

syngenta

### Securing our future together

Syngenta's business serves and sustains one of the world's largest industries: agriculture. And today that industry is grappling with one of the toughest challenges on Earth – feeding the world's fast-growing population. Each day, the world has an extra 200,000 mouths to feed, and the planet's agricultural resources are already under unprecedented strain. The Good Growth Plan is Syngenta's commitment to help the world's growers rise to that challenge in a sustainable way.

### A central part of our strategy

The Good Growth Plan is an integral part of our strategy. It ensures that we focus our business on understanding and meeting our customers' and stakeholders' most pressing needs. And it aims to make Syngenta an indispensable part of the solution, now and for the foreseeable future.

We focus our integrated capabilities on six crucial issues shaping the future sustainability of agriculture, so that we can deliver solutions that are better, more productive, and more beneficial to rural economies.

The Good Growth Plan considers: the resource efficiency that must underpin current productivity; the ecosystem resilience necessary to sustain future productivity; and the far-reaching knowledge transfer needed to support and strengthen rural communities. It focuses our attention on smallholders. And its overall mission is to improve the sustainability of agriculture and of our business.

### How did we do in our first year?

We intended our Good Growth Plan targets to be ambitious, and there is no certainty that we will achieve them all

In 2014, our focus was on securing firm foundations. We established networks of benchmark and reference farms, gathered baseline data, and clarified how best to track and verify progress. This process has itself yielded insights of value to our commercial and product development teams.

At the same time, we have created soil management and biodiversity programs to improve agricultural ecosystems. And as we have extended our reach to smallholders, we have brought our customers not only our products, but also access to knowledge, technologies, safe-use training and markets

In the following pages, we set out the highlights of our work in year one and our priorities for year two, for each of our six commitments.

### Make crops more efficient

Increase the average productivity of the world's major crops by 20 percent without using more land, water or inputs

#### Why does it matter?

The world needs to grow more food in the next 50 years than it has produced in the past 10,000 while using resources far more efficiently. Climate change could make the task even harder.

#### How do we aim to do it?

As well as applying our unique breadth of technologies and integrated strategy, we will collaborate with partners. Foremost among these are the growers who work with our products every day. And we will focus particular effort on smallholders, who have the greatest potential to increase productivity and in turn, improve their own livelihood.

### What have we done in year one?

To measure our progress, we have developed a network of around 850 reference farms. These growers are working with our field experts to raise productivity and demonstrate what is possible with our solutions across all crops and regions in our key markets. To establish a baseline of what growers are currently able to achieve, we have also recruited a global network of just over 2,700 benchmark farms.

All the data on inputs and outputs is being collected, validated and analyzed by an independent company, Market Probe. Together, we have built data collection tools and developed metrics and operating procedures. These in turn, have been independently assessed by PwC. This data-gathering program is unprecedented in both scale and rigor, providing a new resource for our scientists and field experts – and we are augmenting it by seeking out new sources of data from governments and NGOs.

### What are our priorities now?

Initial feedback from participating growers has been encouraging. Over the next year, we will analyze the huge volumes of data collected in 2014. Insights from the analysis will then be used to further refine our programs and help identify implementation gaps.



### Superior quality beans, higher yield

In today's competitive coffee market, every coffee bean tells a story – where it's grown and how it's cultivated can help determine the ultimate quality and taste of the bean.

With coffee yields worldwide up to 50 percent below potential, growers are looking to not only improve the efficiency of their crop, but also the sustainability of its production.

Our NUCOFFEE® model in Brazil supports growers in [the] sustainable production of coffee, and ensures the traceability of the product, all while delivering up to 50 percent higher grower revenues. Recently, the model was extended to smallholders through the NUCOFFEE® SUSTENTIA® program, which provides the same

level support and quality to growers on just a few hectares.

partnered with UTZ Certified so that growers can earn their certification based on high standards of cultivation, working conditions, and care for people and the environment. So far, 183 farm plots have received this seal, with a target of 2,000 producers in the program in next five years.





### Rescue more farmland

# Improve the fertility of 10 million hectares of farmland on the brink of degradation

#### Why does it matter?

Poor farming practices expose soil to wind and rain erosion, leaving millions of hectares infertile. Every year, the world loses enough land to produce 20 million tons of grain, and some 40 percent of existing farmland is already seriously degraded. Raising awareness of this issue and promoting soil conservation solutions is critical for sustainable agriculture: rebuilding lost fertile soil can take nature hundreds of years.

### How do we aim to do it?

We are helping growers to increase soil fertility and productivity sustainably through conservation tillage, crop rotation, permanent ground cover and improved fertilization, and crop protection strategies that better respond to changes in soil structure. We are working with conservation experts and partners such as the United Nations Convention to Combat Desertification (UNCCD), to share knowledge and reach both growers and policymakers.

### What have we done in year one?

We have designed projects and educational opportunities to help growers work the land in a way that minimizes disruption to soil. For example, crop rotation and changes in the way crops are grown from year to year are enabling them to counteract weeds, diseases and insect problems with less disturbance to the soil; and covering the soil permanently with crop residue or plants can reduce erosion. Together, over time, these techniques improve soil health. They help cut nutrient loss and crop damage, and increase the soil's fertility and ability to store water. In 2014, our programs impacted over 800,000 hectares of soil, mainly in Latin America and Europe.

We have also provided initial funding and support for curriculum creation at the UNCCD Soil Leadership Academy, which began operations in early 2014. The Academy aims to strengthen international policy, decision-making, and frameworks for soil conservation and sustainable land management. It is building a network linking research institutes, universities, and key decision-makers, and will offer information and training opportunities to policymakers and land users worldwide.

### What are our priorities now?

We are collaborating with external stakeholders – academics, policymakers, and soil experts – to introduce these practices globally. Local managers will assess the best ways to make soil more fertile, select the most promising projects, tailor them to local conditions, and get them underway with local growers.

Once projects have been launched, we need to make sure they're working. We have designed controls to ensure that data is reported in the most accurate way, and we'll continue to seek ways to improve the reporting process.

Annual soil sample audits will track program impact. We'll look at land where main conservation agriculture practices have been put in place and identify which land ultimately benefits from improved practice. Data on the number of growers or stakeholders trained on conservation agriculture and the number of partnerships established with local stakeholders could also help us clarify the social and environmental gains. Projects may also supply data on water stewardship, soil nutrient management, and farm machinery pathways.



### **CONTIVO®** for healthier soil

In Hungary, the combination of record-setting rains and severe droughts had growers looking for ways to protect their soil: too much rain can wash it away – too little can dry it out, making it more susceptible to erosion during heavy winds and precipitation.

Conventional tilling techniques can compound these factors and contribute to soil compaction so that water cannot soak into the soil where it is needed.

Our CONTIVO® system helps growers in Hungary to adopt conservation tillage techniques that leave at least 30 percent of the previous year's crop remnants on the surface of the soil before planting.

It combines proven conservation tillage practices with innovative seed technology, suitable equipment and appropriate use of fertilizer, and crop protection protocols to protect soil health while still maintaining high yields





### Help biodiversity flourish

## Enhance biodiversity on 5 million hectares of farmland

#### Why does it matter?

The sustainability of agriculture relies on biodiversity – for plant breeding, pollination, and food diversity.

#### How do we aim to do it?

The biggest opportunity to enhance biodiversity in agricultural landscapes is to increase the quality and the amount of field margin habitat. We are helping growers to create rich habitats on areas such as field margins and buffer zones. Where appropriate, we are promoting reforestation with particular focus on protecting wells and water bodies.

To preserve crop diversity, we are working with conservation groups to conserve crop wild relatives and integrate them into farming practice.

### What have we done in year one?

We have been working with partners across the world to identify priority programs, agree specific program targets, and define protocols for implementation.

Our first-year focus was on raising policymakers' and growers' awareness of the role of field margin habitat and evaluating the scalability of the reforestation approach. We have about 50 projects in over 20 countries to assess a variety of environmental and cultural factors. In 2014, these programs impacted nearly 700,000 hectares of agricultural landscape.

Tailoring biodiversity programs to local conditions has deepened our understanding of the impact that simple, pragmatic farming practices can have on landscape quality and resilience. We are demonstrating how environmental management and intensive agriculture can co-exist, and how proactive management of relatively small areas can enhance biodiversity significantly. And our work with genetic conservation experts is revealing opportunities for on-farm conservation of crop wild relatives that are currently excluded from many official conservation programs.

### What are our priorities now?

Building on the success of OPERATION POLLINATOR™ to enhance biodiversity, our multifunctional approach – using field margins and managed forests – integrates protection of natural resources and enhancement of ecosystem services.

Proactive management of uncropped areas on commercial farms is one of the most important ways for growers to take care of their natural capital and the ecosystem services it provides: this approach is well-suited to the fragmented farming structures of regions such as Europe and Asia. Managed forests present a viable approach to multifunctional landscapes for large consortia of producers working collectively to secure their water source and future productivity.

Collaborating with many stakeholders, we will continue developing research-based, practical tools and protocols adapted for local conditions and cropping systems. Our experience is showing that early support by partners along the value chain ensures more successful implementation and allows value capture at community level.



### Restoring stream environments

Prince Edward Island is Canada's largest potato-growing province, famous for its red, sandy soil. But heavy rainfall and a vast system of waterways mean that farmers need to take precautions to stop tilled soil from running into streams and rivers.

One important practice that supports stream environments and reduces the risk of soil runoff is planting strips of vegetation along the edges of farm properties and waterways.

These areas not only help to capture field soil and nutrients before they reach waterways, but also provide food and habitat for a variety of wildlife and pollinating insects.

The Prince Edward Island Stream Restoration Project – conducted in partnership with experts from the Kensington North Watersheds Association and the Bedeque Bay Environmental Management Association – supports farmers in implementing practices that enhance biodiversity and keep the soil where it belongs: in their fields. Since the program was started in 2012, more than 21,000 trees and shrubs have been planted, and more than 40 kilometers of streams restored.





### **Empower smallholders**

# Reach 20 million smallholders and enable them to increase productivity by 50 percent

#### Why does it matter?

Smallholder growers are critical to the world's food security, yet they often face high financial risks and low returns. Every day, 180,000 people leave rural communities to live in cities.

#### How do we aim to do it?

Ensuring that farming is a viable and attractive occupation will help rural communities to be more vibrant and productive. Supported by partners such as USAID, we can bring growers the products and know-how to raise productivity and earnings dramatically while preserving the long-term potential of their land. We can also improve profitability through innovative business models, helping them to finance higher-yielding products and reach markets to sell their crops.

We already have strategies for reaching more smallholders. We have partnered with the World Economic Forum's Grow Africa and Grow Asia platforms and continue to seek new partnerships and opportunities to reach smallholders worldwide. In 2012, we committed to invest \$500 million in Africa over 10 years, addressing food security and poverty while helping to make the continent a major world food exporter. Smallholders dominate food production on the continent and are a key target of our investment.

### What have we done in year one?

We already reach 15.3 million smallholders indirectly through sales, most of them in Asia.

Our research has given us a clearer picture of what we need to change in order to achieve our goals, as the issues with the greatest impact on smallholders depend on location. Yield improvement is paramount, but at the same time, we must ensure that our agronomy and safety training addresses local needs. And increasing yields is not the only way to boost growers' livelihoods: while deepening our understanding of how training can raise smallholder productivity, we are also investigating how our business models can contribute. For this we have developed a best-practice measurement framework with the Sustainable Food Lab, a consortium of business, non-profit, and public organizations working together to promote sustainability.

In collaboration with the non-profit organization Sustainable Markets Intelligence Center (CIMS), we carried out a pilot impact assessment on our FRIJOLNICA™ program in Nicaragua. CIMS interviewed 110 smallholders in the program and 40 smallholders as a control group, to assess areas such as: access to and adoption

of inputs and services; income and profitability; food security; and perceived wellbeing.

We found, for example, that farmers participating in our program are achieving greater net income, and investing more in their farms than the comparison group. Having proven the methodology in 2014, we will now look to expand such assessments to our commercial models. The lessons learned from this, and subsequent research, will enable us to better design market models that aim at improving smallholder livelihoods.

#### What are our priorities now?

Our focus in 2015 is on our smallholder reference farms. We are tailoring protocols to enhance smallholders' productivity, and developing our training to help them work more productively and safely. We will further explore whether we need to include more reference farms, and how best to communicate the lessons learned from these farms to other smallholders.

Insights from our benchmark and reference farms will inform the development of products and solutions tailored to meet smallholder needs.



### Harvesting beyond subsistence

About 70 percent of the kidney beans consumed in Central America are produced in Nicaragua, mostly by smallholders on around a hectare of land.

When these growers lack access to technology and know-how, yields are low, and they struggle to harvest enough beans beyond subsistence.

Together with agricultural input company RAMAC, we founded FRIJOLNICA™ in 2007 to train smallholders on how to improve yields through better farm practices, such as the use of crop protection products and better soil management.

Additional support from Esperanza Coop and the Inter-American Development Bank has since expanded the scope of the program to help growers gain access to credit services, which are critical to fueling their businesses.

FRIJOLNICA™ has helped growers in the program double their yields when compared to the national average, lifting many smallholders out of poverty. The program has grown from 300 farmers trained in 2007, to 12,000 farmers in 2014.





### Help people stay safe

Train 20 million farm workers on labor safety, especially in developing countries

#### Why does it matter?

We share a responsibility to help improve occupational safety and health in agriculture. This applies particularly to smallholders, especially those in developing countries, who often lack access to guidance on using crop protection efficiently, responsibly, and safely.

#### How do we aim to do it?

Agriculture is the world's second largest source of employment, often involving long hours and heavy work in harsh conditions. Our training programs raise awareness of the hazards involved, and share knowledge of how these can be effectively managed and prevented. Each year, we train growers through our sales and stewardship teams, as well as in partnership with local organizations and product retailers.

### What have we done in year one?

We established baseline data against which to measure our progress and improved the quality of record-keeping and evidence of training activity. In 2014, we reached 4.7 million people – of which 74 percent are smallholders – with dedicated safety training programs or as part of our commercial activities including a section devoted to safe use.

Working with external partners, we have been refining our training programs and concepts – drawing on the insights we are gaining from our research into smallholders and analyses from our reference farms. We have also begun addressing labor safety more actively through the sales force.

### What are our priorities now?

We are working with our partners to ensure that all our training is high quality and leads to measurable impacts on attitudes, knowledge, and behavior – with a special focus on smallholders. We are also working to form new partnerships with a growing number of organizations. An important lesson from 2014 is that in training the trainers, we need greater emphasis on teaching knowledge transfer techniques as well as course content.



### Using crop protection safely

In Bangladesh, Syngenta field representatives have turned typical sales visits into opportunities for training smallholders on using crop protection safely. They've adapted their sales pitches to feature instruction on the "5 Golden Rules" of safe use of crop protection. Safety instruction is tailored to the needs of local smallholders, and reinforced through highly visual training materials, posters, leaflets, and interactive demonstrations.

As a result, we're able to train more smallholders on how to stay safe while supporting them to increase crop productivity. We're now formalizing the approach in order to replicate it across the region.





### Look after every worker

# Strive for fair labor conditions throughout our entire supply chain network

#### Why does it matter?

We recognize a responsibility to ensure that our supply chain meets the highest ethical standards, especially in developing countries. Offering workers fair and attractive conditions will also help agriculture to stem the population drift to cities that currently undermines efforts to increase production.

#### How do we aim to do it?

Labor standards are a priority concern for all our operations, both on farms and in production plants, and we expect the same of our suppliers. We have strict contractual requirements – prohibiting the use of child labor, for example – and encourage suppliers to meet our standards through intensive training, periodic assessments, and financial incentives.

Since 2004, we have been working with the Fair Labor Association (FLA) to address labor standards on seed farms including: child labor; health and safety; awareness of workers' rights; wages and benefits; hours of work; harassment; abuse; and discrimination. Our labor standards program now includes more than 28,000 suppliers in India, Eastern Europe, and Latin America, and we are on track to include all our suppliers by 2020.

### What have we done in year one?

Our program now has tailored approaches for our seed supply farms, flowers farms, and chemicals suppliers to meet safety and social goals.

In 2014, we extended our seeds supplier program to the Philippines; it now covers just over half of the 50,000 supply farms. The FLA conducts independent audits and verifies the number of growers participating in the program, and we are now working towards having it accredited by the FLA.

We also launched a program to certify our flowers farms to the standard developed by Global Good Agricultural Practice (Global GAP) to assess farm workers' health, safety, and welfare.

Chemical suppliers play a critical role in our ability to meet demand, and an important part of our relationship with them is to ensure they meet high standards on health, safety, and labor conditions. Health and safety standards are tracked through our supplier assessment program. Building on our experience in developing common standards for the chemical industry, we have partnered with the China Crop Protection Industry Association to sponsor and contribute to industry health and safety workshops in China.

We also started a long-term initiative with our key Asian chemical suppliers to develop and implement best practice in process safety management.

In 2014, we completed a sustainability assessment across our direct and indirect supply markets to identify priorities and review our assessment protocol for labor practices.

#### What are our priorities now?

Building on our experience from working together with the FLA and other companies to raise seed supply chain standards, we will now work with other chemical manufacturers and our suppliers on an engagement program that assesses and improves chemical sustainability sourcing practices, including environmental and social aspects.

We will further develop our supplier assessment process to include labor practices and will look for further opportunities to develop health and safety initiatives and partnerships within the chemical industry. We will also define and set clear targets for the assessment of health and safety, environmental and labor conditions in our supply chain and track progress against them.



### Leading by example

Twenty years ago,
Renukamma Umapathi
and her husband
grew just a few
crops on the family's
1.5 hectares of land
in the southern Indian
state of Karnataka.

Despite the entire family working their fields, including her children, earnings were not enough to pay school fees.

To boost her family's income, she converted part of the land to seed production for Syngenta. In 2006, she participated in a training program initiated by Syngenta and the Fair Labor Association on the eradication of child labor, workers' rights, and issues of health and safety. She was encouraged to send her children to school

Since then, her children have graduated and her business has grown – the highe income has enabled her to double the size of her land and renovate and furnish the family home. Renukamma is now a trusted employer in her community who motivates others to adopt standards of fair labor and safety measures, including the use of protective equipment and safe storage practices.





# Measuring The Good Growth Plan

In the first year of
The Good Growth Plan
reporting, our focus has been
on laying the foundation for
a rigorous process. We have
identified performance
indicators, designed reporting
processes and gathered
data for each commitment.
We anticipate publishing
additional indicators in the years
ahead. We report progress
in our Annual Report and on
The Good Growth Plan website.

To measure progress in each of The Good Growth Plan commitments in 2014, we have carried out and repor on the following:

#### Make crops more efficient

We have established a network of reference and benchmark farms, grouped in clusters of homogeneous agro-climatic conditions and grower characteristics. Reference farms use one or more Syngenta product(s) or recommended protocols and have a direct link to Syngenta. Benchmark farms are randomly selected by an independent company and represent conventional grower practice for each cluster. As the baseline year is 2014, all clusters are reported as "≤0%" in land productivity, nutrient efficiency and pesticide efficiency. Moving forward, we will report the percentage increase achieved in reference and benchmark farms on a cluster basis compared to the baseline year. Further details are published online.

#### Rescue more farmland

We report on the number of hectares of 'impacted farmland' – land benefiting from sustainable soil management and use practices such as conservation tillage, crop rotation and permanent ground cover. These practices improve soil fertility, drawing on state-of-the-art scientific knowledge and assessments developed jointly with third parties.

#### Help biodiversity flourish

Through this commitment, we aim to promote healthy, functional and resilient ecosystems. We therefore report on the number of hectares of 'impacted farmland' – land benefiting from biodiversity enhancement practices. Examples of such practices include multifunctional field margins, restoration and maintenance of managed forests, and agro-forestry.

#### **Empower smallholders**

We report on the number of smallholder farmers reached indirectly through sales and directly though our field-force activities

### Help people stay safe

We report on the number of people who attended safe use training activities on the responsible handling and use of crop protection products; these include farm workers, farm owners, product distributors, employees, and others who may have contact with crop protection products. We also provide information on the percentage of smallholders trained. This year, in line with past practice, we also report on the number of countries with established toxicovigilance programs through which attending physicians can receive medical advice on treatment for health effects following misuse of pesticides, whether accidental or intentional.

#### Look after every worker

We report on the number of seed supply farms included in the Syngenta Fair Labor Program. Specifically, we report on the number of farms included in the audit scope of the Fair Labor Association (FLA). The program assesses labor practices at the farms, including health and safety, child labor awareness of workers' rights, wages and benefits, working hours, harassment and abuse, and discrimination. This year, in line with past practice, we also report on the number of health, safety, environment and quality (HSEQ) assessments conducted at suppliers.

You can find more data and discussion on www.goodgrowthplan.com

### Measuring **The Good Growth Plan**

This table presents the number of reference farms, benchmark farms and clusters in the network. It also outlines the distribution of percentage increases in land productivity, nutrient efficiency and pesticide efficiency on a cluster basis.

A cluster presents homogeneous agro-climatic conditions and contains reference and/or benchmark farms with similar grower characteristics. Reference farms use one or more Syngenta product(s) or recommended protocols and have a direct link to Syngenta. Benchmark farms are randomly selected by a third-party research agency and represent conventional grower practice for each cluster.

Reference farm and benchmark farm performance compared to baseline 2014 represents the distribution of percentage increases achieved in reference and benchmark farms compared to the baseline year on a cluster basis. The table is set up to show trends over time on reference and benchmark farms. As the baseline year is 2014, all clusters are reported as "≤0%" this year.

	2014	2013	2012
Make crops more efficient <sup>1</sup>			
Total number of reference farms	860	_	_
Total number of benchmark farms	2,738	_	_
Total number of clusters <sup>2</sup>	205	_	_

	Reference farms' performance compared to baseline 2014 <sup>3</sup>		Benchmark farms' performand compared to baseline 201		ormance line 2014	
	2014	2013	2012	2014	2013	2012
Land productivity index:						
≤0%	183	_	_	183	_	_
>0-<5%	_	_	_	_	_	_
5-<10%	_	_	_	_	_	_
10-<15%	_	_	_	_	_	_
15-<20%	_	_	_	_	_	_
≥20%	_	_	_	_	_	_
Nutrient efficiency index:						
≤0%	183	_	_	183	_	_
>0-<5%	_	_	_	_	_	_
5-<10%	_	_	_	_	_	_
10-<15%	_	_	_	_	_	_
15-<20%	_	_	_	_	_	_
≥20%	_	_	_	_	_	_
Pesticide efficiency index:						
≤0%	183	_	_	183	_	_
>0-<5%	_	_	_	_	_	_
5-<10%	_	_	_	_	_	_
10-<15%	_	_	_	_	_	_
15-<20%	_	_	_	_	_	_
≥20%	_	_	_	_	_	_
1 2014 first year of reporting						

2014 first year of reporting Number of clusters with either reference or benchmark farms

Number of clusters with both reference and benchmark farms per range of percentage increase in land productivity, nutrient efficiency and pesticide efficiency since the 2014 baseline. US Department of Agriculture data are used as baseline for both reference and benchmark farms in clusters located in the USA

0.8	0.8 0.7 15.3 3.3	-	-
0.7	0.7 15.3 3.3	-	-
	15.3	-	-
	15.3	-	-
	15.3	-	-
4.7	3.3	-	-
4.7	3.3	-	-
4.7	3.3	_	-
4.7		-	-
4.7		_	-
4.7	4.7		
4.7	4.7		_
		2.8	3.
	74%		
	100	100	8
	93%	93%	929
	28,361	22,895	17,62
	72	86	7
	74	38	3
	450		
	156	157	11
		72 74	<b>72</b> 86

You can find more data and discussion on www.goodgrowthplan.com © 2015 Syngenta AG, Basel, Switzerland. All rights reserved.

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The information contained in this document was first published in the Syngenta Annual Review 2014. The 2014 results of our Good Growth Plan are explained in more detail in the Non-financial performance discussion 2014 (incl. The Good Growth Plan and Corporate Responsibility performance) published on www.syngenta.com/ar2014

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Bringing plant potential to life