Overall results*

- In September, the IFA2030 Survey was sent to IFA’s Members and to a select group of IFA’s non-member interlocutors.
- **400+ Members** submitted answers: thank you!
- More than 130 non-members also responded, bringing nuance to our industry perspective.
- Survey divided into the five STEEP categories: Society, Technology, Environment, Economy, Policy.

* As of 27 October 2017
Some Reactions to the survey

Great initiative to compile industry scenarios with all stakeholders involved!

Continual degradation of soil health, subsoil water and environment on account of indiscriminate and imbalanced use of nutrients and mining of micro-nutrients will have a serious impact on socio-economic fabric of the farming community if not corrected immediately.

Technology, Reach, Trust and Timing of product placement will define Fertiliser Business in 2030 with higher premium.

You pose some food thought-provoking questions- thank you for including me in your survey.

The industry is facing a number of challenges and more research will have to be developed to link fertilizer production to farming requirement, including soil analysis and mapping, and to adequately diversify product offering.

The fertilizer industry, as a critical component of food production systems, needs to keep that as its focus. Efficient, effective manufacturing and use of nutrients. Too much time and effort is spent chasing the tails of “Other” agendas. Doing what we do best will prove its benefit... and produce full justification. In short, it seems the industry is trying too hard to show its worth.

Great initiative, well structured. Congratulations...
Results calculation

The probabilities of the survey results have been calculated, to give a better understanding of the scenarios’ degree of likelihood and impact severity.

**EXAMPLE – Scenario: “Dietary changes for increased incomes” 279 answers**

- 25: low impact, 121: medium impact, 133: high impact → Aggregate « impact severity »: 74%
1. Societal answers

**HIGHEST IMPACT**

1. Dietary changes for increased income  
   74% impact severity, 79% likelihood

2. Deteriorating socio-political stability impacting trade and access to food  
   72% Impact, 67% likelihood

3. Increasing demands for transparency  
   69% impact, 75% likelihood

- **Low likelihood/ high impact**: Deteriorating socio-political stability impacting trade and access to food.  
  Likelihood 67%, impact 72%

- **Highest likelihood**: Dietary changes from increased incomes - 79% likelihood, impact 74%

**BY REGION**

- Dietary changes for increased income  
  Highest impact in East Asia, Latin America, North America, Europe, South Asia, EECA

- Deteriorating socio-political stability impacting trade and access to food  
  Africa, West Asia, Oceania

- Increasing demand for transparency  
  Africa

**OTHER TECHNOLOGICAL QUESTIONS**

- Dietary changes from health and environment concerns – 65% impact, 69% likelihood
2. Technological answers

HIGHEST IMPACT

1. **Advances in plant nutrition product development**: 75% impact severity, 80% likelihood
2. **Advances in precision ag and big data**: 74% impact, 81% likelihood
3. **Exponential advances in information technology & robotics**: 70% impact, 79% likelihood

Low likelihood/ high impact: N/A

Highest likelihood: **Advances in precision ag and big data** - 81% likelihood, impact 74%

BY REGION

- **Advances in plant nutrition product development** – Highest impact in EECA, South Asia, North America, Africa
- **Advances in precision ag and big data** – East Asia, Latin America, West Asia, Europe
- **Cyber-security threats** – Oceania

OTHER TECHNOLOGICAL QUESTIONS

- Advances in bio-economy: 63% impact, 67% likelihood
- Reduction in food waste: 61% impact, 63% likelihood
- Advances in logistics, storage and distribution: 67% impact, 67% likelihood
- Cyber security threats: 58% impact, 64% likelihood
3. Environmental answers

HIGHEST IMPACT

1. Water Scarcity
   87% impact severity, 85% likelihood

2. Climate change effects: increase of temperature and weather events
   80% impact, likelihood 82%

3. Deteriorating water quality
   74% impact, 76% likelihood

Low likelihood/ high impact: N/A

Highest likelihood: Water Scarcity
   85% likelihood, 87% impact

BY REGION

- Water Scarcity
  Highest impact in nearly all regions: East Asia, West Asia, South Asia, Africa, Europe, North America, EECA, Latin America

- Climate change effects: increase of temperature and weather events
  Oceania

OTHER TECHNOLOGICAL QUESTIONS

- Climate change effects: focusing on lowering GHGs:
  impact 69%, likelihood 72%

- Deteriorating air quality: impact 62%, likelihood 67%

- Worsening soil conditions: impact 74%, likelihood 72%

- Increasing nutrient recycling: impact 64%, likelihood 68%

- Rise in renewable energy: impact 66%, likelihood 74%
4. Economics answers

**HIGHEST IMPACT**

- **1. Feedstock supply issues**
  76% impact severity, 71% likelihood
- **2. Decline in farmers’ purchasing power**
  75% impact, 62% likelihood
- **3. Drastic changes in fertilizer subsidies**
  73% impact, 64% likelihood

**Low likelihood/ high impact**:
- Decline in farmers’ purchasing power: 62% likelihood, 75% impact;
- Rising trade restrictions: 62% likelihood, 70% impact

**Highest likelihood**:
- Rising industry consolidation: 74%, impact 66%

**BY REGION**

- **Feedstock supply issues highest impact**
  South Asia, Europe, Africa
- **Drastic changes in fertilizer subsidies**
  Highest impact in: North America, Latin America
- **Decline in farmers’ purchasing power**
  East Asia, West Asia, Oceania
- **Rising trade restrictions**
  EECA

**OTHER TECHNOLOGICAL QUESTIONS**

- Insufficient infrastructure enhancements & maintenance:
  Impact 63%, likelihood 58%
- Rising trade restrictions: impact 70%, likelihood 62%
- Rising industry consolidation: impact 65%, likelihood 74%
5. Policy answers

**Highest Impact**

1. Stricter government allocation of resources: 75% impact severity, 68% likelihood
2. Rising environmental regulations and incentives: 74% impact, 79% likelihood
3. Tightening regulatory frameworks for the industry: 73% impact, 78% likelihood

**Low likelihood/ high impact:**
- Stricter government allocation of resources – 68% likelihood, impact 75%
- Rising environmental regulations and incentives 79%, impact 74%

**By Region**

- **Strictly government allocation of resources:** highest impact in Africa, East Asia, Latin America, South Asia
- **Rising environmental regulations:** North America, West Asia, Europe
- **Tightening regulatory frameworks for the industry:** EECA, Oceania

**Other Technological Questions**

- Adoption of carbon taxes/ emissions trading schemes: Impact 65%, likelihood 66%
- Drastic changes to biofuels mandates: impact 63%, likelihood 57%
- Rising renewable energy mandates: impact 64%, likelihood 69%
Young Professionals
38 young professionals took part in the survey
Predominantly from Africa (34%) and Western and Central Europe (21%)

HIGHEST IMPACT
1. POLICY - Tightening regulatory frameworks for the industry
   88% impact, 79% likelihood
2. TECHNOLOGY - Advances in plant nutrition product development
   83% impact, 86% likelihood
3. ENVIRONMENT - Water Scarcity
   82% impact, 83% likelihood

Low likelihood/ high impact: Stricter government allocation of resources, 67% likelihood 77% impact
Highest likelihood: Advances in plant nutrition product development 86% likelihood, 83% impact

LOWEST IMPACT
1. ECONOMIC - Insufficient infrastructure enhancements & maintenance
   59% impact, 53% likelihood
2. POLICY - Rising mandates in renewable energy
   63% impact, 60% likelihood
3. TECHNOLOGY - Cyber security threats
   65% impact, 65% likelihood
Outside the industry

135 non-Members took part in the survey
The majority were from business (32%), research (27%) and government (14%)

HIGHEST IMPACT

1. ENVIRONMENT - Water scarcity
   87% impact, 87% likelihood

2. ENVIRONMENT - Climate change effects: increase of temperatures and weather events:
   81% impact, 85% likelihood

3. TECHNOLOGY - Advances in precision ag and big data:
   81% impact, 84% likelihood

Low likelihood/ high impact:
- Drastic changes in fertilizer subsidies: likelihood 63%, impact 76%
- Stricter allocations of government resources: likelihood 66%, impact 73%

Highest likelihood: Water Scarcity 87% likelihood, 87% impact

BY SECTOR

- Business: Water scarcity, Advances in plant nutrition product development
- Farmers’ Orgs: Decline in farmers’ purchasing power
- Government: Water scarcity
- Intergovernmental Orgs: Exponential advances in information technology & robotics
- Media: Advances in precision in ag and big data, Drastic changes in fertilizer subsidies
- NGOs: Advances in precision ag and big data, water scarcity, Rising industry consolidation
- Research: Water scarcity
- Others: Water scarcity, worsening soil conditions
Top 3 Across STEEP

MEMBERS

1. ENVIRONMENT: Water Scarcity
   Impact 87%, Likelihood 85%

2. ENVIRONMENT: Climate change effects: increase of temperatures and weather events
   Impact 80%, Likelihood 82%

3. ECONOMIC: Feedstock supply issues
   Impact 76%, Likelihood 71%

NON-MEMBERS

1. ENVIRONMENT: Water Scarcity
   Impact 87%, Likelihood 87%

2. ENVIRONMENT: Climate change effects: increase of temperatures and weather events
   Impact 81%, Likelihood 85%

3. TECHNOLOGY: Advances in precision ag and big data
   Impact 81%, Likelihood 84%
Concluding remarks

Water scarcity stands out the issue with the highest impact for both members and non-members.

- **Cyber-security threats**: least impactful issue for members and non-members (slightly higher for Young Pros)
- **Reduction of food waste**: also a low impact scenario across all survey answers
- **Low likelihood/high impact**: for Members mostly in the Economic sphere: Decline in farmers’ purchasing power; Drastic changes in fertilizer subsidies; Insufficient infrastructure enhancement & maintenance, Rising trade restrictions
- **High likelihood/ lower impact**: for Members - Advances in bio-economy, rise in renewable energy, rising renewable energy mandates, rising industry consolidation