



After 16 years of public debates:

**Public perception of  
agri-biotech:  
Aligning our next move**

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# Key Questions

- How does the public perceive agri-biotech 16 years after public debates on GM crops?
- What changed? What did not change?
- After Bt corn, how does the public react to animal biotech?

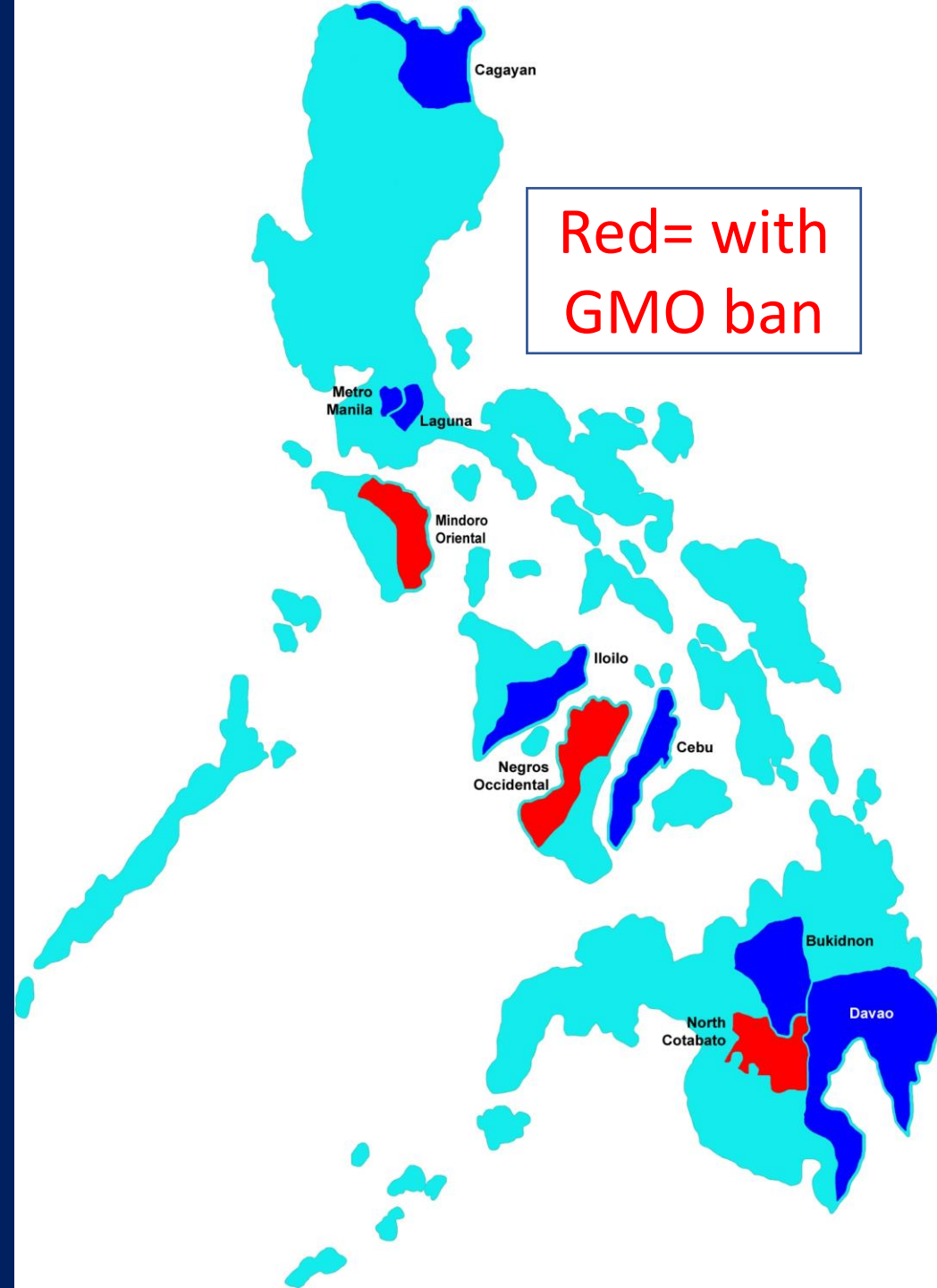
# Main concerns raised in public debates

- GM crops have potential negative impacts on human health.
- MNCs has the monopoly over seed production and distribution of GM seeds.



# Areas covered by the study

1. Cagayan
2. Metro Manila
3. Laguna
4. Mindoro Oriental
5. Iloilo
6. Negros Occidental
7. Cebu
8. Bukidnon
9. North Cotabato
10. Davao



# Who constitutes the public?

- 9 Stakeholder Groups



1. Businessmen and traders (120)

6. Policy makers (80)

2. Consumers (220)

7. Religious leaders (80)

3. Extension workers (140)

8. Scientists (80)

4. Farmer leaders/  
Community leaders (160)

9. Students (220)

5. Journalists/Media persons (80)

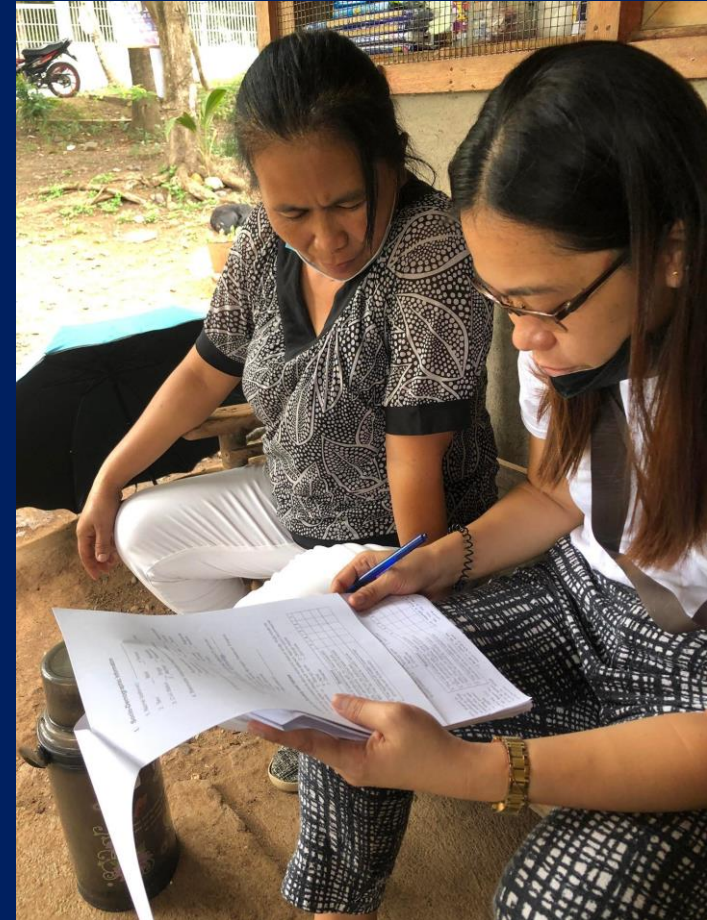
TOTAL = 1, 180

# How was the study done?

- Multi-stage purposive sampling
- Surveys: google survey & field survey
- Field coordinators per province

## Data Analysis

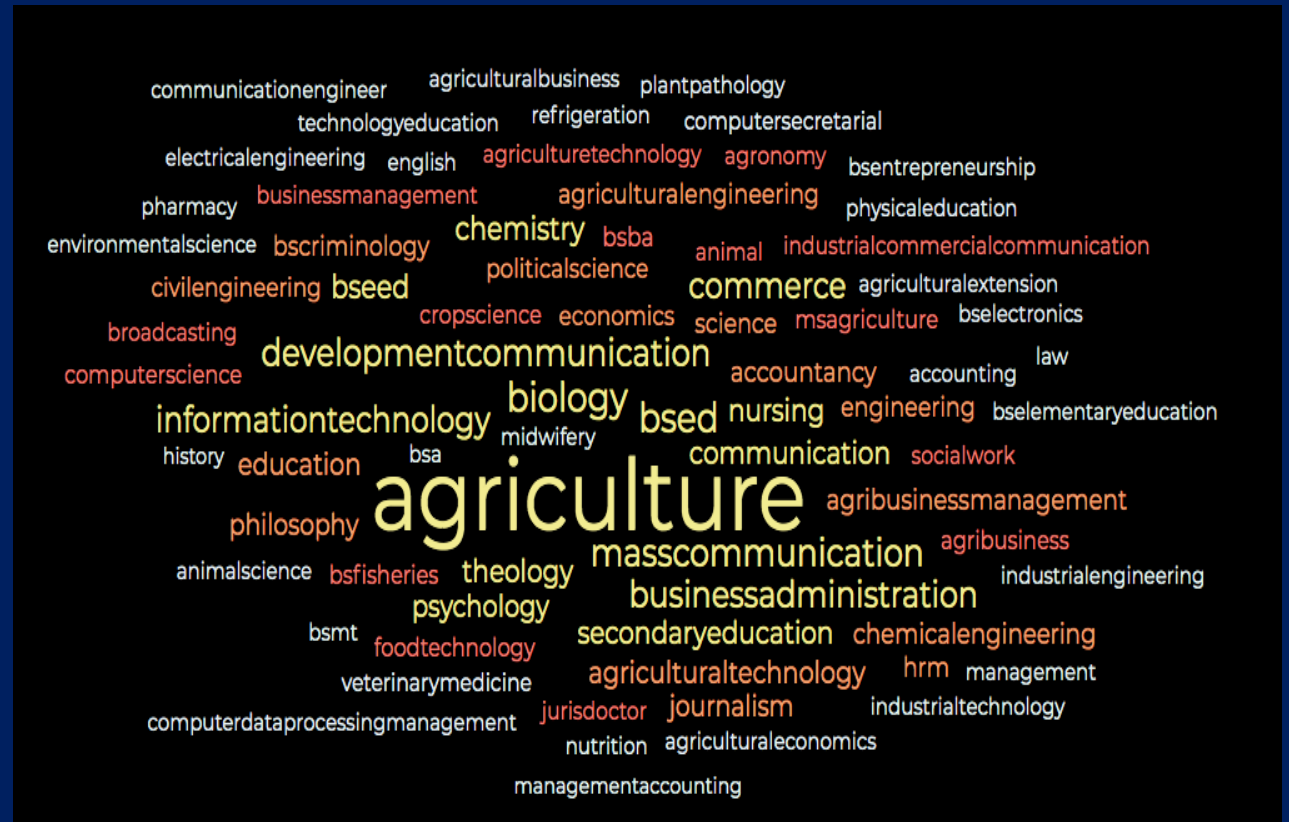
- Frequency count
- Percentage
- Weighted mean
- Quiz score
- Word cloud



# Key Findings

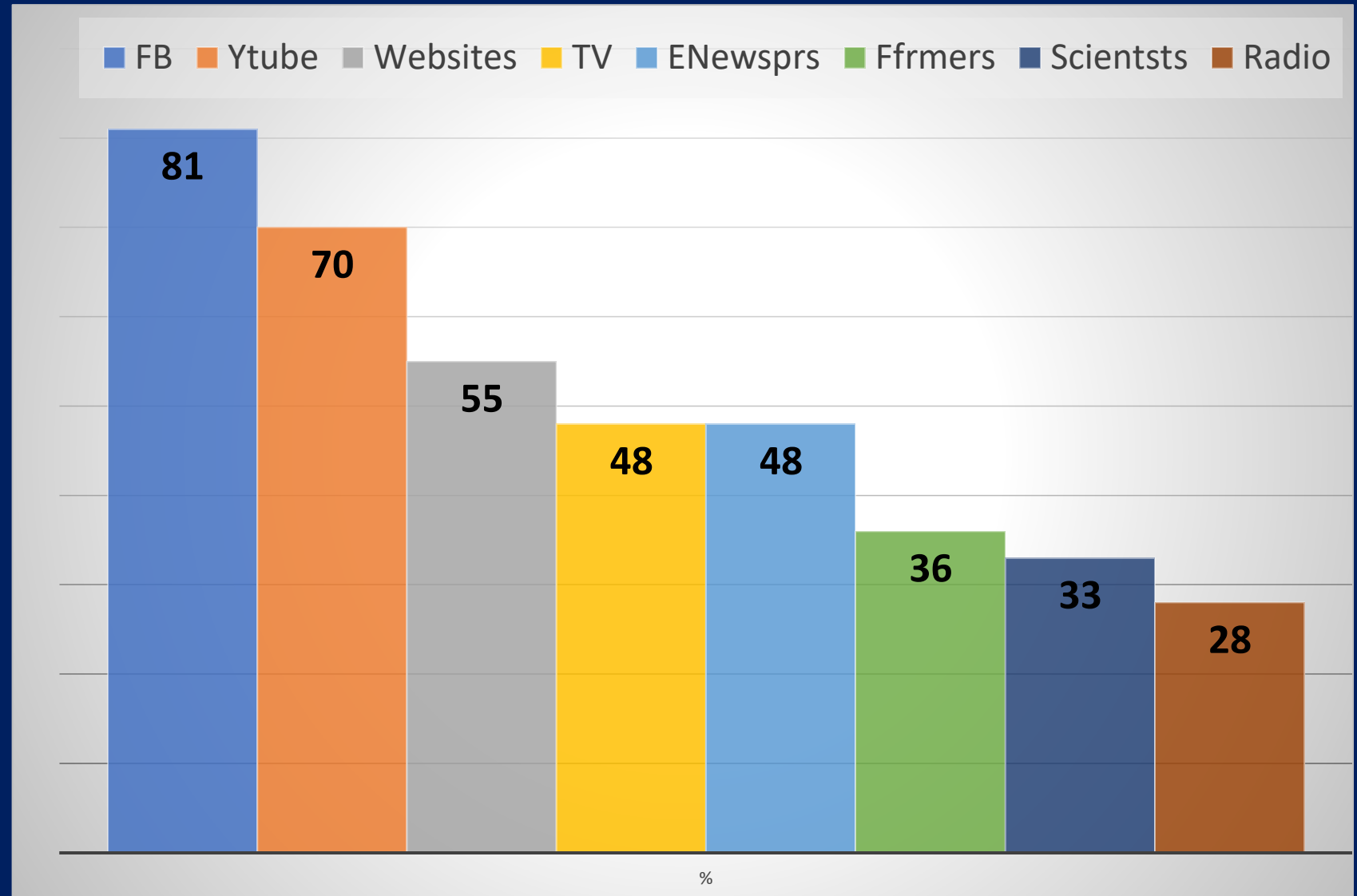
# Profile of the public covered by the study

- Female (51 %)  
Male (48 %)
- Single (48 %)  
Married (46 %)
- College graduates:  
agriculture





# Sources of biotech information (%)



## Ranking:

1. Social media
2. Mass media
3. Person sources

# Level of trust on sources of information

Scientists  
Total Trust



Social Media & Mass media  
Some Trust



**Social Media**  
Facebook  
Youtube

Some trust

Most accessed

**Scientists**  
(R&D institutions)

Total trust

Least accessed

# Correct knowledge about agri-biotech

8/11= 73%



- Emerging technologies always have potential risk. (89.3%)
- *GM crops are now commercially (a) grown and (b) sold in the Philippines. (71.1%, 75.3%)*
- Yeast for brewing consists of living organisms (71.8%)

# Correct knowledge about agri-biotech

- Food science cannot guarantee zero risk. (69.9%)
- *In genetic engineering, genes of interest are transferred from one organism to another.* (67.5%)
- All crops have been genetically modified through domestication, selection, and controlled breeding through time. (56.4%)
- Golden rice contains beta carotene. (54.6%)

8/11 = 73%



## Wrong /Uncertain knowledge about agri-biotech (3/11= 27%)

Plant viruses are transferred to humans when they eat vegetables and fruits infected with plant viruses. (62.1%)

### Scientific Fact

Viral diseases in plants are unlikely to infect humans because their cells differ greatly. It is difficult for plant virus to enter an animal cell in the first place.



# Wrong /Uncertain knowledge about agri-biotech (3/11 = 27%)



- Ordinary tomatoes do not contain genes, while GM tomatoes do. (53.9%)

## Scientific Fact

All living things, GM or not, have genes. Genes are inherited and control the characteristics and traits of the organism's offsprings.

# Wrong /Uncertain knowledge about agri-biotech (3/11= 27%)

By eating GM food, a person's  
genes could be modified. (52.3%)



## Scientific Fact

Genes of GM crops are not acquired by humans through mere eating. All genes for that matter are inherited.



# Attitude towards biotech

(rating scale: 1 lowest -5 highest)

- Use of biotech in food production is in accordance with their personal and societal values. (4.21)
- *Man may be allowed to modify nature.* (4.27)
- Safe GM foods can be distributed. (3.9)



Regulation of modern technology should be left to the industry.  
(3.8)

# Favorable views of the public about biotech (rating scale: 1 lowest -5 highest)

- Government agencies are doing their best to ensure the food we eat is safe. (4.18)
- Expert statements on biotech are based on scientific analysis and are therefore objective. (3.90)
- Biotech is good for Philippine agriculture. (3.88)
- The risks of genetic engineering have been greatly exaggerated. (3.5)

## Unfavorable views of the public about biotech (rating scale: 1 lowest -5 highest)

- Genetic engineering of food products can create unexpected new allergens or contaminate products in an unanticipated way, resulting in threats to public health. (3.66)
- *Biotech in food production benefits only big agricultural companies.* (3.62)

# Participation in biotech activities

(relatively low)

- I will attend information session on biotech, if there is any. (46.5%)
- I will contribute time and money to an organization that promotes GM foods. (45.5%)



# Views on uses of biotech

## *Biotech crops considered :*

- Tomatoes resistant to virus
- Papaya resistant to virus
- Eggplant resistant to insect borer
- Rice resistant to blight disease
- Rice with more vitamin A
- Papaya that takes longer to ripen
- Cotton resistant to insect infestation

## *Principally for :*

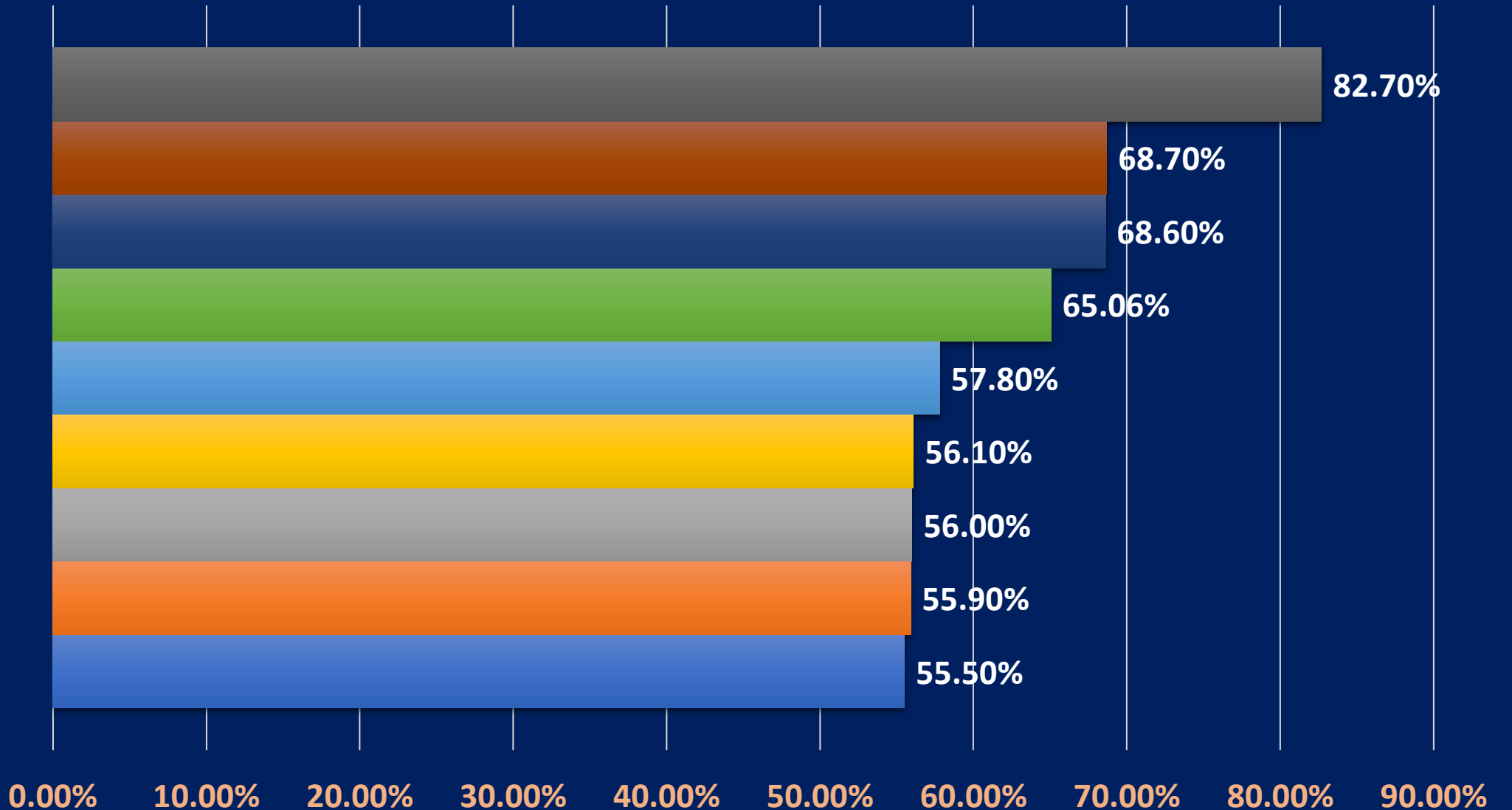
- a) commercial growing
- b) human food

## *Less for:*

- a) animal feed
- b) industrial by products

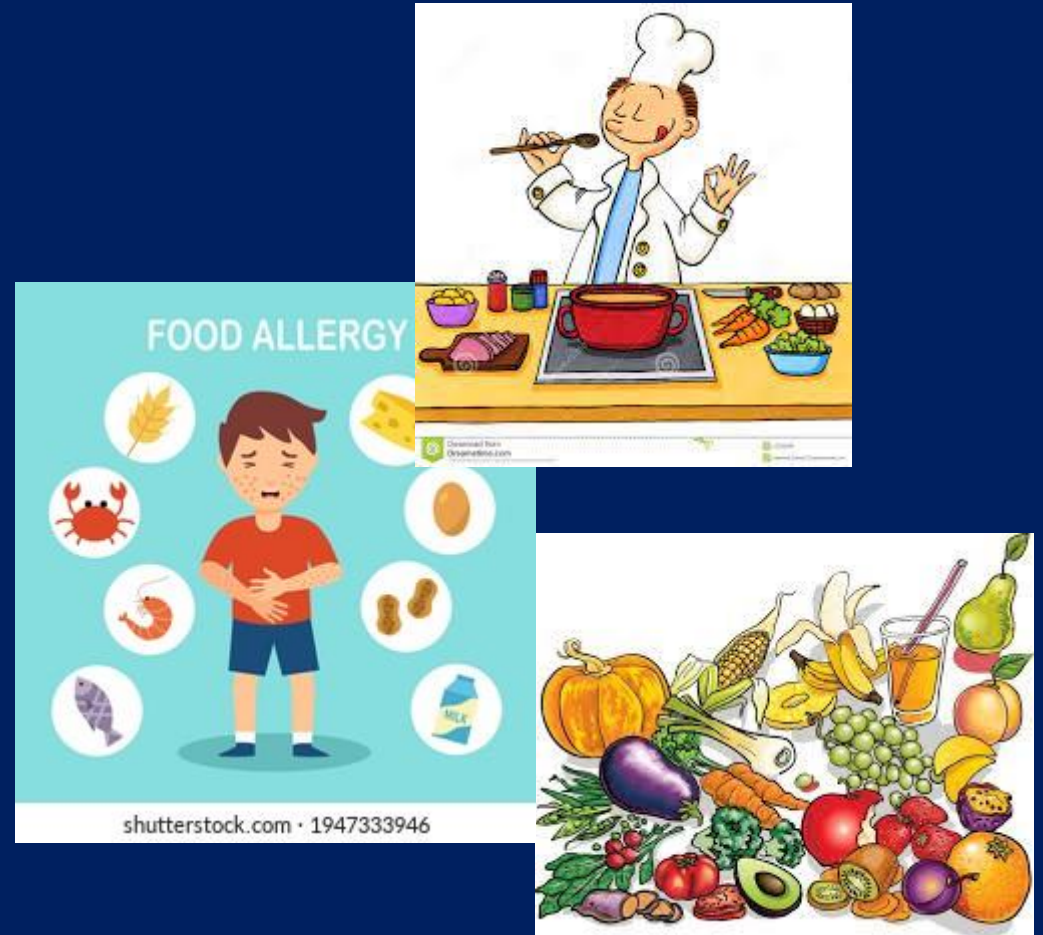
# Ranking of stakeholders based on knowledge

■ Scntsts ■ ExtWkrs ■ J/Media ■ Stdnts ■ FCLdrs ■ Relgp ■ Pmkers ■ Cnsmrs ■ BsTrdrs



# Factors to consider in using biotech for food production

1. Nutritional quality (95.5%)
2. Non-poisonous (94.8%)
3. Non-allergenic (94.3%)
4. Better taste (90.3%)
5. Price (89.2%)
6. Pesticide residue (81.4%)
7. Food appearance (79.2%)



# Perception of govt regulations on biotech

- Government agencies have scientific facts as basis for sound decisions (4.02)
  - Current regulations sufficient to protect people from harm (3.55)
- Should include inputs from NGOs (4.12)
  - Provide the public with vital information re: health effects of GM foods (3.77)



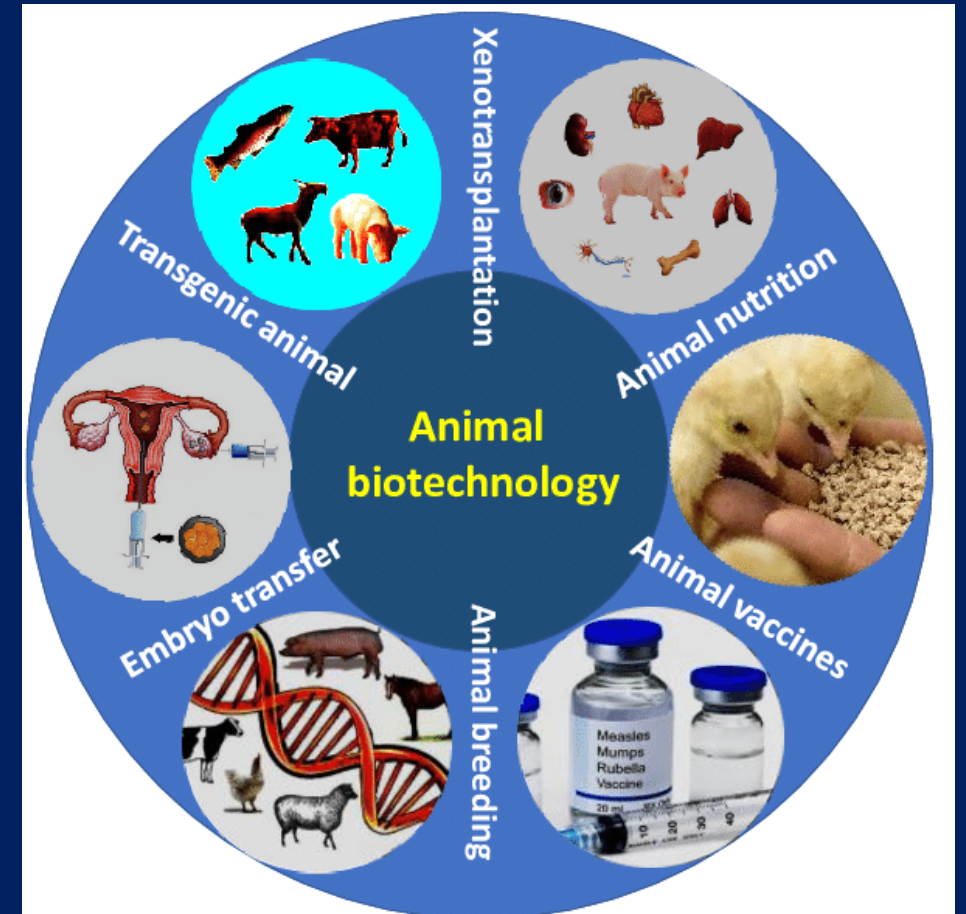


# Public reaction to biotech in animal production

(rating scale: 1 lowest-5 highest)

(Aware = 66%)

- High need for more information about animal biotech (4.42)
- High trust that scientists are working on it for benefit of the people (4.08)
- Moderately support animal biotech for medical treatments (3.5)
- Moderately agree to support animal biotech unreservedly (3.4)



# Grounds for having reservations towards animal biotech



High	
Respect for animal rights and welfare (ethical)	76 %
Presence of unknown risks (safety & health)	74%
Low	
Interfering with nature	48 %
Religious ground	22%

# What changed or did not change after 16 years of public debate on GM crops?

Item	2006 Study	2022 Study
Info sources	1. Mass media/online sources 2. Interpersonal	1. Social media (FB,YT) 2. Mass media/online sources 3. Interpersonal
Most trusted	Scientists (academe, R&D) )	Scientists (R&D, academe)

# What changed or did not change after 16 years of public debate on GM crops?

Item	2006 Study	2022 Study
Knowledge of biotech	Very good	Very good
Knowledge of genes, viruses	Considerably Low (58.76%)	Even lower (52.7%)
Attitude towards biotech	Favorable	Favorable

# What changed or did not change after 16 years of public debate on GM crops?

Item	2006 Study	2022 Study
Unfavorable views about biotech	<ul style="list-style-type: none"><li>-Threat to public health</li><li>-Control of seeds by MNCs</li></ul>	<ul style="list-style-type: none"><li>-Threat to public health</li><li>-Control of seeds by MNCs</li></ul>
Uses of biotech crops	For commercial growing & food	For commercial growing & food

# What changed or did not change after 16 years of public debate on GM crops?

Item	2006 Study	2022 Study
Perception of government regulations	Favorable	Favorable
Uses of biotech crops	For commercial growing & food	For commercial growing & food

# What changed or did not change after 16 years of public debate on GM crops?

Item	2006 Study	2022 Study
Participation in biotech-related activities	Relatively low	Relatively low
Would contribute time & money in promoting biotech	Disagree	Moderately agree

Aligning our next move



# Tap trusted sources of information

- Tap the scientists to serve as speakers, narrators, story tellers of agri-biotech

- Who are these scientists?
- Are they willing to talk to the public?
- Why or why not ?
- If willing, what do they need to enable them to carry out the job?  
(skills, incentives, reform in their career system, capacity to use social media, partnership with communicators, etc. )

# Media appropriation: where is the public now ?



Have we reached a critical mass of the public?

# Social media usage (Philippine data)

- Social media users : 84 m or 72% of total population
- Age of users: 16-64 years old; ave. age: 25
- Attention span of viewers: 8-10 seconds
- Average time spent: 3 hrs and 43 min per day
- Reasons for using:
  - stay connected
  - how to do things
  - be updated with the latest



# Fake information in the social media

(USC study, 2023)

The structure of social media makes it prone to fake information :

- Contents being patronized are those that are sensational and eye catching
- Addicting and encourages users to form the habit of posting , sharing and engaging
- Habitual users forward 6x more fake news than occasional ones.
- Incentive is on popularity, not on accuracy

# Concepts for popularization and emphasis

Major issue to be hurdled:

- health impacts & safety of GM crops

Popularize misconceived terms that induce fear related to safety : genes, viruses

- Definition
- Analogy
- Comparison & contrast
- Drawings and illustration
- Demonstration of the process involved

# Address the issue on MNCs

- GM crops can only be produced under controlled condition (laboratories) which MNCs can afford to put up and maintain.
- GM crops are being offered as options for those who need them. Users should be left on their own to decide on what is best for them.



# Project Team

- Project Leader: Dr. Rhodora R. Aldemita
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- Research Assistants: Ms. Juvy N. Gopela  
Ms. Dannah Mae S. Torres

10 Field Coordinators from SUCs and govt agencies  
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UPLB La Granja R&T Station, USC, CMU, USM)