OPEN FORUM ON AGRICULTURAL BIOTECHNOLOGY IN AFRICA

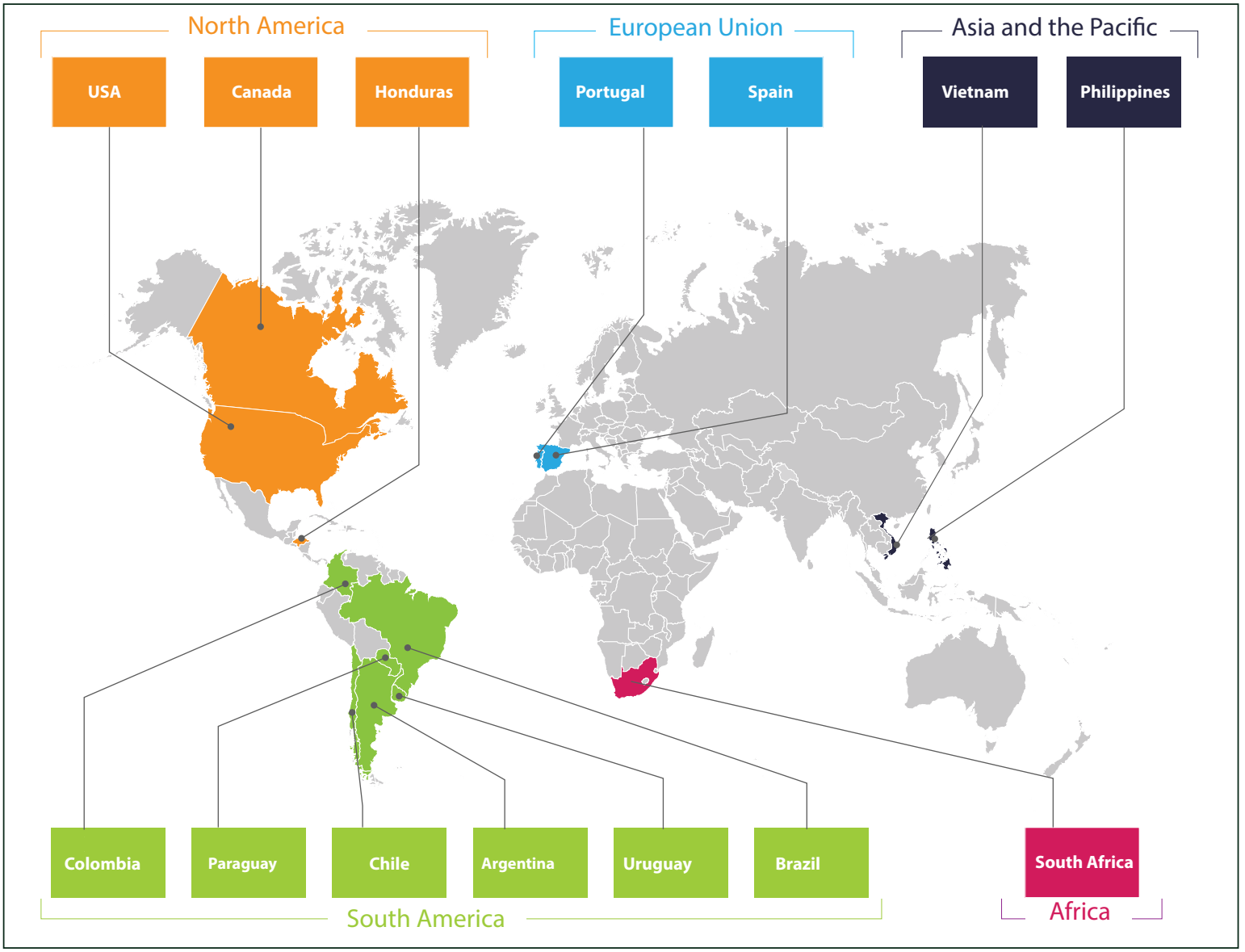
ISAAA
INTERNATIONAL SERVICE FOR THE ACQUISITION OF AGRI-BIOTECH APPLICATIONS

GLOBAL STATUS AND ECONOMIC BENEFITS OF BIOTECH MAIZE PRODUCTION BY 2019

Maize is the 2ND most adopted biotech crop globally after soybeans

Maize is planted on **60.9 MILLION** hectares occupying **32%** of the global biotech crop area.

14 Countries Planted Biotech Maize in 2019



Biotech Maize Adoption by Country

Maize was the most planted biotech crop

33.17 million hectares

covering

46% of the biotech area in the country

Maize was the second most planted biotech crop in Brazil.

16.3 million hectares

representing

31% of the country's biotech area.

Philippines planted

875,000 hectares

Vietnam planted

92,000 hectares

Maize was the second most planted biotech crop in Argentina.

5.9 million hectares

In the European Union, Spain and Portugal continued to plant biotech Bt maize at

111,883 hectares

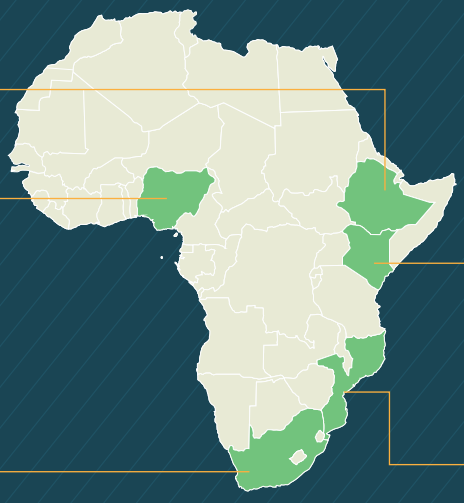
Spain planted

107,130 hectares

Portugal planted

4,753 hectares

Maize Traits Under Various Stages of Research in Africa by 2019



Ethiopia

Drought tolerance and insect resistance stacked events

Nigeria

Drought tolerance and insect resistance stacked events

South Africa

Insect resistance multi stacks event

Kenya

Insect resistance

Mozambique

Drought tolerance and insect resistance stacked events

Biotech Maize Approvals and Authorizations In 2019

6 events were approved in **Argentina**

Mozambique completed application for environmental release of drought tolerant maize

The EU
2 new varieties of biotech maize approved for food and feed uses.

New biotech maize trait(s) approved:

IR/pyramided HT (glyphosate, glufosinate, dicamba, 2,4-D) and intermediates in maize,

IR pyramided (for coleopteran, hemipteran, and lepidopteran)/HT (glyphosate, glufosinate) and intermediates in maize.

Status of Approved Events for Biotech Maize

Maize has the most number of approved events

146 events in 35 countries

Herbicide tolerant maize event NK603 has the highest number of approvals globally (61 approvals in 28 countries + EU 28 as one).

See Global Status of Commercialized Biotech/GM Crops in 2019 at http://bit.ly/ISAAAbrief55

Socio-economic Benefits of Biotech Maize

Biotech crops have enormous benefits to the environment, health of humans and animals. Biotech crops contribute to the improvement of socio-economic conditions of farmers and the general public.

Global economic gains contributed by biotech crops in the last 23 years have amounted to US$224.9 billion 16 to 17 million farmers, 95% of whom come from developing countries.

Biotech maize, together with other biotech crops, contributed to food security, sustainability, and climate change solutions by:

iii. Providing a safer environment by

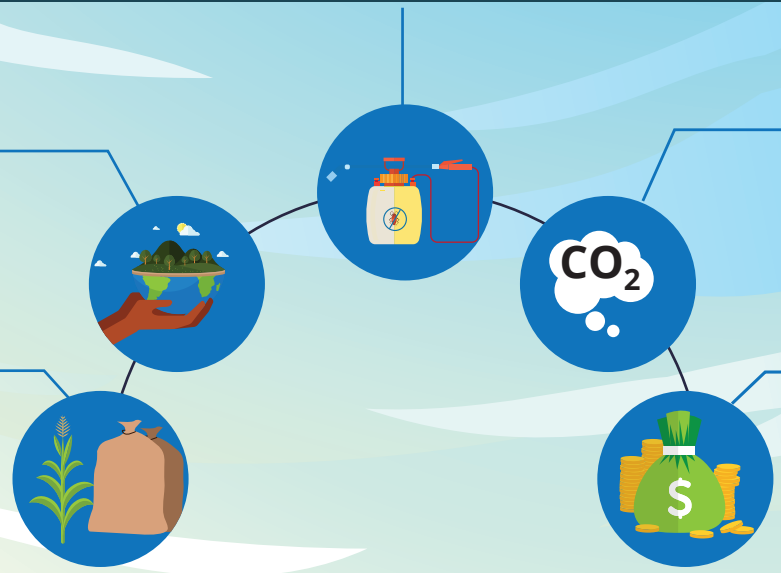
Saving on 776 million kg. a.i. of pesticides in 1996-2018 and by 51.7 million kg in 2018 alone from being released into the environment;

Saving on pesticide use by 8.3% in 1996-2018, and by 8.6% in 2018 alone;

Reducing EIQ (Environmental Impact Quotient) by 18.3 % in 1996-2018, and by 19% in 2018 alone

ii. Conserving biodiversity - by saving 231 million hectares of land in 1996-2018; and 24.3 million hectares of land in 2018 alone

iv. Reducing CO2 emissions in 2018 by 23 billion kg, equivalent to taking 15.3 million cars off the road for one year



i. Increasing crop productivity - by 822 million tons valued at US$224.9 billion in 1996-2018; and 86.9 million tons valued at US$18.9 billion in 2018 alone

v. Helping alleviate poverty through uplifting economic situation of 16-17 million small farmers, and their families totalling over 65 million people.