

# UPDATE ON BIOSTIMULANTS

PREM WARRIOR

MONTEREY – MARCH 2016





# COMPANY SNAPSHOT

Valagro is a leading global biostimulants and specialty nutrients company

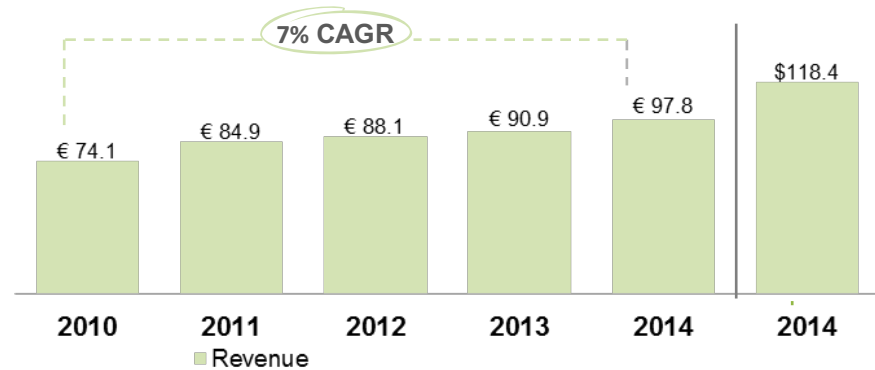
## 1. BUSINESS OVERVIEW

- ✓ Founded in 1980.
- ✓ Develops **sustainable solutions** to enhance food production and improve nutritional quality.
- ✓ **20+ product lines** (Biostimulants, Micronutrients and Water-Soluble Nutrients).
- ✓ **Three business units**: Farm, Industrials and Garden & Turf.
- ✓ Sales in over **80 countries**
- ✓ Revenue of **\$118,4 million in 2014**
- ✓ **348 employees**

Note: Euros converted to U.S. dollars assuming EUR/USD exchange rate of 1.378 for the year ended 2013. Revenue for years 2009 and 2010 are sourced from annual reports publicly filed with the Companies' Registry of Chieti.

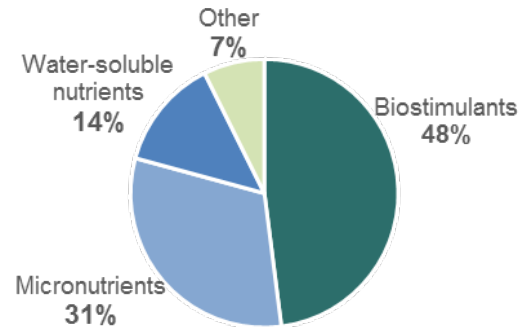
(1) Percentages do not add to 100% due to rounding.

## 2. HISTORICAL REVENUE

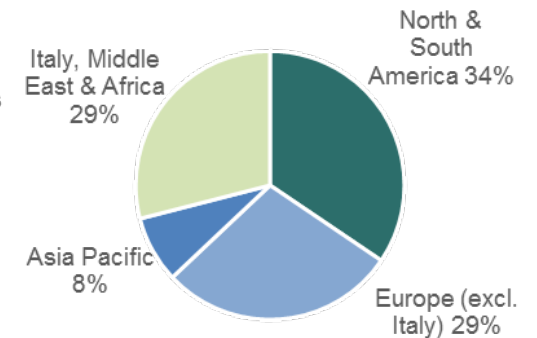


## 3. REVENUE BY CATEGORY – 2014

### REVENUE BY PRODUCT



### REVENUE BY GEOGRAPHY





# COMPETENCIES IN BIOSTIMULANT + BIOLOGICALS

## Biological expertise

- ✓ In November 2015, Valagro S.p.A announced that it has completed the acquisition of a majority stake in the Indian biopesticide company **Sri Biotech Laboratories India Limited**.
- ✓ SriBio was founded in 1994
- ✓ SriBio has developed eco-friendly solutions for addressing key pest/disease affecting farmers in the Indian subcontinent through its multiple national and international partnerships.
- ✓ SriBio is engaged in innovative research in the areas of crop improvement, crop nutrition and crop Protection serving over 10 million farmers across different States in India
- ✓ SriBio has its own manufacturing facilities in Hyderabad and Guntur
- ✓ SriBio is the first company to register Bio-Products with The Central Insecticides Board. Sri Biotech has twenty organically certified products by APEDA through Vedic Organic Certification Agency.

## ACQUIRE THE FERMENTATION TECHNOLOGY

Expand our PBS tech platform ✓

Integrate the Plant Extract  
Know How with the Biobased  
Know How ✓

## ENTER INTO THE BIOCONTROL MARKET

## PRODUCTION AND LOGISTIC FACILITIES

## ACCESS TO THE INDIAN MARKET

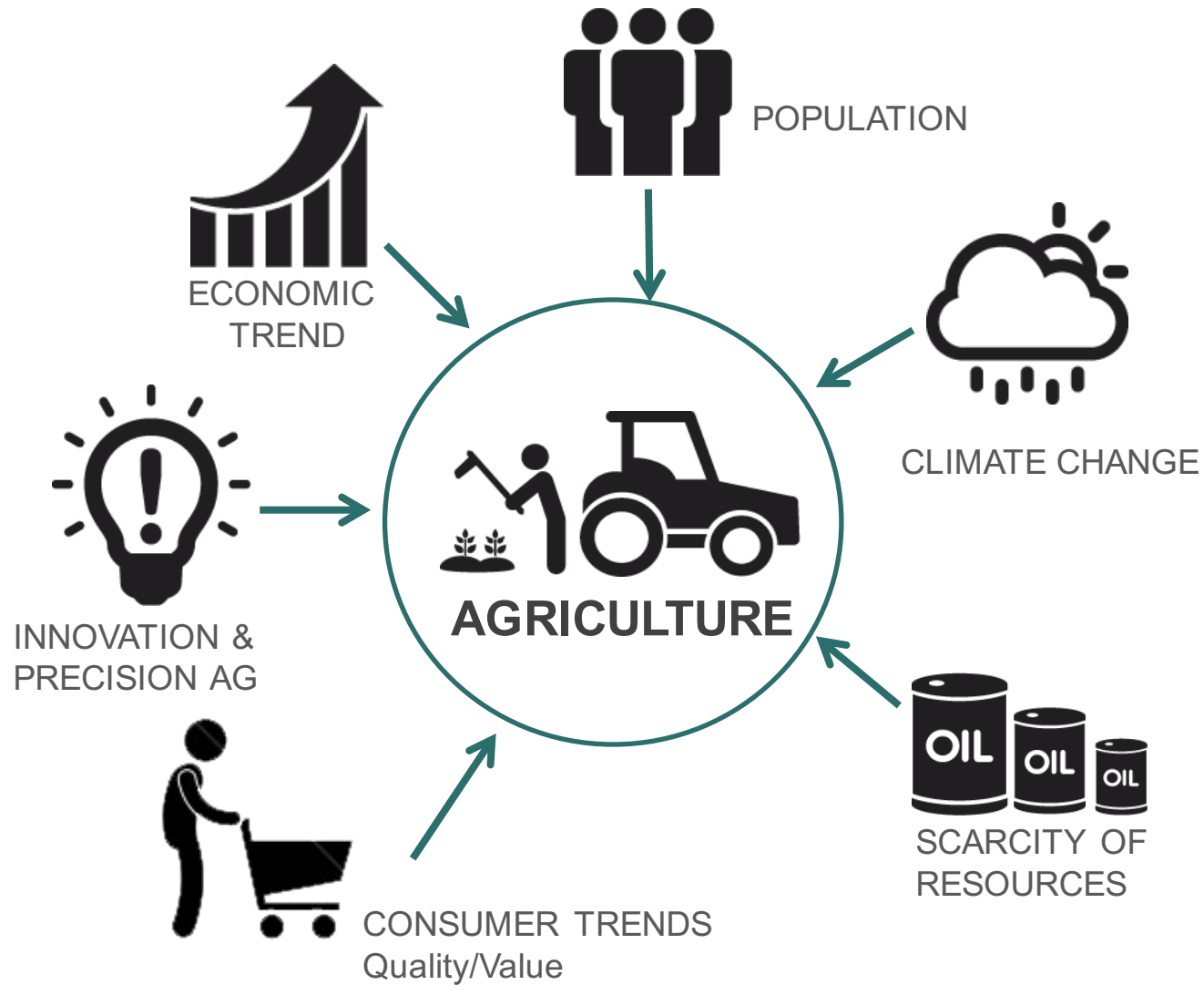
## PLATFORM FOR THE PACIFIC AREA



COMPANY OVERVIEW | Strictly Confidential

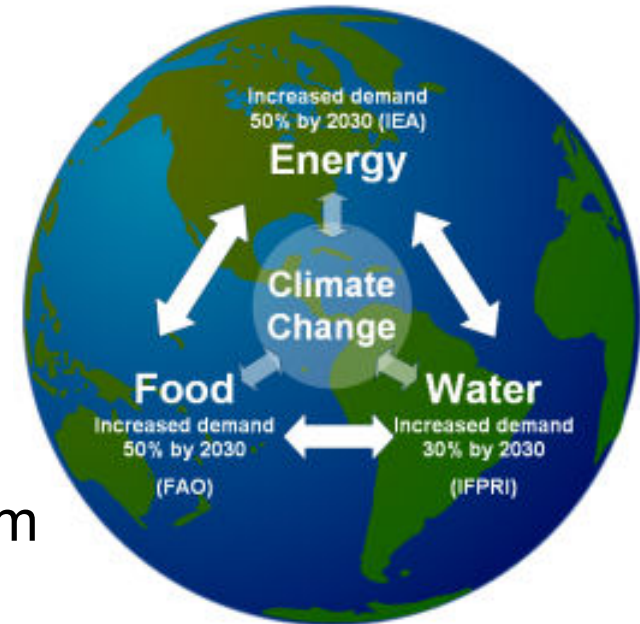
Where science serves nature

# DEMAND DRIVERS OF GLOBAL AGRICULTURE

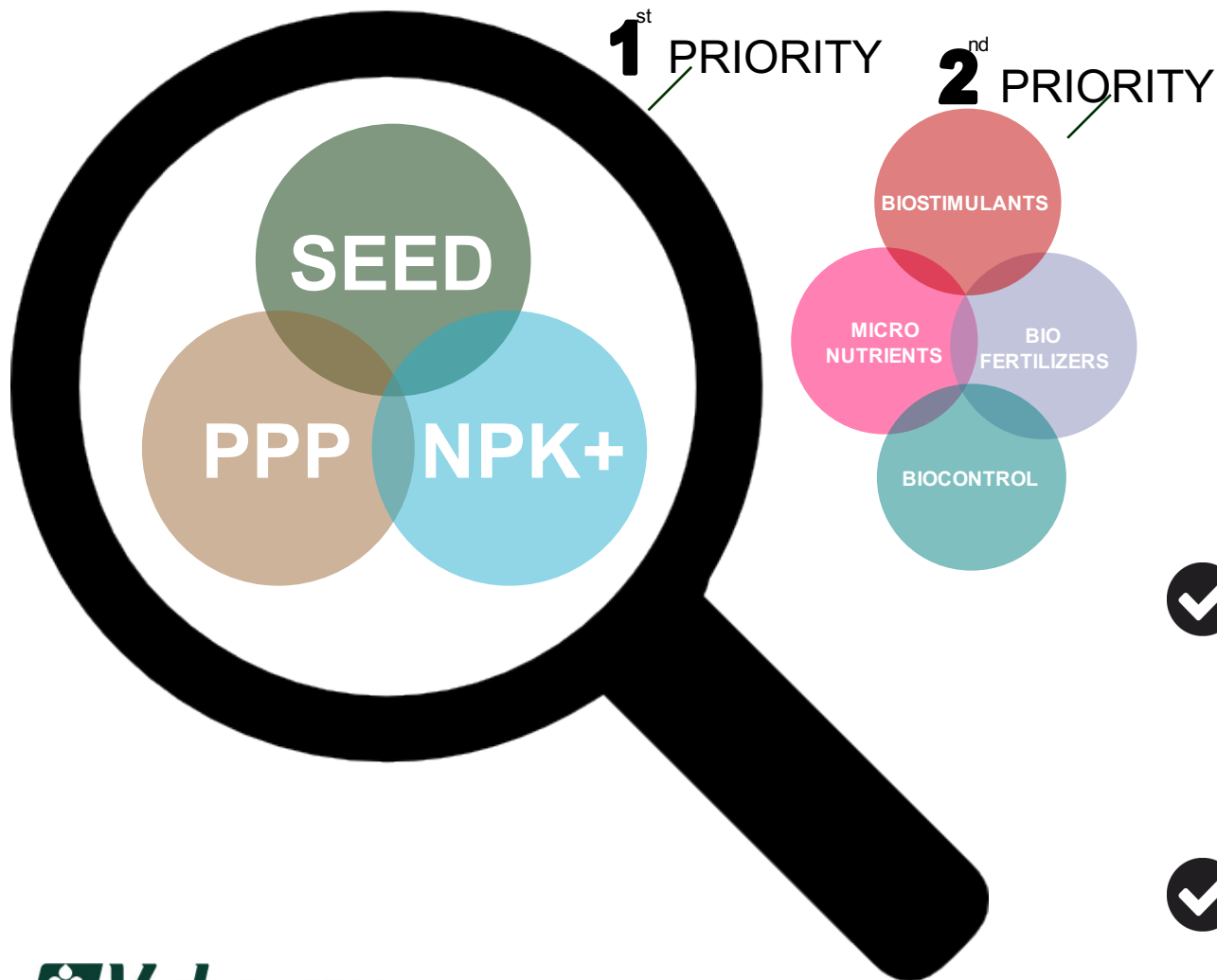


# WE MUST PRODUCE MORE WITH LESS WHEN:

- ✓ The threat of Climate Change looms
- ✓ Agricultural productivity is stagnating
- ✓ One third of arable land lost to pollution
- ✓ Water – the biggest constraint or problem
- ✓ GMO exists; but, debate persists
- ✓ “Non-seed” technologies are few, do not fit, work or are “fake”
- ✓ 30-50% of post harvest losses + 1/3 food is wasted
- ✓ Finally, sustainability of initiatives remains a big issue globally



# PAST FOCUS

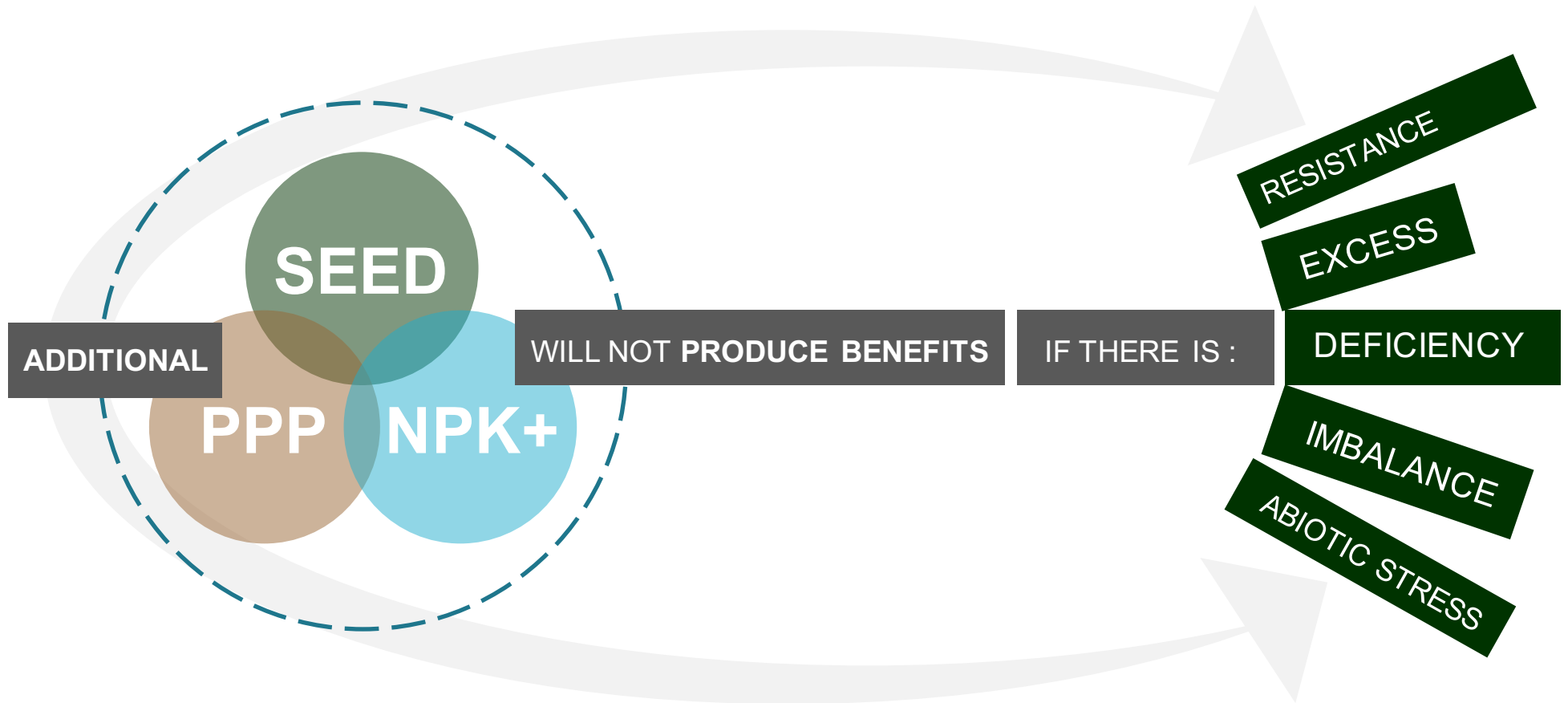


**FOCUS PRODUCT-BASED;**  
EVEN WITHIN “SOLUTIONS-  
ORIENTED” SALES ORGANIZATIONS

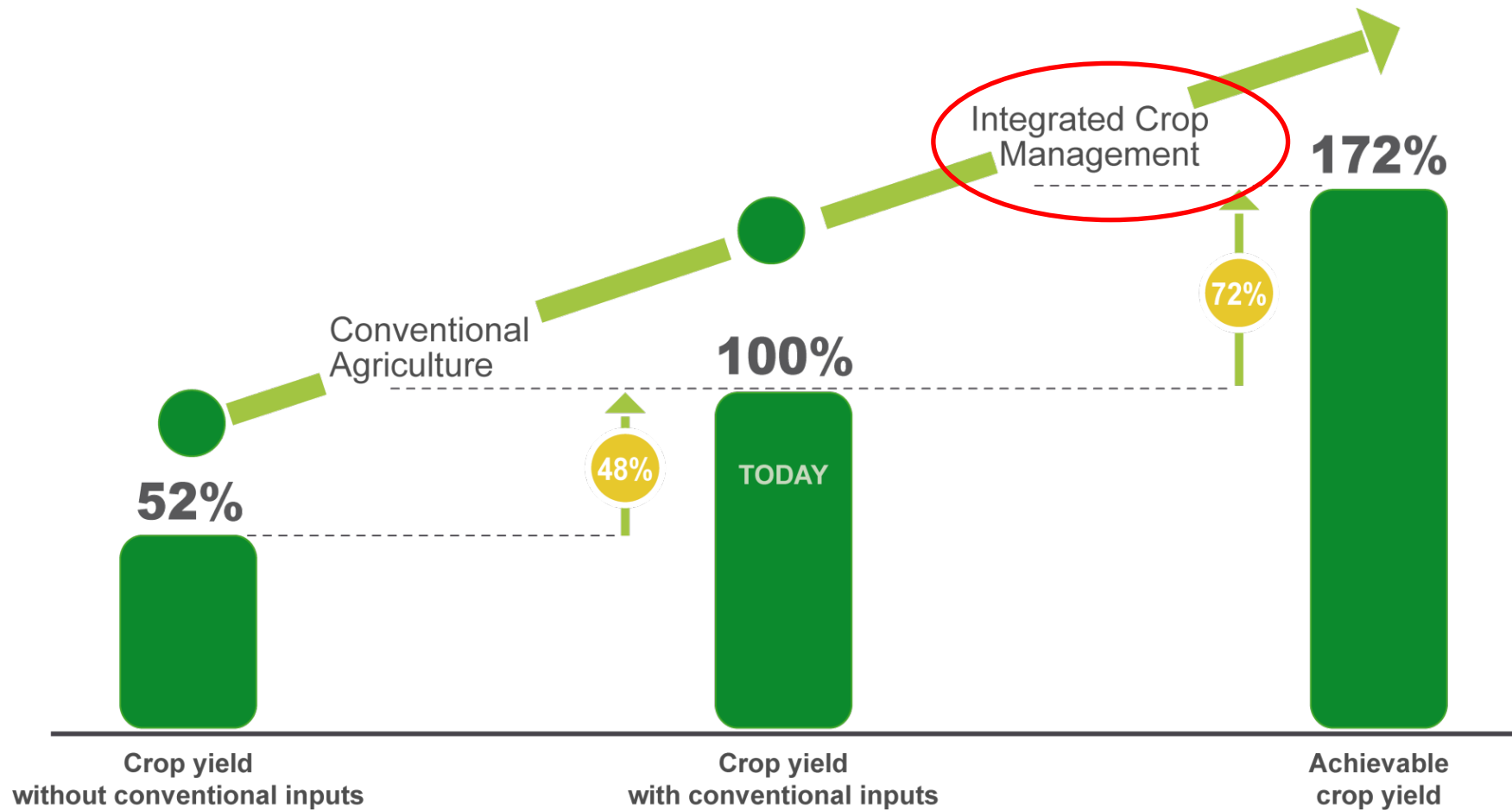


**FAST(ER) MARKET ENTRY**  
2<sup>nd</sup> PRIORITY NICE-TO-HAVE  
SEGMENTS

# CURRENT LIMITS

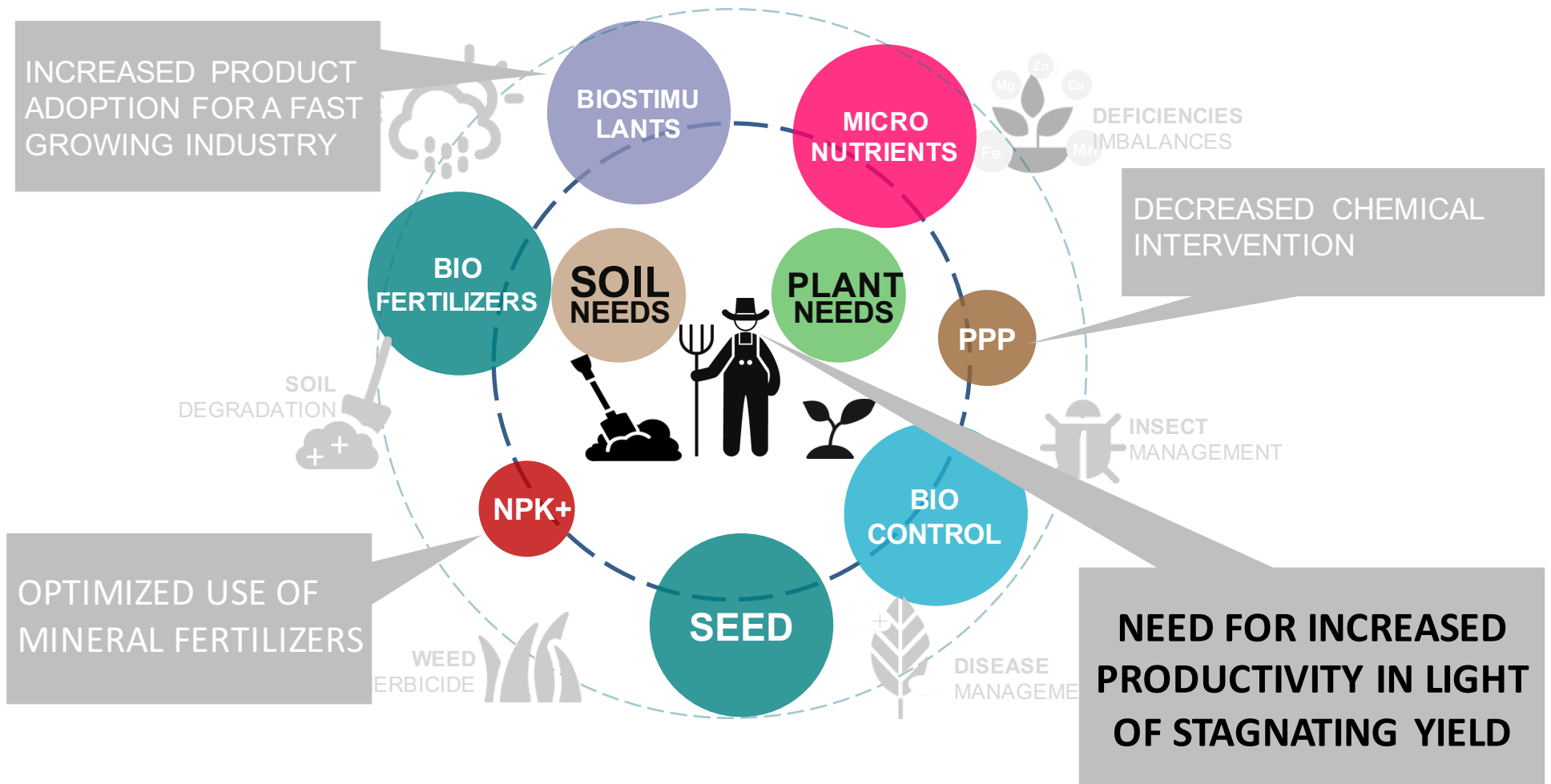


# PARADIGM SHIFT: MORE HOLISTIC APPROACH





# INTEGRATED CROP MANAGEMENT THE WAY FOWARD



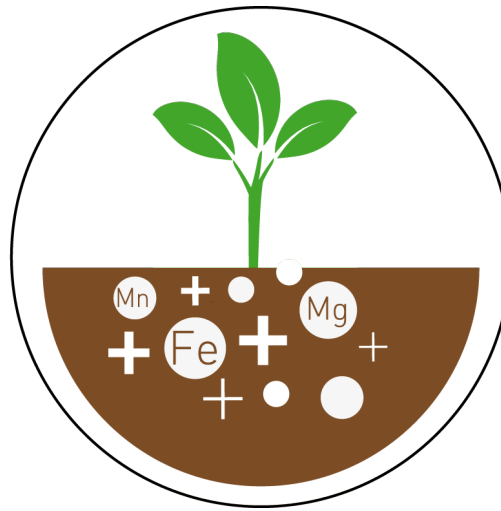
# WHY PLANT BIOSTIMULANTS\* ?

\*Plant biostimulant is a material that contains substance(s) and/or microorganism(s) whose function when applied to plants or the rhizosphere is to stimulate natural processes to benefit **nutrient uptake**, **nutrient efficiency**, tolerance to **abiotic stress**, and/or **crop quality**, independent of its nutrient content.



1

**BIOSTIMULANTS**  
Improve tolerance  
to ABIOTIC  
STRESS



2

**BIOSTIMULANTS**  
Improve NUTRIENT  
USE EFFICIENCY

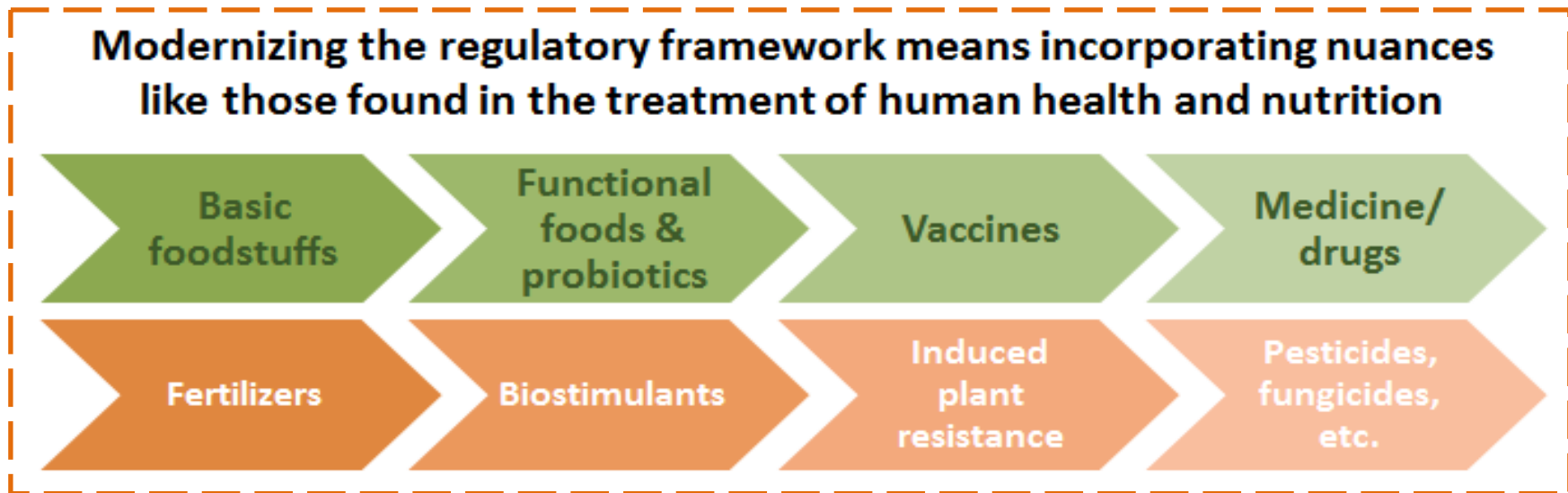


3

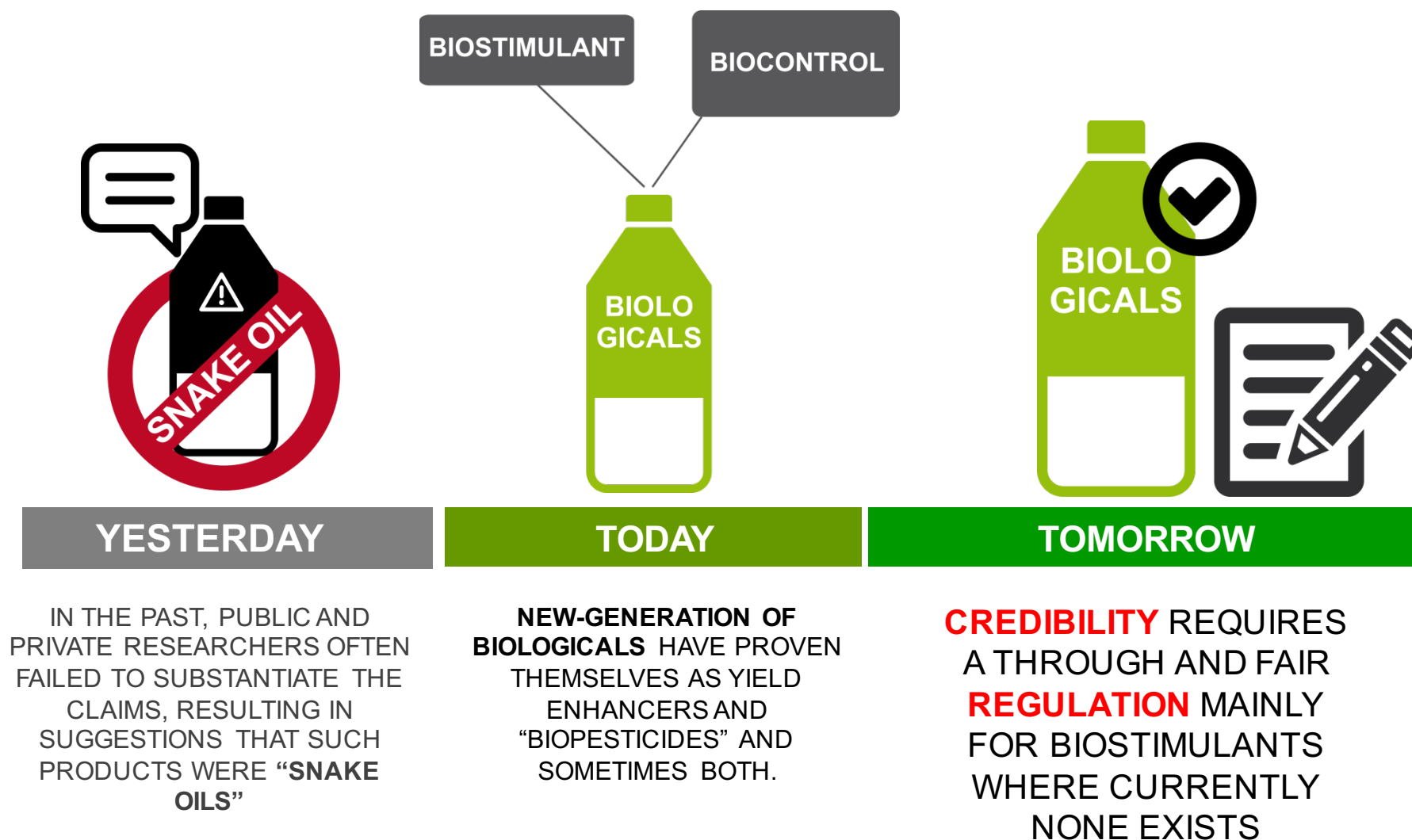
**BIOSTIMULANTS**  
Improve  
CROP QUALITY

# PLANT BIOSIMULANTS\* - novel input technologies for crop enhancement

As science progresses, we need to adapt our thinking



# WHAT PLAGUES BIOSTIMULANTS? CREDIBILITY



# Technology & Innovation is the foundation of Crebility



*Ascophyllum nodosum* miRNAs

**Feeding plants with miRNA (micro-RNA) to target and regulate expression of specific genes responsible for specific physiological processes, through gene targeting mediated by environmental RNAi mechanism**



Scuola Superiore  
Sant'Anna

REGIONE  
TOSCANA



«Method for modulating plant processes»

Exogenous use of naturally derived small RNA on plants for abiotic stress

– WIPO/PCT published February 2016

# CURRENT RISK

**FOR COMPANIES & CONSUMERS**

**NO EU REGULATION  
FOR NEW INNOVATIVE  
PRODUCT CATEGORIES**

● **NO GUARANTEES**



**PROMISES  
CONTRADICTIONS  
CONFUSION  
CLAIMS**





# REGULATORY NEEDS

FOSTER INNOVATION THROUGH A  
**REGISTRY SYSTEM**,  
BETTER ABLE TO ACCOMMODATE NEW PRODUCTS AND  
TECHNOLOGIES THAN TRADITIONAL LIST SYSTEMS

TO LET COMPANIES INVEST:  
THE REQUIRED **DOSSIER**  
SHOULD BE **MANAGEABLE**,  
EVEN FOR **SMEs**

**FOR RELATED  
INDUSTRIES**  
TO REGULATE RELATIONSHIPS

**PROPORTIONATE**

**FAIR** — **FOR CONSUMERS**  
TO PROTECT THEM AND  
GUARANTEE FOOD  
SAFETY & QUALITY

**NEW REGULATION**



# VALAGRO SOLUTIONS TO THE GLOBAL MARKET NEEDS AND GAPS



## NUTRIENT USE EFFICIENCY

- ✓ P SOLUBILIZATION
- ✓ N FIXING
- ✓ SOIL FERTILITY



## CROP QUALITY

- ✓ FRUIT SIZE
- ✓ FRUIT COLOR/BRILLIANCE



## ABIOTIC STRESS

- ✓ DROUGHT & HEAT
- ✓ CHILLING
- ✓ SALINITY
- ✓ WATER SCARCITY



## BIOCONTROL

- ✓ FUNGICIDES
- ✓ BACTERICIDES
- ✓ HERBICIDES
- ✓ INSECTICIDES
- ✓ FORMULATIONS

## “EXPLORING FIELD”

- ✓ INTELLIGENT FERTILIZER
- ✓ NANOTECHNOLOGY
- ✓ DIAGNOSTICS ON CROPS
- ✓ PRECISION AG

## → VALAGRO TODAY

CURRENT

CURRENT

TOMORROW

FUTURE



# WHAT DO WE WANT?

- **Clear Biostimulant definition and category**
  - Clear distinction between Plant Protection and Biostimulants within Fertiliser Regulations framework
- **Claim-based approach (Multi-use / dual-use) (Functional use)**
  - Cutting edge technology and scientific validation in the field
  - Specific formulation, Dosage, Application method and Conditions of use
  - Utility claim (must be an accepted, credible, and documented plant biostimulant claim)
  - Safe to use, environmental sustainability
- **Federal registration procedure**
- **Innovation and data protection**
  - **Proportionate** registration system
- Predictable and reasonable **time to market**
- Value for farmer...Create a real **market** for Plant Biostimulants

# FUTURE OUTLOOK

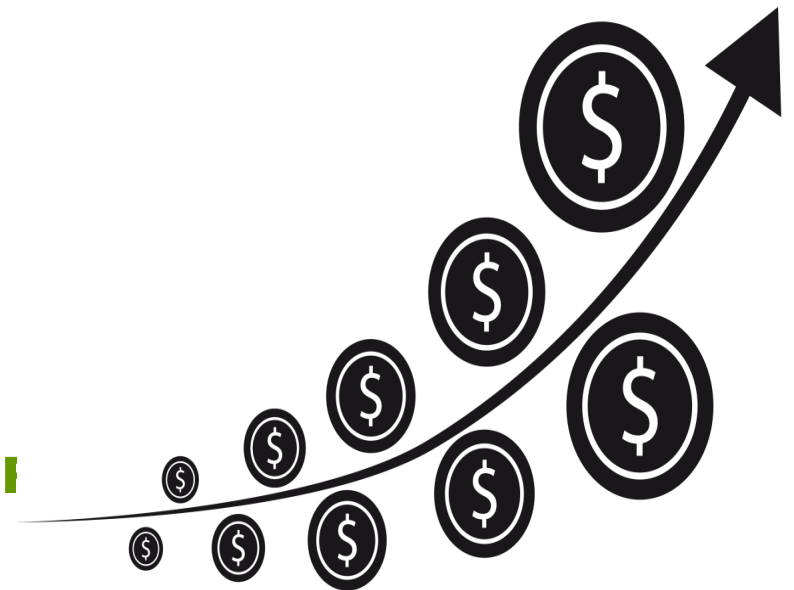
- ✓ Fewer chemistries will emerge - too expensive, too long!
- ✓ Crop improvement, including GMOs, will remain the cornerstone of agriculture for defined traits/markets
- ✓ Improved market access for biologicals, biostimulants - newer technologies, compatible solutions
- ✓ Federal **Regulation** for Biostimulants
- ✓ **Integration** of cost-effective alternatives – ICM for sustainable agriculture

*"Increased demand for food, driven by population growth and dietary change, along with the degradation of natural resources and climate change, render the challenge of achieving food security for all substantial." (John S. Ingram & John Porter, Nature Plants – November 2015)*

## **BIOLOGICALS**

- 1** BIOSTIMULANT
- 2** BIOPESTICIDES
- 3** BIOFERTILIZER

**WILL continue to GAIN MARKET SHARE**

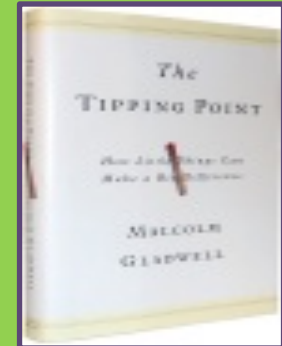


# A CALL TO ACTION - BIOSTIMULANTS

- Focus on R&D – Better science
- Better regulation – Keep your promise
- Value proposition – Return on Investment
- Grow together - Partnerships

**“Look at the World around you. With the slightest push – in the right place – it can be tipped.”**

Malcolm Gladwell  
“The Tipping Point”



# WIN THE GLOBAL CHALLENGE TOGETHER



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