



## BEYOND PROMISES: Facts about Biotech/GM Crops in 2018



A wide-angle photograph of a lush green agricultural field, likely soybeans, stretching to the horizon. The sun is high in the sky, creating a bright lens flare and casting a warm glow over the scene. The sky is a clear blue with scattered, light clouds. The foreground shows the detailed texture of the green leaves.

**The increase in  
global biotech crop  
adoption in the past  
23 years manifest  
the satisfaction  
of more than 17  
million farmers.**



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2018 was the 23<sup>rd</sup> year of commercialization of biotech/GM crops. The experience of the last 23 years of commercialization confirmed the promise of biotech crops to deliver substantial agronomic, environmental, economic, health, and social benefits to small and large scale farmers worldwide.

Biotech crops are the fastest adopted crop technology in recent history, reflecting farmer satisfaction of their benefits and high adoption rates.

This booklet presents the important highlights about biotech/GM crops in 2018, from ISAAA Brief 54 *Global Status of Commercialized Biotech/GM Crops in 2018* available at <http://www.isaaa.org/>.



**The number of countries planting biotech crops more than quadrupled from 6 in 1996 to 26 in 2018.**

## **Biotech/GM crop area in 2018 attains new record-high adoption at 191.7 million hectares worldwide.**

On the 23<sup>rd</sup> year of commercialization of biotech/GM crops in 2018, 26 countries grew 191.7 million hectares biotech crops, an increase of 1% equivalent to 1.9 million hectares from 189.8 million hectares in 2017.



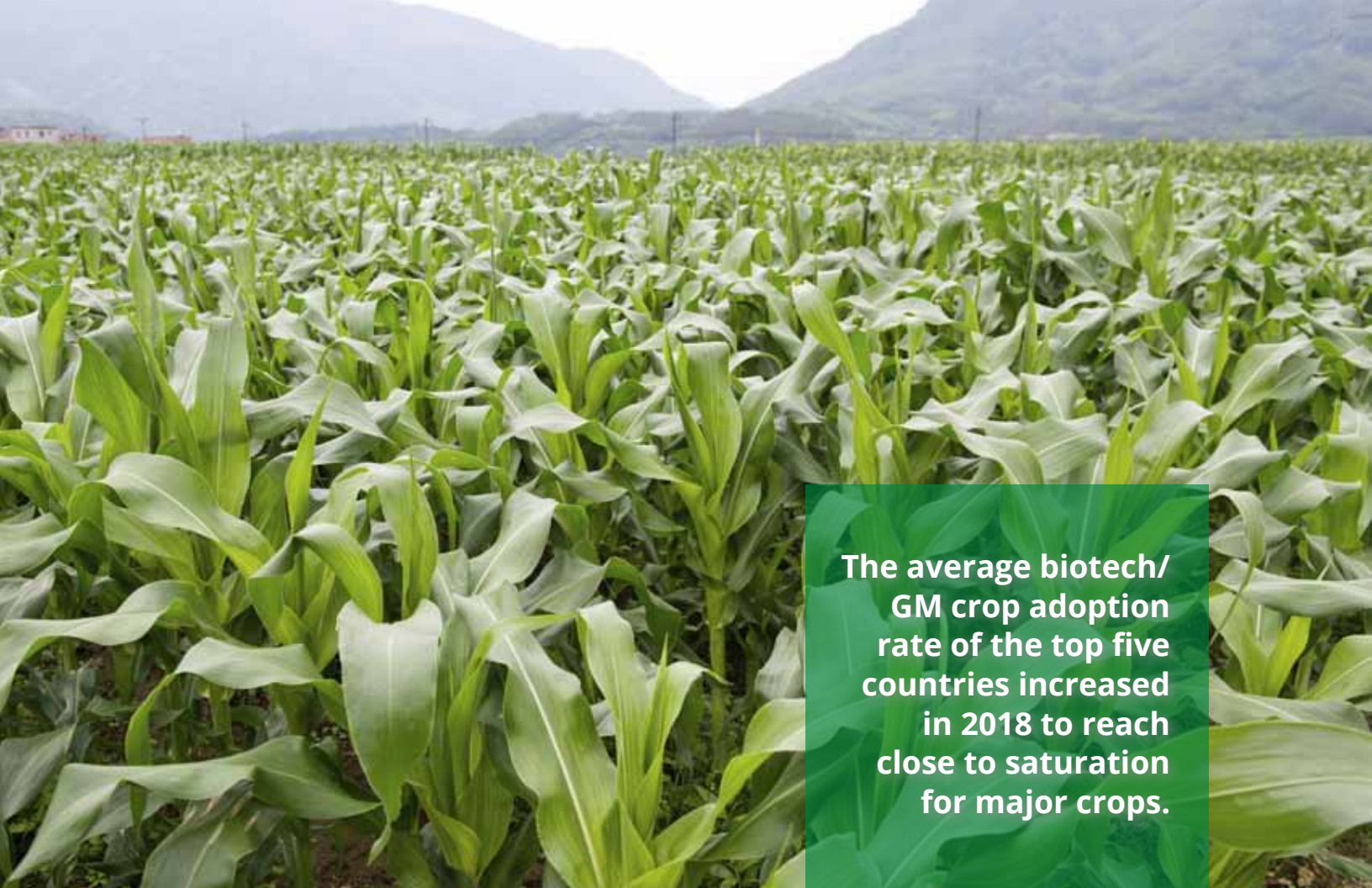
## **Biotech/GM crop area increased ~113-fold from 1996, the fastest adopted crop technology in the world**



The cumulative global area of biotech/GM crops reached 2.5 billion hectares in 23 years (1996-2018) of commercialization cultivation.

The successful adoption rate of biotech/GM crops shows the significant benefits it delivers to small and large farm-holders and to consumers as well.





**The average biotech/  
GM crop adoption  
rate of the top five  
countries increased  
in 2018 to reach  
close to saturation  
for major crops.**



A wide-angle photograph of a large agricultural field. The foreground and middle ground are filled with rows of young, green crops, likely soybeans, planted in neat, parallel lines. The rows recede into the distance, creating a strong sense of perspective. The sky above is filled with large, dramatic, grey and white clouds, suggesting an overcast or stormy day. The overall scene conveys a sense of large-scale farming and agricultural productivity.

**Brazil continues  
to be the top  
developing country  
in 2018, planting  
biotech soybeans,  
maize, and cotton.**



## In 2018, 70 countries adopted biotech crops — 26 countries planted and 44 additional countries imported.

Biotech/GM crops in 2018 were grown by 26 countries — 21 developing and 5 industrial countries. Developing countries grew 54% of the total global biotech crop area.

An additional 44 countries (18 + 26 EU countries) formally imported biotech/GM crops for food, feed, and processing. Thus, a total of 70 countries adopted biotech/GM crops in 2018.



## Two new developing countries, Indonesia and eSwatini planted biotech crops for the first time in 2018.



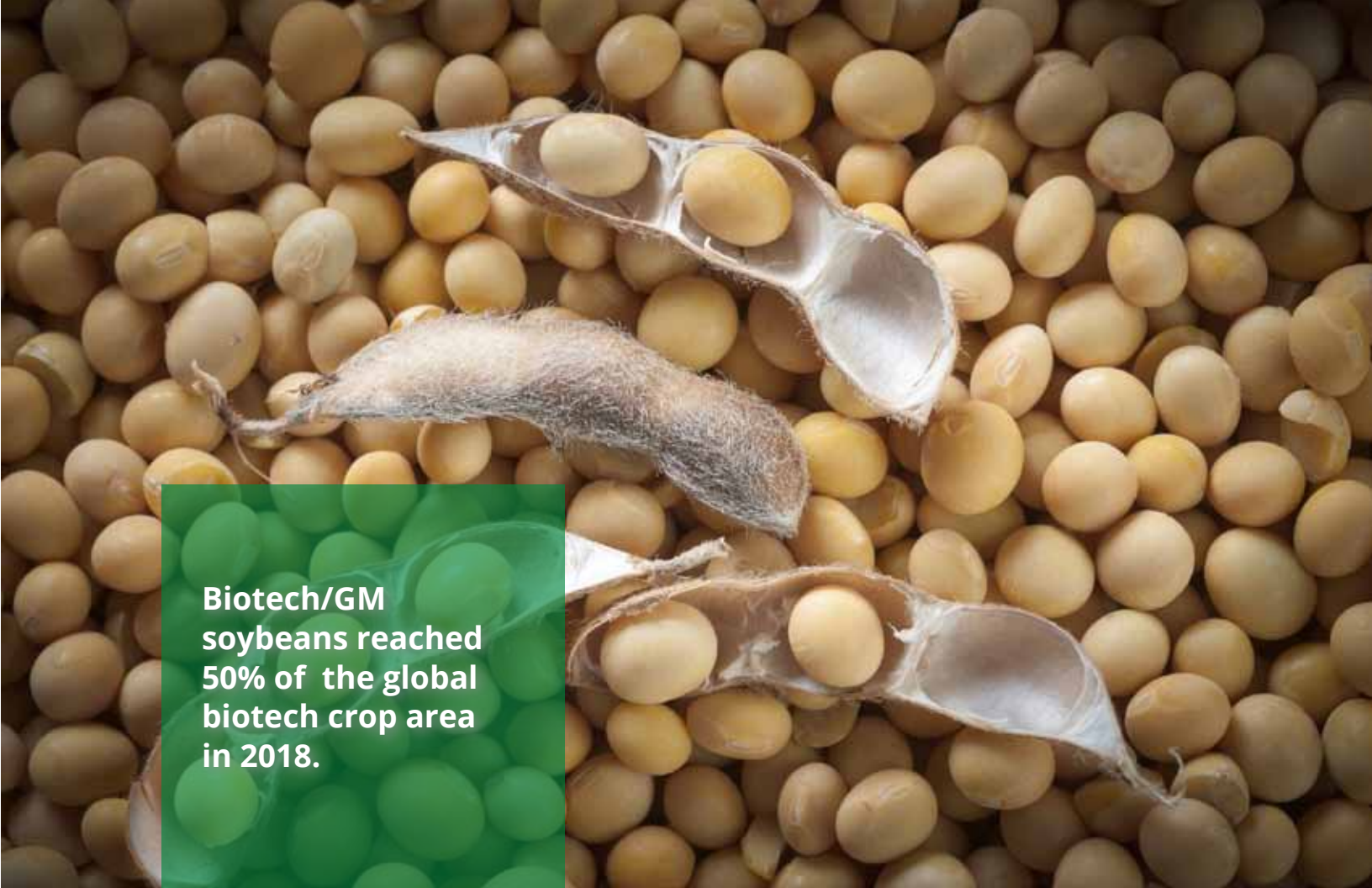
Indonesia, a returning biotech country, has planted a new biotech drought tolerant sugarcane with yields 20-30% higher than parental varieties during drought.

The Kingdom of eSwatini (formerly Swaziland) planted Bt cotton for the first time in 2018. This brought the number of African countries planting biotech crops to three again.





**Twenty-one  
developing  
countries grew  
54% of the global  
biotech area in 2018.**



**Biotech/GM  
soybeans reached  
50% of the global  
biotech crop area  
in 2018.**



## The major biotech/GM crops grown in 2018 are soybeans, maize, cotton, and canola.



In 2018, four biotech/GM crops comprised the most number of hectares: soybeans (95.9 million hectares), maize (58.9 million hectares), cotton (24.9 million hectares), and canola (10.1 million hectares).

Other biotech crops grown in 2018 include alfalfa, sugar beets, papaya, squash, eggplant, potato, apples, pineapple, and sugarcane.


## Herbicide tolerance remained the dominant trait, occupied 45% of the global biotech/GM crop area.



Herbicide tolerance in soybeans, canola, maize, alfalfa, and cotton remained the dominant trait.

Biotech/GM crops with stacked traits increased from 77.7 million hectares in 2017 to 80.5 million hectares in 2018, a ~3% increase equivalent to 2.8 million hectares.





**Stacked traits are favored by farmers for all three major biotech crops: maize, soybeans, and cotton.**

A photograph showing a person silencing a large pile of harvested corn in a field at sunset. The person is standing on the pile, holding a shovel, and a large auger is pouring more corn onto the pile. The scene is silhouetted against a bright, low sun, creating a dramatic, golden light. The background shows a vast field of harvested corn stretching to the horizon under a clear sky.

**Biotech/GM maize  
has the largest  
number of approved  
events in 2018: 137  
in 35 countries.**

## From 1992 to 2018, 4,349 regulatory approvals were issued for 27 biotech/GM crops.

From 1992 to 2018, 4,349 approvals were issued by regulatory authorities for 387 biotech events from 27 biotech crops. Such approvals were issued to biotech crops for food use (2,063), feed use (1,461), and for environmental release or cultivation (825).





## Biotech/GM crops provide more diverse offerings to consumers in 2018.



Biotech/GM crops have expanded beyond soybeans, maize, cotton, and canola to give more choices to consumers and food producers.

These biotech crops include alfalfa, sugar beets, papaya, squash, eggplant, potatoes, and apples, all of which are already in the market.



**Biotech Innate® potatoes with non-bruising, non-browning, reduced acrylamide, and late blight resistance traits and non-browning Arctic apples were planted in the USA and Canada in 2018.**



**More than 6 million farmers in India planted 11.6 million hectares of Bt cotton in 2018.**



## Up to 17 million farmers from 26 countries planted biotech/GM crops in 2018.

More than 95% of 17 million farmers that grew biotech crops in 2018 are risk-averse, small, resource-poor farmers in developing countries.

In the last 23 years, millions of farmers in ~26 countries worldwide have made independent decisions to plant biotech crops.



## Biotech/GM crops contribute to global food security, sustainability, and climate change.



From 1996 to 2016, economic gains of US\$186.1 billion at the farm level were generated globally by biotech crops, due to reduced production costs and substantial yield gains.

Biotech crops have reduced the amount of pesticides used by 670 million kilograms. In 2016 alone, fewer insecticide sprays reduced CO<sub>2</sub> emissions by 27.1 billion kilograms, equivalent to taking 16.7 million cars off the road for a year.



**Biotech/GM crops  
helped alleviate  
poverty by helping  
up to 17 million small  
farmers and their  
families, totaling more  
than 65 million people.**





## **BEYOND PROMISES: Facts about Biotech/GM Crops in 2018**

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