



Principles of Effective Biotech and Biosafety Communication

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Presentation Overview

- **About ISAAA**
- **Biotech and Biosafety Communications Landscape**
- **Rules For Effective Communication**
- **Principles of Effective Biosafety Communications**
- **Message mapping**



ISAAA AfriCenter

INTERNATIONAL SERVICE
FOR THE ACQUISITION
OF AGRIBIOTECH
APPLICATIONS



- A not-for-profit organization, co-sponsored by public and private sector
- ISAAA promotes choice



We share knowledge **FREELY** while respecting the rights of others to make their own decisions

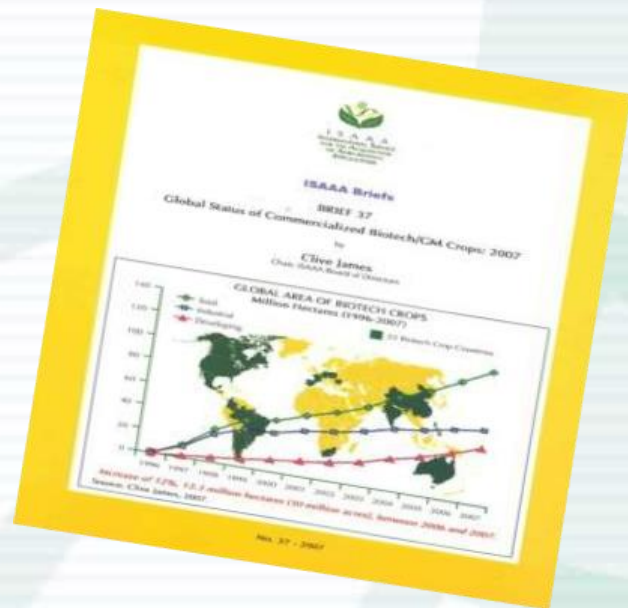
ISAAA AfriCenter AT A GLANCE

Evidence to Impact



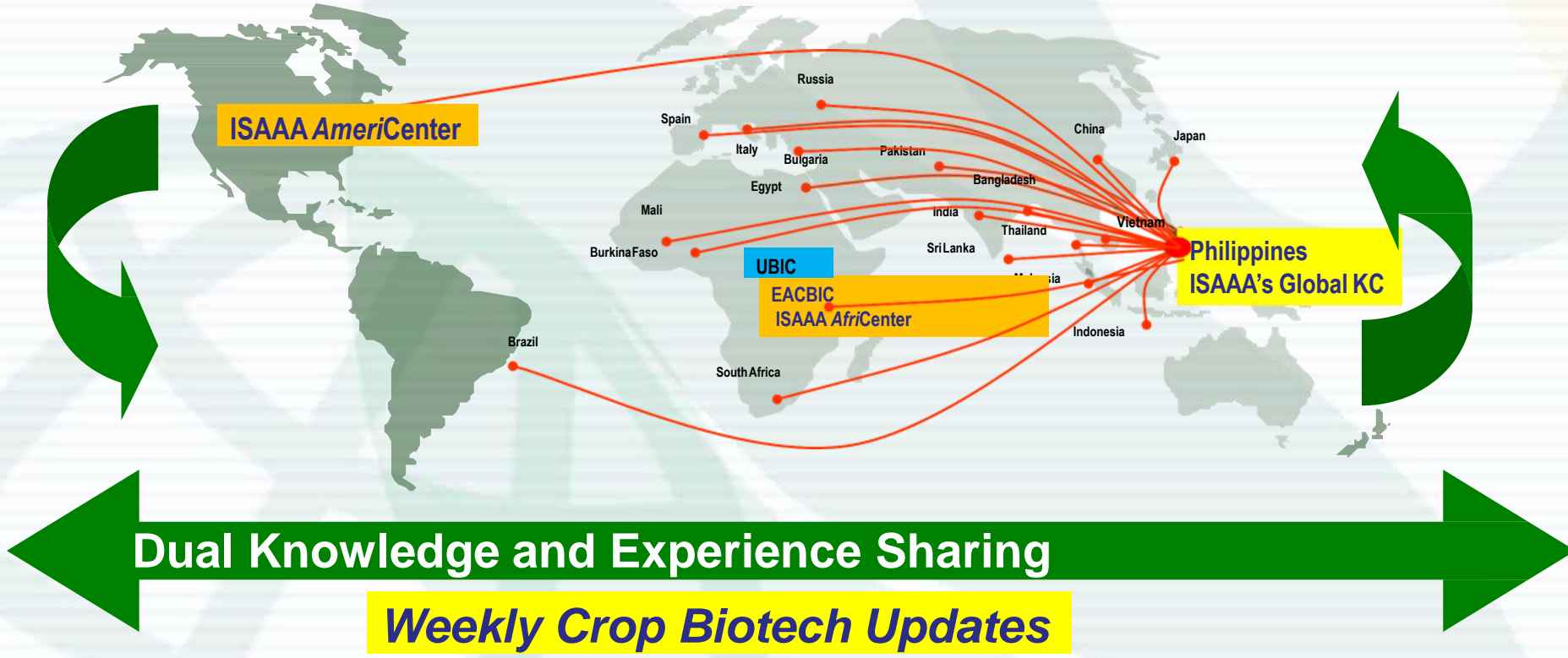
ISAAA'S FLAGSHIP PUBLICATION

- ✓ Annual Global status report on commercialization of GM crops
- ✓ Since 1996 when first GM crops were commercialized
- ✓ Gives a global analysis on progress and trends with GM crops
- ✓ Revised annually



ISAAA's Communications' and Global Knowledge Sharing Initiative

Network of 26 Biotech Information Centers - BICs

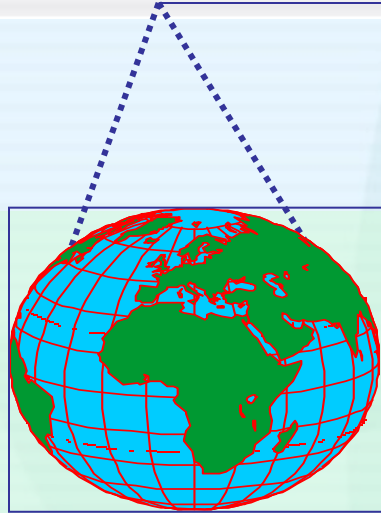


Rationale...

Reading from the same script...but stakeholders read different messages



GMOs have generated a network of opinions globally



Miracle or
Monster?



And...varied perceptions on risks and benefits
Real vs. Perceived risks

News Values and media sensationalism



Are you eating
science's
mistakes??



Creating:

- ✓ Fear
- ✓ Anxiety
- ✓ Outrage
- ✓ Mistrust



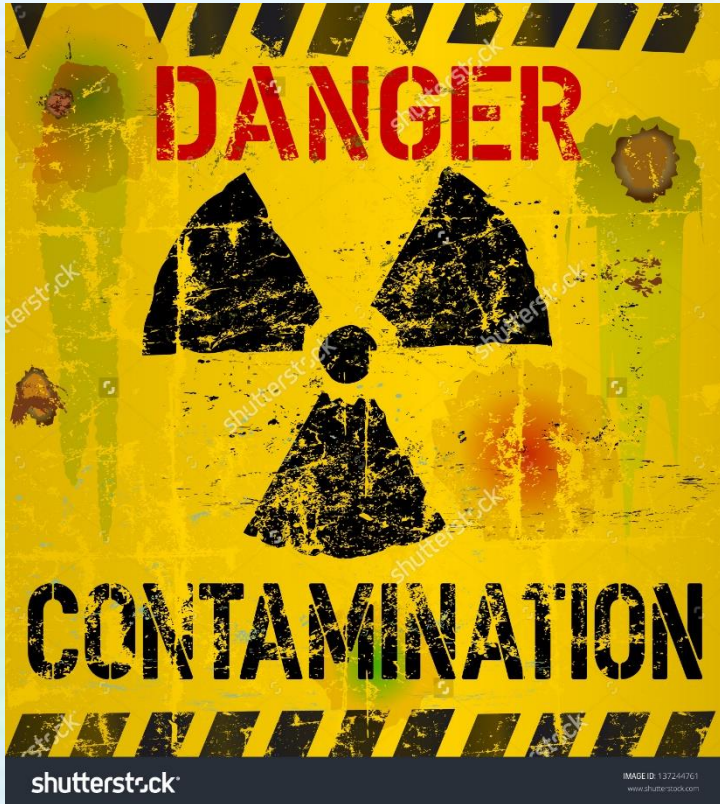
Non-verbal Communications Shaping Public Perceptions too..



Some Biosafety procedures cause public outrage and panic!



Choice of words...



Contaminant: A **polluting or poisonous** substance that makes something impure.

Leading to: Communication Challenges



- Selective listening/reading
- Hearing things not said
- Emphasizing the negative
- Misinterpretations
- ***Feelings overrule facts***


We cannot *NOT* communicate!

Communication?

✓ Communication **is getting through**>



X Information sharing **is giving out..**
Sharing info to BCH?



Scientists' comfort zone

The Communication Challenge



- Different information needs for stakeholders
- Different languages
- Poor public communication skills by scientists → technical jargon
- Lack of openness
- Communication not considered a priority
- Limited resources (human and finances)
- Mind-sets: “Proponents” verses “Opponents”

General Rules for Effective Science Communication

Rule 1: Effective communication must be planned

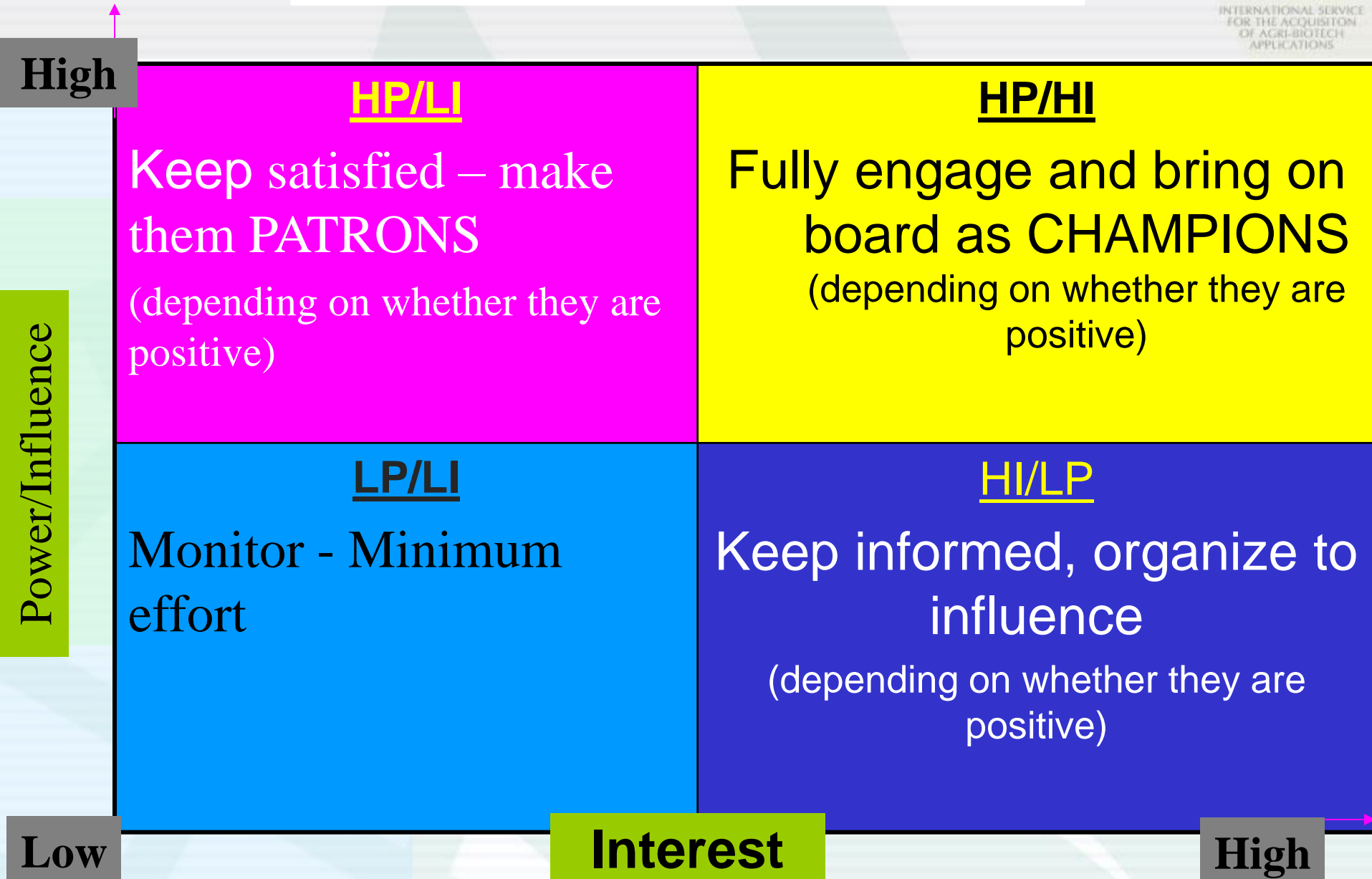


Understand your stakeholder needs through Net-mapping

Net mapping – Helps identify key stakeholders and their networks

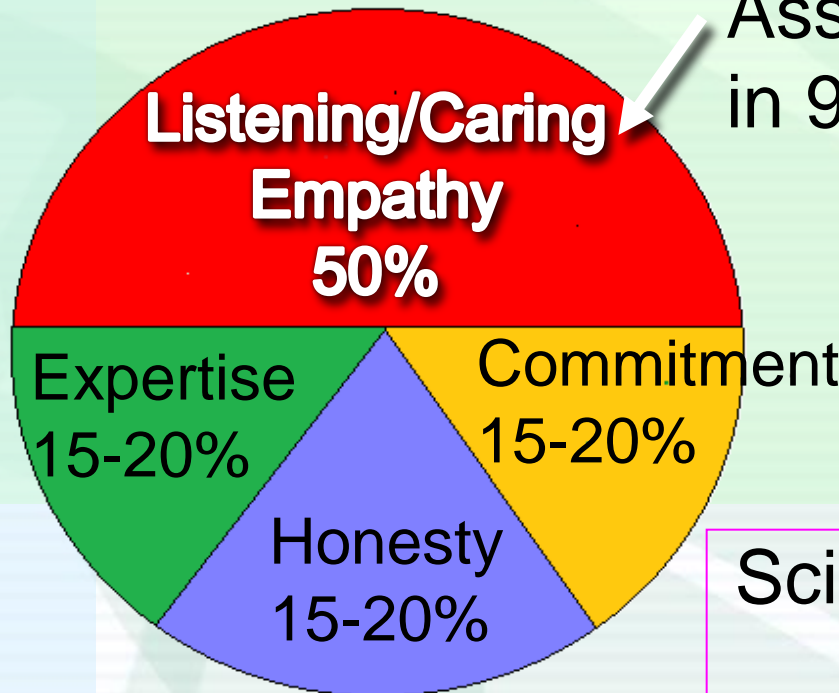


Stakeholder analysis



Rule 2: Build Trust and Credibility

- People want to know that **YOU** care before they care about what you know (Covello, 2001)



Assessed
in 9-30 seconds!

Scientists must shed
off the **“Ivory
tower”** mentality

Things that will erode trust



- 1. Lack of competence/openness**
- 2. Delayed response**
- 3. Arrogance**
- 4. Adapting a defensive stance**

Rule 3: Understand the Gap

Non-Scientists

So What?

Conclusion /
Bottom line

Info relevant
to conclusion

Background - The
rest of the story

Scientist

Technical Theory/
Assumptions

Collecting data -
adjusting theory

Conclusion

Public's interest is on safety, efficiency and markets and NOT technical jargon!

Principles of Biosafety Communication

Rationale for Risk Communication

- A component of Risk Analysis:

(re: Codex Alimentarius)

Risk Assessment

Risk Management

Risk Communication

- Required by legislation

Rationale for Risk Communication

Risk...a threat of loss, real or perceived, to that which we value

Creates high concern/low trust situation → Needs to be openness and trust



What is Risk Communication?

“A science-based approach for communicating effectively in:

- -High concern;
- -Low trust;
- -Sensitive; or
- -Controversial situations.”



(Ref: Dr. Vincent Covello, Center for Risk Communication)

Risk Communication Goal

Helps develop messages that are:

1. **Believable** – Based on Trust Determination Theory
2. **Convincing** – Based on Risk Perception Theory
3. **Clear and concise** – Based on Mental Noise Theory
4. **Positive** – Based on Negative Dominance Theory

Source: Dr. V. Covello, Center for Risk Communication

Message: Being Believable

Trust Determination Theory



- People who are upset/concerned are often distrustful
- When people think they may lose something, their acceptance of a message is based on **trust and credibility**

Message being: Convincing Risk Perception Theory

- When people are concerned, stressed or upset, the gap between risk perception and reality often becomes wider

Low Concern/Fear

- Trustworthy sources
- Benefits
- Under one's control
- Voluntary
- Fair
- Natural origin
- Children not victims

Higher Concern/Fear

- Untrustworthy sources
- Few or unclear benefits
- Controlled by others
- Involuntary
- Unfair
- Human origin
- Children as victims

Familiar?

Your message should be **convincing**.

- Avail information in a timely manner → Deliver in an effective manner/speak with conviction → Show fairness and opportunity for involvement in decision

1. CCO Principle – Trust Theory

- **People want to know that you care before they care what you know**

Message	Example: Does consuming GM maize cause cancer?
Compassion	I understand your concern <i>(empathize and NEVER rubbish concern)</i>
Conviction	I believe that health and safety of our people is very important <i>(be convincing)</i>
Optimism	FAO & WHO have endorsed procedures used to assess safety of biotech products which regulatory authorities in Kenya subscribe to...

2. Rule of 3 Principle – Mental Noise Theory

Message being Clear and Concise

- When people are under stress, they have difficulty hearing, understanding, and remembering information
- They lose as much as **80%** of the information that is communicated to them

Everything in threes:

- 3 key messages
- Each key message repeated 3 times
- Each key message supported by 3 supporting facts

3. 3/30/30 Principle



- Response contains 3 messages
- Has a total of 30 words
- Is delivered in 30 seconds

Message maps makes this possible

Safety of GM Maize



Concern: Can you guarantee that GM maize is safe?

- **Short Response:** “I can guarantee that safety evaluation of GM cotton was done according to international scientific standards. These standards are accepted by WHO. Results were verified by independent evaluators and the National Biosafety Authority.
- **Note:** 3 messages, 30 words in 30 seconds,

Note: Message enhanced by referring to credible authority

Message: Being Positive

Negative Dominance Theory



When people are upset...

- Negative information carries more weight than positive information
- People tend to think negatively and listen to negative information

4. 1N=3P Principle – Negative dominance theory

When people are upset, they tend to focus more on negative than on positive information!

Environment 11
TUESDAY 16 March 2004 StarTwo

Illness linked to GM crop

Filipino villagers stricken with a mysterious illness have put the blame on transgenic corn, writes JOHN AGLIONBY.

THE recently planted rows of pineapple plants in the 1.5ha field on one side of the Malayan family home look neat and well-tended, but are otherwise not really worth a second glance.

But what occurred last year on and around this plot in Kalyong village, on the southern Philippine island of Mindanao, is threatening to turn this unremarkable field into a battleground in the war over genetically modified (GM) crops.

For the first time there are indications that the pollen from the bacillus thuringiensis (Bt) maize sown here last year may have contributed to human illness.

Dr Terje Traavik, the scientific director of the Norwegian Institute of Gene Ecology, who was asked last October to analyse blood samples from 39 of the 100 people who fell ill, has said that a link might exist between GM crops and human health.

"My interpretation is there is a coincidence in time between two different phenomena," he said. However, he stressed that more tests were needed before a more definite conclusion could be drawn.

"Within a week I too was sick with a stomach ache and diarrhoea." Others noticed that their livestock was suffering. "One day the horse ate some of the corn plants and its appetite disappeared," said Nestor Catoran. "The belly swelled, its mouth started frothing and it slowly died."

Villagers are linking the corn to the deaths of four other horses, which were disposed of without any analysis.

However, all the villagers are convinced that the corn is in some way responsible for their illness. One of the owners of the land, Sensie Victoriano, accepts that the villagers fell ill, but laughs at suggestions it was because of the corn, tens of thousands of acres of which were cultivated across the country last year with no resulting accusations. Victoriano blames "a group of activists who are against GMOs".

Traavik, who describes himself as a GMO sceptic and not an opponent, says it is highly unlikely the Bt toxin was the only cause of the villagers' sickness. "There's no illness that's caused by only one factor," he said. "What happened in there (Kalyong) could have been an infectious agent."

HOW TO RESPOND

1. Express empathy (plus story)
2. State negative but positively
3. Positives with conviction
4. Avoid words like – No, Can't, Don't, Never, Nothing, None

5. AGL- 4 (Average Grade Level)

Average grade level of target population minus four grade levels

“When people are stressed and upset, they typically process information at four grade levels below their average grade level.”

- They become irrational so...**keep responses short & language simple**

Word Choice /Key Message content

Technical Term	General Interpretation	Suggestions
Biotech risk assessments	Biotech is risky	National experts assess crop safety according to international standards.
Genes	Messing with nature	Hereditary information
Contained Field Trials	Biotech is unsafe and cannot be “released”	Research trials – scientists are evaluating the potential product.
Toxicity testing	Biotech is toxic	National experts conduct safety assessments before the product is grown by farmers.
Genetic engineering	Scary – not natural	Modern biotechnology
Recombinant DNA	Scary	Plant improvement
Gene gun, etc.	Scary	Delivery system
Environmental release	Monsters...no control	Open field cultivation
Contamination	Unsafe products	Co-existence/Gene transfer?

6. IDK (I Don't Know) Principle

- Repeat question (except negatives)
- Say you don't know/cant answer/wish you can answer
- Give the reasons why you don't know or can't answer
- Indicate follow up with deadline
- Bridge to what you can say

7. Primacy/Recency Principle



- When people are stressed and upset they typically focus on that which is said first (primacy) and last (recency)
- Address concerns promptly and use most recent/updated information

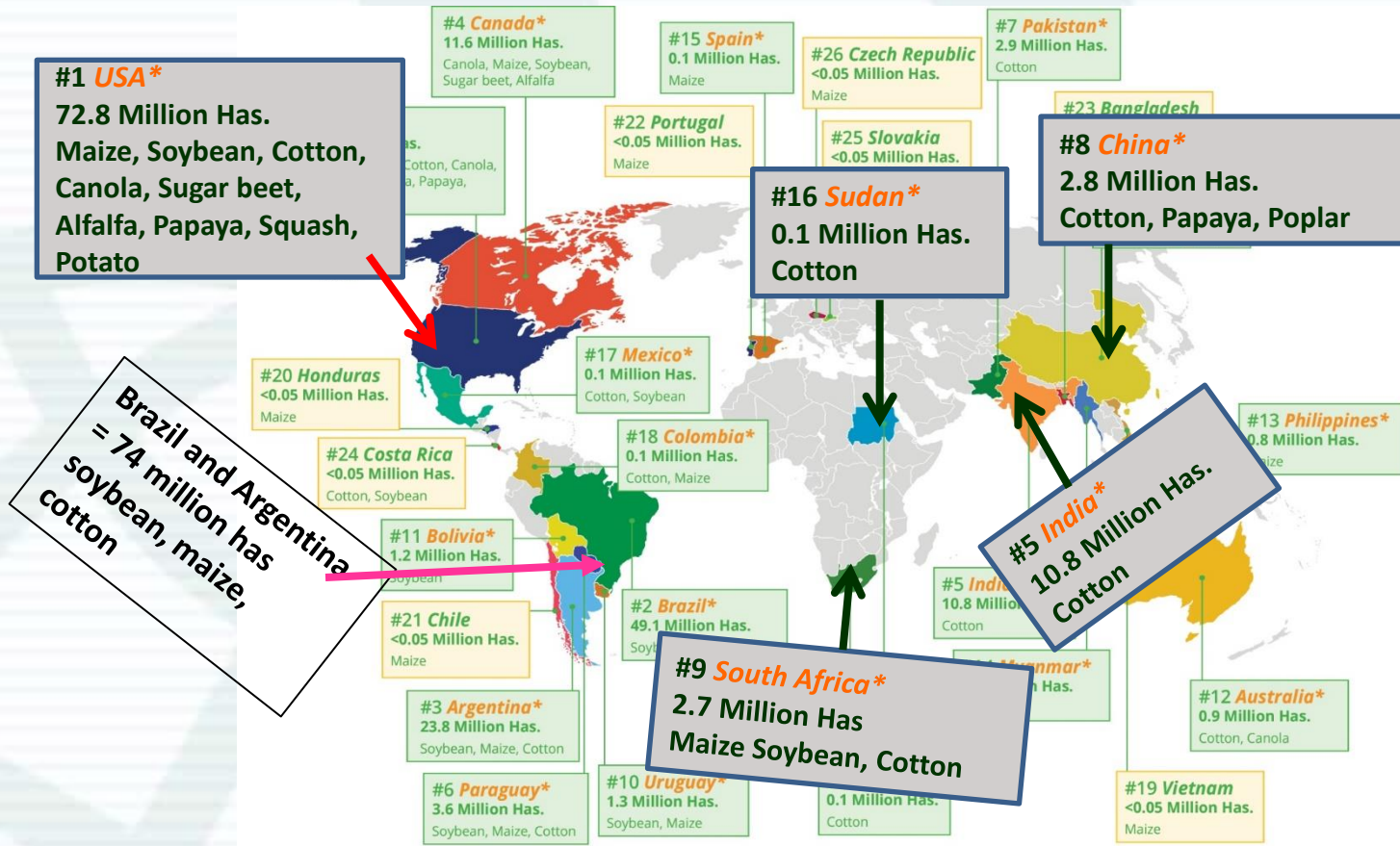
Note: In Biosafety communication

Avoid: $A+B+C = D$

Start with solution: $D = A+B+C$

Remember: You have 9-30 seconds to establish trust!

Biotech Crop Countries and Mega-Countries*, 2016



Brazil and Argentina = 74 million has soybean, maize, cotton

*18 biotech mega-countries growing 15,000 hectares, or more, of biotech crops.

Best Practice – planned communication
Being proactive than reactive!

APP model

Anticipate: List all possible public concerns

Prepare: Messengers, Message, Means (3M)

Practice: Regularly engage the public

Part One - Thank you!



Subscribe to the Crop Biotech Update:
www.isaaa.org/subscribe/ke

Biosafety Concerns



- Food safety
- Human and animal health
- Environmental impact
- Regulatory process related
- Social economic impacts

Rationale for Message development



Based on **mental noise theory** - states that when people are upset they often have

- Difficulty hearing, understanding, and remembering information.
- Mental noise reduces ability to process information by over 80 percent.

Why develop key messages?

- Helps in being **clear and concise** -
Developing a limited number of key messages: ideally 3 key messages

Why develop key messages?

- Helps in **brevity**- the 3/30/30 rule i.e.
 - Three messages
 - Thirty words
 - Delivered in thirty seconds

Why develop key messages?

- Helps in **clarity**- Developing messages that are clearly understandable by the target audience: AGL- 4 (Average Grade Level)

What is a message map (MM)?

- Roadmap for displaying detailed, hierarchically organized responses to anticipated questions or concerns.
- Visual aid that provides at a glance the key messages.

Vincent Covello (2003)

Role of MMs in communication



- Assist in developing consistent messages in response to anticipated stakeholder concerns/interests
- Provides user friendly guidance and direction to spokespersons
- Encourages the organization/project team to speak with one voice.

7 steps in developing MM

1. Identifying stakeholders
2. Concerns/interests for each stakeholder group
3. Analyze specific concerns to identify common sets of underlying general concerns/interests

Seven steps...

4. Develop key messages for each stakeholder concern/interest based on:
 - **What you believe stakeholders should know about the concern/interest**
 - **What you want stakeholders to know regardless of the questions asked**

5. Develop supporting facts and proofs for each key message.
 - **figures and statistics, citing credible third parties**

Seven steps.....

6. Test message by asking subject matter experts to validate the accuracy of technical information in message map

7. Deliver the prepared message maps through:
 - a trained spokesperson;
 - appropriate communication channels;
 - and trusted individuals or organizations

Area of concern/interest

Key message 1

Key message 2

Key message 3

Supporting fact 1

Supporting fact 1

Supporting fact 1

Supporting fact 2

Supporting fact 2

Supporting fact 2

Supporting fact 3

Supporting fact 3

Supporting fact 3

Uses of MM

- Press conferences,
- Media interviews,
- Information forums and exchanges with e.g. policy makers,
- Web sites,
- Telephone, hot line scripts,
- Fact sheets, brochures and FAQs

Message content checklist

Accuracy

- Make sure the facts are correct
- Ensure sources are credible

Transparency

- Acknowledge any potential risks
 - Food, feed or environment
 - Enhances trust!

Recency

- Relevant and up-to-date content

Conclusion

- Message maps ensure that your information has optimum chance of being:
 - **Heard,**
 - **Understood,**
 - **Remembered**
 - **Avoids being misquoted**

FOOD AND FEED SAFETY OF MODERN BIOTECH PRODUCTS

FACT 1:
Available GM foods and feeds have a history of safety

International organizations with prestigious reputations, from the European Commission to U.S. National Academy of Sciences to World Health Organization, have assessed biotech crops and found them to be safe and beneficial to the global food supply.

The European Food Safety Authority has granted approval for placing on the market of several varieties of Bt maize for food, feed and processing.

In 2011, the European Commission released a compendium of 50 research projects & funded research from 130 projects involving 500 independent research groups over 25 years, concluding that there is no scientific evidence of food safety risks for biotech foods.

FACT 2:
Allergens and antibiotic resistance concerns are addressed scientifically

The UK Royal Society of Medicine issued a statement in 2008 reporting “no ill effects” from plant biotechnology after more than 15 years of global consumption

Scientific guidelines for development of GM products prohibit transfer of allergens to food and feeds

Researchers have developed methods to eliminate antibiotic markers from GM crops e.g. Bt maize projects in Kenya

FACT 3:
GM products are evaluated for food and feed safety

Food and feed safety assessments for GM foods are more rigorous and stringent than for conventional foods.

Food safety assessments are comprehensive and each assessment is done in accordance with scientific principles developed by the leading scientific organizations such as WHO, OECD, FAO and Codex (Kenya Bureau of Standards has adopted Codex standards)

Scientific assessments have not revealed any significant difference between GMOs and conventional food and feeds in terms of safety

Area of Research Focus

Key Message 1

Key Message 2

Key Message 3

SF1

SF1

SF1

SF2

SF2

SF2

SF3

SF3

SF3

Thank you

www.isaaa.org or

www.africenter.isaaa.org