

Food, Footprint, Farmers –
The Global Contribution of the
Plant Science Industry



FOOD, FOOTPRINT, FARMERS

The issues facing our world are complex and daunting: hunger, poverty, disease, climate change, habitat loss, and water scarcity are the concerns closest to home for global agriculture. These global challenges, embodied in the UN's Millennium Development Goals, will not be overcome by individual governments, NGOs or companies. Making an impact on these concerns demands relentless innovation and collaboration from all stakeholders.

At CropLife International, our member companies work together for sustainable agriculture through innovation in crop protection, plant biotechnology and seed production. CropLife members' work includes programmes to effectively steward our products, and to protect their users. Our programmes promote accessible innovation, and support greener practices in agriculture. Beyond this, many members are making long-term investments in education and infrastructure to help farming communities to stay strong and vibrant. As an industry we recognise that our future depends on the knowledge and skill of farmers and the productivity of their farms.

Working alongside many other groups, members of our industry will continue to contribute by supporting farmers and rural communities to grow the food the world needs, with the smallest possible ecological footprint and the greatest social benefit.

By working with governments and NGOs, we believe that our industry makes a positive contribution to helping six areas of global public concern. We are committed to making a positive social contribution against the UN's priorities in:

- Preventing Hunger
- Reducing Poverty
- Protecting Health and Well Being
- Conserving Water
- Addressing Climate Change
- Preserving Biodiversity

These social and environmental priorities are embedded across all our member companies' relationships and activities – from employees and business partners in the boardroom or research lab to the way they engage with neighbours, farmers and citizens in communities around the world.

CropLife International member companies and specific examples cited in this publication are intended only to illustrate the plant science industry's commitment to social priorities, as it is CropLife International's policy not to promote or endorse any specific product or company. No representation is made with regard to the existence or otherwise of competing technologies originating from other companies (whether or not members of CropLife International) or as to the effectiveness of the referenced technologies relative to such competing technologies. Any questions or concerns should be directed to CropLife International, 326 Avenue Louise, Box 35, 1050 Brussels, Belgium, croplife@croplife.org.

OUR COMMITMENT TO SOCIAL PRIORITIES

Preventing Hunger page 4

We contribute by creating innovations that help farmers grow more food from existing land, helping them meet increasing global needs for a secure, varied, affordable and healthy diet.

Reducing Poverty page 6

We contribute to improved quality of life, by enabling farmers to improve agricultural productivity.

Protecting Health and Well Being page 8

We contribute by collaborating to help create stronger, safer rural communities.

Conserving Water page 10

We contribute by conserving water and protecting water quality through new technologies and improved water management techniques.

Addressing Climate Change page 12

We contribute by developing innovative products and practices that will help reduce emissions, increase carbon sequestration and enable agriculture to meet global food needs in the face of climate change.

Preserving Biodiversity page 14

We contribute by preserving biodiversity and helping protect uncultivated wildlife habitats through achieving greater productivity on cultivated land.



Courtesy of ©M.Hallahan/Sumitomo Chemical-Olyset Net

Our contribution to... preventing hunger

THE PLANT SCIENCE INDUSTRY IS COMMITTED TO:

Creating innovations that help farmers grow more food from existing land, helping them meet increasing global needs for a secure, varied, affordable and healthy diet.

OUR AIMS

- To continuously invest in developing improved products that help farmers to increase yields.
- To create plant varieties with higher nutritional value. For example, grains, fruits and vegetables fortified with extra vitamins to protect against diseases and malnutrition.
- To protect crops both in fields and in storage, safeguarding consumers' access to a healthy, affordable and balanced diet.



The plant science industry has a long history of improving agriculture, not only in terms of output but in terms of quality and safety. New technologies and production techniques account for dramatic increases in yield in many crops and many countries.

GROWING MORE ON EACH ACRE

In the 1980s, one farmer produced one tonne of food, and one hectare of arable land produced 1.8 tonnes, annually on average. Today, one farmer produces 1.4 tonnes, and one hectare of land produces 2.5 tonnes.¹

PROTECTING AGAINST PERILOUS LOSSES

Fruits and vegetables are part of a healthy diet and the availability of fresh produce has greatly increased in many parts of the world, contributing to better diets and increased longevity. By increasing yields and limiting pre and post harvest losses crop protection products have helped improve this availability. A U.S. study estimated that without fungicides, yields of most fruit and vegetables would fall by 50-90 percent, making fresh produce unaffordable to many.²

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HARVESTPLUS CONTRIBUTES TO IMPROVING GLOBAL NUTRITION

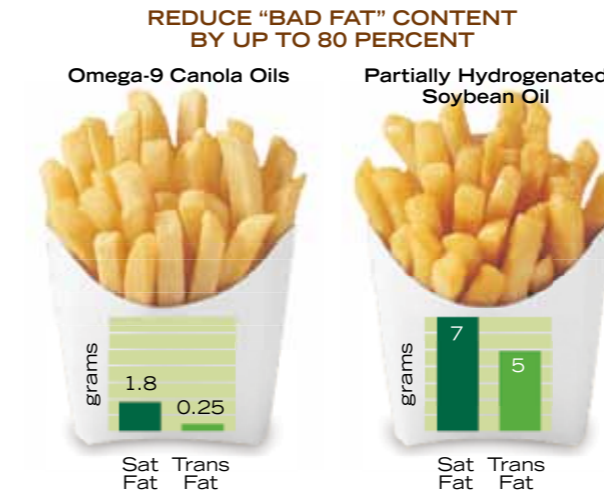
Millions of people in developing countries suffer from micronutrient malnutrition, or hidden hunger, leading to health problems and loss of life on a massive scale. The Syngenta Foundation supports The HarvestPlus Challenge Program to reduce micronutrient malnutrition among the poor by breeding and disseminating staple food crops that are high in iron, zinc and vitamin A. HarvestPlus was convened by the International Centre for Tropical Agriculture (CIAT) and the International Food Policy Research Institute (IFPRI) and works with more than 200 agricultural and nutrition scientists around the world, including private sector developers. The centre is currently biofortifying the seven key staple crops that will have the greatest impact in alleviating micronutrient malnutrition in Asia and Africa – beans, cassava, maize, pearl millet, rice, sweet potato and wheat.

[Click here to learn more.](#)

GOODBYE TRANS FATS

Many vegetable oils widely used for frying, cooking, and salad dressings, and to prepare processed foods, contain trans fats – shown to raise the level of “bad” cholesterol that increases the risk of heart disease. Omega-9 Oils, developed by Dow AgroSciences, represent a new generation of cooking oils that allow foodservice and food manufacturing companies to deliver healthier foods by eliminating trans fats, without compromising taste or performance.

Omega-9 Oils are made from Dow AgroSciences' Nexera line of canola and sunflower seeds – created by plant breeders to have zero trans fat and to be uniquely



high in monounsaturated (omega-9) fat, shown to reduce the risk of heart disease and stroke. As a result of restaurants converting to Omega 9 Oils since 2005, over 980 million lbs of trans and saturated fat have been removed from North Americans' food. Plant breeders are continuing innovative efforts to develop the next varieties of Omega-9 Oils with even more health benefits.

[Click here to learn more.](#)

FIGHTING POOR NUTRITION WITH BIOFORTIFIED SORGHUM

Africa continues to slip behind in meeting basic nutritional needs, with Sub-Saharan Africa accounting for half the deaths of children under the age of five within the developing world. DuPont is the principal technology donor in the Africa Biofortified Sorghum project – a public-private consortium that seeks to use biotechnology to develop a more nutritious and easily digestible sorghum that contains increased levels of essential nutrients, especially lysine, vitamin A, iron and zinc. The project, which relies on capacity building and research knowledge from private sector companies, has the potential to improve the health of 300 million people by increasing sorghum's nutritional quality. Sorghum is the fifth most important cereal crop and the main dietary staple for more than 500 million people across the entire developing world.

[Click here to learn more.](#)



Courtesy of Africa Biofortified Sorghum Project

Our contribution to... reducing poverty

THE PLANT SCIENCE INDUSTRY IS COMMITTED TO:

Improving quality of life by enabling farmers to improve agricultural productivity.

OUR AIMS

- To promote innovative methods and technologies that give farmers more choices to increase their profitability.
- To support a range of partnerships to ensure that rural communities benefit from agricultural growth through increased access to services, resources and education.
- To address the education and distribution challenges associated with making agricultural technologies effective for smallholder farmers.



The first “Green Revolution” doubled yields and fed more people on the same land base, biotech crops have boosted yields and net incomes in developing countries, and crop protection products have improved efficiencies and stabilised yields in staple crops. New agricultural technologies have the potential to help reduce poverty and achieve sustainable agriculture in developing nations.

IMPROVED FARM INCOMES

In 2008 alone, global farm incomes have benefited by \$9.4 billion from the enhanced productivity and efficiency gains of adopting biotech crops. 50 percent of the farm income benefits have been earned by farmers in developing countries.³

IMPROVING EFFICIENCY, IMPROVING LIVES

Pesticides improve efficiency by protecting crops from pests and diseases and raising yields per hectare. According to a recent study, the certainty of yield (and therefore reduced risk of income hiatus) was clearly seen as a social benefit of pesticide use. For example in Kenya, the difference between disease-free and diseased fruit meant a fourfold income increase for a small-scale passion fruit farmer; and extra income for an avocado farmer allowed him and his wife to purchase the drugs necessary to treat their chronic diabetes.⁴

member case studies

STRIGAWAY FOR AFRICA

Striga is a parasitic weed that seriously reduces the productivity of staple crops such as maize in Sub-Saharan Africa. The weed extracts precious water and nutrients and is responsible for harvest losses of 20-80 percent, worth more than \$1 billion a year and affecting the livelihoods of around 100 million people. In response, BASF has designed StrigAway, an innovative herbicide seed treatment that prevents the phytotoxic effect of Striga on the maize plant, enabling the plant to grow to its full potential. BASF is currently part of the African Agricultural Technology Foundation public-private partnership, along with CIMMYT (International Maize and Wheat Improvement Centre) and other institutions, to deploy this technology to smallholder farmers. The use of StrigAway applied to herbicide-resistant maize seed has produced yield increases between 38 and 82 percent. In Kenya, a conservative estimate indicates the herbicide could lead to an extra 62,000 tonnes of maize in the Western Province alone.

[Click here to learn more.](#)

BIOTECH COTTON IMPROVING LIVES

A major study in India found that in 2006, Bt cotton earned farmers almost three times the revenue per acre that conventional cotton farmers earned. They achieve 50 percent higher yields, use less precious water and five fewer pesticide sprays to protect their crop against bollworms. Higher earnings allow a better quality of life – women get more maternal health care and children more inoculants, and more children go to school for longer. Their rural villages benefit greatly as well, with improved access to drinking water, electricity, street lights, economic infrastructure and resident doctors.

Monsanto continues its commitment to improve farmer lives in India through Project SHARE, a pilot project launched in 2009 in association with NGO ISAP (Indian Society of Agribusiness Professionals). The project aims to improve the socio-economic conditions of 10,000 small-marginal cotton and corn farmers in 1100 villages within four years by increasing their crop productivity through tools such as access to higher-yielding seeds and agriculture inputs, and training and education on best agronomic practices.

[Learn more about Project SHARE.](#)

IMPROVING PROFITABILITY THROUGH LOANS AND MARKET INFORMATION

Since 2006, Bayer CropScience has enabled Indian cotton farmers to invest in their productivity by providing zero- or low-interest micro loans. Bayer CropScience originally worked together with the Bank of India on this programme, but most of the micro loans are now awarded directly by the company, in many cases interest-free. The investments enable farmers to increase both their productivity and their profitability, and reduce the economic pressure to employ child labour. Bayer CropScience is also working to provide direct market access for rural small scale farmers through joining a cooperation with the Multi-Commodities Exchange of India and India Post. In 15 villages in the state of Karnataka, the post offices have developed to become rural service centres. Here, farmers can compare market prices, consult weather reports and obtain weather insurance to help improve profits.

[Learn more about the small loan programme and village service centres.](#)



Courtesy of Monsanto Company

Our contribution to... protecting health and well being

THE PLANT SCIENCE INDUSTRY IS COMMITTED TO:

Collaborating to help create stronger, safer rural communities.

OUR AIMS

- To help control malaria and other pest-transmitted diseases which threaten human health.
- To reduce the necessity for labour-intensive work like hand-weeding, thereby improving health and freeing up more time for other activities, such as education.
- To reduce child labour in seed supply-chains.
- To promote the responsible use of products that protect crops and food against pests and diseases.

Plant science plays a key role in protecting health and well being – from insecticides used to control malaria-carrying mosquitoes, to products that increase agricultural productivity and profits with reduced labour.

REDUCING STRENUOUS MANUAL TASKS

In an FAO study of agriculture in Uganda, weeding was found to absorb over 50 percent of smallholder farmers' production costs. The combination of herbicide use and conservation tillage can dramatically reduce the demand for labour. For example, in Uganda, the labour requirement for land preparation went from 73 person-days in conventional systems, to 22.5 days with the use of herbicides. With conservation techniques, the study suggests this could be reduced to 5 days.⁵



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PARTNERSHIPS FOR MALARIA CONTROL

CropLife member companies continue to support the Roll Back Malaria (RBM) Partnership, a coordinated global approach to fight malaria through the donation of insecticide-treated bed nets. Progress has been made in malaria control, particularly through the use of bed nets, whose distribution worldwide has increased five-fold from 30 million in 2004 to 150 million in 2009.⁶

For example, the Interceptor net produced by BASF uses a unique textile finishing product and a fast-acting insecticide to produce an effective, long-lasting net. BASF has partnered with organisations such as the Malaria Emergency Technical and Operational Response (MENTOR) to provide insecticide to control malaria in refugee camps in Liberia, supported MENTOR's malaria and dengue fever program after the tsunami in Aceh, Indonesia and donated 100,000 Interceptor malaria nets to the relief efforts following cyclone Nagris in Myanmar.

[Click here to learn more.](#)

Sumitomo Chemical's Olyset Net was the first long lasting insecticide net recommended by the World Health Organization as a crucial tool in the fight against malaria. Olyset Net uses controlled release technology that controls mosquitoes for more than five years. Sumitomo Chemical has donated more than 1 million Olyset Nets to front-line malaria partners in Africa, and is committed to localising production in Africa. By working in partnership with business in Tanzania, Ethiopia, Malawi and other sub-Saharan countries, African facilities produce more than half of global Olyset Nets, supplying a vital public health product and boosting economic development.

[Click here to learn more.](#)

SCHOOLS INSTEAD OF FIELDS

Child labour is deeply rooted in many societies, with the United Nations International Children's Emergency Fund (UNICEF) estimating that approximately 158 million children between the ages of five and 14 are working. Bayer CropScience follows a clear zero-tolerance policy on child labour for all operations and suppliers worldwide, and has developed a unique model with comprehensive measures – the Bayer CropScience Child Care Program – in cotton seed production in India. The initiative is specifically tailored to help change the way families think.

The monitoring system in the fields is inspected through internal audits on a periodic basis. In addition to this, once a year, Ernst & Young as an independent organisation undertakes surprise field visits at randomly selected sample farms in a relevant number to back Bayer CropScience's monitoring results. The Bayer CropScience Child Care Program covers far more than a contractual ban on child labour for seed suppliers, and the necessary age verification in the fields. Working with local NGOs such as the Naandi Foundation and Vignana Jyothi, the Program actively supports local education under the umbrella brand "Learning for Life" for children and young people – thus offering an alternative to working in the field. In total, more than 2,000 students have taken part in these initiatives since 2005.



As of February 2010, for example, 1,402 children have been rehabilitated into formal school by the cooperation with the Naandi Foundation, and 1,203 students have taken part in the "Introduction to Basic Technology Program" that, since 2008, has introduced vocational elements into the curriculum of government schools in Karnataka.

Another key part of this initiative is providing farmers with incentives not to employ children. For example, more than 5,000 seed producers have been trained under the "Target 400 Program" to improve their potential earnings on a lasting basis, making it easier to abandon child labour.

[Click here to learn more.](#)

WORKING WITH RESPONSIBILITY

The plant science industry is committed to promoting practices that encourage the responsible, safe and efficient use of its products. For example, FMC Agricultural Products has established "Working with Responsibility", a social and environmental responsibility program for farmers in Latin America. This educational initiative has relied on strong partnerships with universities, technical colleges, social committees, opinion leaders and others to foster the "7 Habits of Responsible Care". By simplifying a potentially complex message, FMC has successfully implemented

best practices on the safe and proper use of chemicals across the region. In addition, because this campaign includes farmers' spouses and their children, the program has plenty of oversight to ensure the 7 habits are part of every working day.

[Click here to learn more.](#)

Our contribution to... conserving water

THE PLANT SCIENCE INDUSTRY IS COMMITTED TO:

Conserving water and protecting water quality through new technologies and improved water management techniques.

OUR AIMS

- To develop crops that further improve the stability of yields when water is limited.
- To promote modern agricultural techniques that reduce soil erosion and run off from fields.



Water efficiency has been greatly advanced through the efforts of the plant science industry – from modern plant varieties that produce higher yields, to the adoption of conservation tillage that preserves soil moisture. Biotechnology is now being used to develop higher-yielding, drought tolerant crop varieties that help preserve yields during periods of water scarcity.

USING WATER WISELY

With water becoming an ever scarcer resource, improving water efficiency is critical. A U.S. study found that 50,000 fewer gallons of water are needed to grow an irrigated acre of corn today, compared to 20 years ago. For cotton, traditionally one of the thirstier crops, water use for every irrigated acre has dropped by 32 percent.⁷

REDUCING SOIL EROSION BY UP TO 98 PERCENT

Conservation farming systems, enhanced by herbicides and biotech crops, reduce the need for cultivation, thus preserving soil moisture and reducing erosion by 50 to 98 percent.⁸

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WATER CONSERVATION IN CHINA

By 2030 it is estimated that about 3.9 billion people (47 percent of the world population) will be living in regions with severe water stress, with Asian, African and Middle Eastern countries encountering the greatest pressure on water availability.⁹ Dow AgroSciences is working with the Agricultural Bureau of Shaanxi Province in China and the non-profit environmental advocacy group Environmental Defense Fund, to implement environmentally beneficial land management practices including precision fertilizer applications, water use efficiency, soil conservation and no-till farming. These sustainable agricultural techniques are helping farmers respond to the challenges of climate change by better managing water resources, and reducing and sequestering greenhouse gas emissions.



DROUGHT TOLERANT COTTON

To help farmers tackle the global challenge of increasing water scarcity, Bayer CropScience is working in partnerships to develop drought tolerant cotton – a crop frequently affected by insufficient rainfall. Bayer CropScience's partnership with the plant trait company Performance Plants seeks to develop drought tolerant cotton using Yield Protection Technology (YPT), shown to be highly effective in preserving yields under conditions of drought stress in canola. In five years of field trials, YPT canola has produced consistent seed yield increases of up to 26 percent. Bayer CropScience is also working with FuturaGene to develop the next generation of drought tolerance in cotton.

[Learn more about drought tolerant cotton.](#)

DROUGHT TOLERANT CORN

Growing crops requires water. With the incidence and duration of droughts expected to rise, farmers need access to crops that can survive under water scarcity. In 2009, Monsanto and BASF scientists unveiled the discovery of a naturally-occurring gene that can help corn plants combat drought conditions and provide yield stability during dry spells. The companies are now working on the development of this drought-tolerant biotech trait, targeting both to get it into the hands of farmers in the developed world, and providing it royalty-free to small-scale farmers in Sub-Saharan Africa through the Water Efficient Maize for Africa (WEMA) partnership.

WEMA is a public-private partnership led by the African Agricultural Technology Foundation (AATF) to develop new African drought-tolerant maize varieties, incorporating the best technology available internationally. Monsanto is providing proprietary germplasm, advanced breeding tools and expertise, and together with BASF is contributing drought-tolerance biotech genes. The development of these royalty-free varieties is expected to provide yield increases of 20-50 percent under moderate drought conditions, compared to current varieties. This translates into the potential production of two million more tonnes of food, meaning an additional 14 to 21 million people could be fed.

[Learn more about the WEMA partnership.](#)



Courtesy of BASF

Our contribution to... addressing climate change

THE PLANT SCIENCE INDUSTRY IS COMMITTED TO:

Developing innovative products and practices that will help reduce emissions, increase carbon sequestration and enable agriculture to meet global food needs in the face of climate change.

OUR AIMS

- To develop further innovations that help plants adapt to increased stress from climate change – such as drought, heat or soil salinity.
- To develop innovations that help achieve higher yields from the same levels of nitrogen input – contributing to a significant reduction of greenhouse gas emissions from agriculture.
- To promote the development and use of renewable resources that have lower carbon footprints.
- To enable modern agricultural techniques which protect soil from erosion and reduce emissions, such as conservation tillage.
- To invest in research and development which helps address new pest pressures expected to emerge as a result of climate change.



Courtesy of DuPont

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CARPETS FROM CORN

Corn is now being used to make everything from textiles to detergents. Through science and strategic partnerships, DuPont has developed new ways of producing high-performance materials and fuels from renewable, farm-grown sources, rather than petroleum. DuPont's Renewably Sourced Materials contain a minimum of 20 percent renewably sourced ingredients by weight – reducing dependence on petroleum and creating a much smaller environmental footprint.

- Sorona polymer contains 37 percent renewably sourced material derived from corn, and is used in a wide variety of applications including textile fibres and fabrics for home interiors and apparel, carpeting, or packaging such as films, sealants, foams and rigid containers.
- Cerenol polyols contain 100 percent renewably sourced material derived from corn. Cerenol is used in multiple markets such as personal care, functional fluids and specialty polymers.

[Click here to learn more.](#)

In the face of the pressing need to adapt to climate change around the globe, the plant science industry is developing technologies and practices that will help crop production deal with changing weather patterns. Plants are being created to handle the stress of drought, heat, flooding or salinity. On cultivated land, techniques such as conservation tillage are reducing carbon emissions, preventing soil erosion and conserving moisture.

MILLIONS OF CARS 'OFF THE ROAD'

In 2008, global fuel savings associated with the switch to conservation tillage systems, and less frequent pesticide applications made possible by biotech crops, reduced carbon dioxide emissions by about 1,205 million kg – equivalent to removing over 0.5 million cars from the road. Combined with additional soil carbon sequestration gains, this is equal to removing nearly 7 million cars.¹⁰

MORE EFFICIENT BIOFUELS

Biofuels offer a clean, alternative source of power and the plant science industry is working on ways to produce biofuels more efficiently. This comes about by increasing yields, starch and oil content. Already, higher starch corn varieties are increasing ethanol plant efficiency, and tropical sugar beet varieties have been developed that are more efficient than sugar cane for biofuels in countries like India.

ADAPTING TO A CHANGED CLIMATE

As more frequent and prolonged periods of drought endanger our capacity meet rising food demands, Syngenta is developing another tool to help farmers to respond. Invinsa is a new crop protection product, developed in partnership with AgroFresh, specifically designed to protect plants from moderate drought and other stresses likely to emerge as a result of changed weather patterns. Invinsa works by blocking the ethylene signal that triggers stress response in plants in periods of drought, which increases the long-term health and yield of plants. In 2008, Syngenta conducted over 400 trials across North and Latin America to identify the regions and crop varieties where Invinsa shows the most benefit. Initial results show yield gains of up to 15 percent in corn and wheat, and it is also showing improved yields in cotton and rice production.

[Click here to learn more.](#)

NEW TOOLS TO DEVELOP VALUABLE TRAITS

Scientists at Dow AgroSciences are deploying EXZACT™ Precision Technology, a new method for targeted genome modification in plants. Its ability to specifically and efficiently add, edit or delete genes at targeted locations in plants provides researchers a greater opportunity to produce crops with complex traits such as drought tolerance and enhanced nitrogen efficiency – innovations needed to meet the challenges of climate change.



Courtesy of Syngenta

Dow AgroSciences has entered into several licensing agreements with commercial partners, and is also actively participating in research projects including one with Iowa State University to study how this technology can help improve the development of renewable bioproducts in microalgae.

[Click here to learn more.](#)



Our contribution to... preserving biodiversity

THE PLANT SCIENCE INDUSTRY IS COMMITTED TO:

Preserving biodiversity and helping protect uncultivated wildlife habitats through achieving greater productivity on cultivated land.

OUR AIMS

- To promote the adoption of biodiversity conservation measures on farms, including buffer zones, refuge areas, integrated pest management, crop rotation, and protection of pollinators.
- To support ongoing, worldwide efforts to preserve genetic resources, for example by resourcing global seedbanks.
- To conserve land and improve land management, for example by helping to protect biodiversity corridors.
- To provide tools and techniques to help combat invasive species.

Habitat loss and degradation create the biggest single source of pressure on biodiversity worldwide. Thanks to modern plant science, farmers can now grow more on each acre than ever before and improve production on sub-optimal plots of land, alleviating the threat of habitat loss. The plant science industry continues to focus on promoting best practices to help farmers achieve increased yields with the smallest possible environmental footprint.

HELPING HABITAT

During the period 1996 to 2008, higher yields from biotech crops alone are estimated to have saved an additional area of 62.6 million hectares of crop land. The potential for the future is enormous.¹¹

DEFENCE AGAINST INVADERS

It is not only food crops that are threatened by pests. Natural habitats and local biodiversity can thrive when pesticides are used to control invasive species of plants or non-native insects or other pests. For example, herbicides have helped control the spread of the Salt Cedar Tree in the U.S., which can consume up to 1,000 litres of water per day, increase soil and water salinity, and degrade habitats by outcompeting and replacing native plant species.

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CONSERVING BIODIVERSITY IN BRAZIL

Brazil's Cerrado and Atlantic Forest regions are considered biodiversity hotspots – among the 34 areas identified by Conservation International (CI) as the biologically richest and most threatened in the world, having already lost at least 70 percent of their original vegetation. In an effort to protect and conserve biodiversity in two biodiversity corridors in these regions, Monsanto has established a partnership with CI. Together, the organisations will implement best practices along Monsanto's supply chain, which is directly in contact with farmers in these regions, and concrete conservation actions to prevent illegal deforestation and local extinction of species.

[Click here to learn more.](#)



OPERATION POLLINATOR

Pollinating insects are crucial for the production of many food crops and essential for maintaining many natural habitats. In Europe, more than 80 percent of crop types are directly dependent upon insects for pollination. Syngenta-led Operation Bumblebee began in 2004 as a major UK-wide initiative to restore natural habitats and food sources to revive the 30 year decline of the bumblebee. The programme trains farmers to sow and manage clover rich field corners and boundaries, and has met its target of establishing more than 1,000 hectares of pollen and nectar habitats on over 500 farms across the UK. This habitat creation for pollinators has been proven by independent monitoring to increase bumblebee populations by up to 600 percent, butterfly numbers up to 12-fold and other insects more than 10-fold within three years.



Building on this success, Syngenta has launched Operation Pollinator for commercial farms across Europe, with projects running concurrently in France, Germany, Hungary, Italy, Spain, Portugal and the UK. Growers participating in this five-year programme will be provided with seed mixes, along with innovative pesticide use practices and agronomic advice designed to benefit pollinators. Syngenta's aim is to help reverse the decline in pollinators across Europe by creating an additional 10,000 hectares of habitat dedicated to pollinators.

[Click here to learn more.](#)

CHESAPEAKE FARMS

Chesapeake Farms in Maryland, U.S., is part of DuPont's commitment to sustain natural habitats. This 3,300 acre facility is devoted to the development, evaluation and demonstration of advanced agricultural practices and wildlife management techniques, designed to be environmentally sound, productive, economically viable and socially acceptable. Farmers are invited to explore Chesapeake Farms using a self-guided tour that highlights the agricultural and wildlife management practices being applied, and provides a description of the management techniques farmers can apply to their own land. Biodiversity conservation measures demonstrated on the tour include waterfowl rest and feeding areas, nesting structures, farm ponds, marshes, woodlots, and hedge and fence rows to provide travel lanes, food, cover and nesting sites for many species of wildlife.

[Click here to learn more.](#)

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