.02	1.42
		Warm-dry	0.33	-0.21	1.05
		Warm-moist	0.62	0.02	1.42
Water-use management - The management of water resources on-farm can help increase crop production, prevent soil erosion, and avoid salinization.	Water management (croplands) - Practices that allow for more effective water usage on farms, including more sustainable irrigation and drainage techniques	Cool-dry	1.14	-0.55	2.82
		Cool-moist	1.14	-0.55	2.82
		Warm-dry	1.14	-0.55	2.82
		Warm-moist	1.14	-0.55	2.82

The mitigation potential is multiplied by the implemented hectares. Where multiple practices are adopted within a project, only the practice with the highest mitigation potential is used for the calculation.

In the dataset, the carbon benefit potential for projects with practices not aligned to IPCC practices or calculated from biodiversity measures is indicated as “not available”.

¹ WGIII, IPCC. "Climate Change 2007: Mitigation of Climate Change." Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (2007)

4. Changes versus previous release

Data for Reporting Year October 2021 – September 2022 were added. Projects that include both soil conservation and biodiversity enhancement measures are noticed as “This project mainly benefits soil health, but also biodiversity”. However, projects are included in the soil dataset only if soil conservation was the main objective of the project.

Data for Reporting Year October 2020 – September 2021 has been updated as follows:

- Removed projects from Syngenta Group China entities that fall outside Syngenta AG boundaries as they were incorrectly included due to a reporting error.
- Removed projects that include both soil conservation and biodiversity enhancement measures where the main objective of the projects was biodiversity enhancement to avoid double counting of implemented and benefited hectares.
- Corrected the implemented hectares and carbon benefit potential for a project in India.

5. Non-financial performance data quality

The Good Growth Plan data is published as a global aggregate in the Non-financial performance summary of Syngenta AG group (Syngenta) Environmental, Social and Governance (ESG) Report annually. Syngenta’s internal controls for non-financial reporting are designed to provide assurance to Syngenta’s Board of Directors and management regarding the reliability of non-financial reporting and fair presentation of the information published in the Non-financial performance summary of the ESG Report. Yet, all internal controls, no matter how well designed, have inherent limitations and therefore may not prevent or detect misstatements. In designing internal controls for non-financial reporting, we used the criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Every year, PricewaterhouseCoopers AG, Switzerland, an independent assurance provider, issues a limited assurance opinion on Syngenta’s Non-financial performance summary included in the ESG Report.

6. Contact information

For questions and inquiries regarding this dataset and documentation, please contact goodgrowthplan.data@syngenta.com.