

MODERN BIOTECHNOLOGY FOR AGRICULTURAL DEVELOPMENT AND FOOD SECURITY



What is crop biotechnology?
Crop biotechnology is a set of tools and techniques that alter crops or parts of the crops to make or modify products, and improve or develop microorganisms for specific agricultural uses. Modern biotechnology involves traditional plant breeding combined with genetic engineering.

Crop biotechnology in the Philippines

First to have a regulatory policy
1992

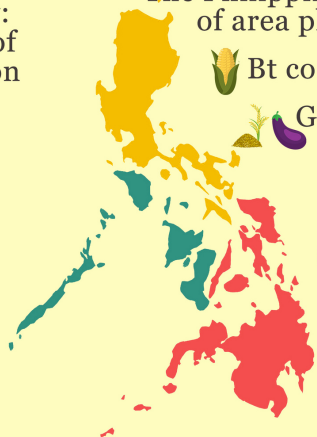
GM mega-country: commercial scale of GM corn production
2004



The Philippines is a biotech mega-country, leading in terms of area planted with GM crops.

Bt corn is widely planted in CAR, Regions 1, 2, & 10.

Golden Rice, Bt Talong & Bt Cotton are in commercial propagation application process.





Challenges


Addressing food security & agri dev't challenges become more compelling due to climate change.


Dev't and application of modern biotech appeared to have stalled and some policy makers attribute this to policy constraints.


Pros and Cons of Modern biotechnology

 Enhances yield performance and profitability

 Improves resistance to pest and disease, thus avoiding harmful effects of pesticides

 Increases tolerance to abiotic stresses (excess water, low sunlight/temperature, heavy metals, UV radiation)

 Enhances quality traits

 Needs to be cost-effective

 Faces the risk of obsolescence since tech requires continuous improvements/innovations

Weaknesses in current regulatory policy



Weak institutional support (i.e. lack of in-house experts, no agency leading in devt)



Redundancy in agency functions (e.g., DA-BC duplicates BPI role in reviewing risk assessment results)



Regulatory trigger: Process-based approach



High regulatory costs

Proposed Modern Biotechnology Act (Establishment of Biotechnology Authority of the Philippines or BioAP)



Expedite the regulatory decision-making process in biotechnology to:

- ▶ help ensure the health & well-being of Filipinos
- ▶ promote competitiveness in crop production & economy
- ▶ help reduce hunger & poverty
- ▶ help mitigate the effects of climate change



Assume regulatory & promotional (developmental) roles



Implement product-based regulation

Policy Recommendations



Intensify the development & promotion of GM crops



Disseminate science-based information on safety of GM products & health benefits



Strengthen the value proposition for GM technologies (i.e. abiotic stress-tolerance to adapt in climate change, agronomic & quality traits)



Address the high cost of GM corn seeds thru a Humanitarian licensing agreement similar to Golden Rice



Establish BioAP



Legislate a crop biotech regulatory body in a separate bill



“Transitory Period” recommendation

- ▶ Reinstate the leadership role on the regulatory functions of National Committee on Biosafety of the Philippines (NCBP) through an Executive Order

- ▶ Expedite through a Joint Administrative Order the adoption of the Technical Working Group’s recommendations on reforms to the DOST-DA-DENR-DOH-DILG Joint Department Circular No. 1 in 2016

Source: A Review of Policies on Crop Biotechnology: Impact on Food Security and Agriculture Development in the Climate Change Era. (2021). DOST-PCAARRD | DA-PCAF