

GLOBAL SUSTAINABILITY REPORT 2019



CHAIRMAN'S OPENING NOTE TO THE IFA SUSTAINABILITY REPORT

I am very pleased to share with you IFA's first Sustainability Report. It sets forth our vision of, and our commitment to, sustainability in every dimension of our work.

Sustainability is—and must be—at the heart of our decisions. We have come full circle from the early days of our industry, when the production of fertilizers played a key role in global population growth by making it possible to grow much more food than in the past and much more reliably.

Now we face the challenge of that success—how to feed a global population that will exceed 9 billion by 2050, while remaining prudent stewards of a planet that is feeling the pressures of that growing population.

This report lays out all the ways in which our industry has sought to imbed sustainability in everything we do in recent years. It is by no means a completed journey. There will always be more that we can do. If anything, this first IFA Sustainability Report is the sign of a public commitment that we will continually strive to improve, and publicly share that journey with all our stakeholders and the broader global community.

We cannot do this alone. We are just one part of a broader global agricultural and food system that is being reshaped by the twin imperatives of sustainability and feeding a growing population. We welcome the challenge, and the honest, science-based, multi-stakeholder dialogue that will be vital to meet this.

Thank you for sharing this journey with us.



Mostafa Terrab,
IFA Chairman

LETTER FROM THE IFA DIRECTOR GENERAL

Sustainability is at the core of both IFA's vision that: "productive and sustainable agricultural systems contribute to a world free of hunger and malnutrition", and our mission, which is to "promote the efficient and responsible production, distribution and use of plant nutrients".

With mineral fertilizers accounting for approximately half of the food on our plates, and also playing a crucial role in nutrition security, poverty alleviation and carbon sequestration, there are also important ways in which increased efficiencies will continue to reduce the industry's environmental impact—both on the production and application side.

This is our first global sustainability report, and as such explains the role of plant nutrition in meeting nine of the 17 Sustainable Development Goals, and giving an overview of the efforts of the association and of our members in the realm of industry stewardship, which encompasses both product stewardship (important for the production and handling of fertilizer products) and nutrient stewardship (with regard to fertilizer application).

This report is based on existing IFA initiatives and industry benchmarks and is intended to allow us to measure progress over time. Given our longstanding commitment to excellence in the domain of Safety, Health and the Environment and our promotion of site- and crop-specific plant nutrition based on the 4Rs (using the right source of nutrients at the right rate, time and place) in order to increase plant nutrient uptake and reduce nutrient losses to the environment, we look forward to expanding the scope of our reporting in future editions.



Charlotte Hebebrand,
IFA Director General

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THE INTERNATIONAL FERTILIZER ASSOCIATION

IFA'S VISION

Productive and sustainable agriculture systems contribute to a world free of hunger and malnutrition.

IFA'S MISSION

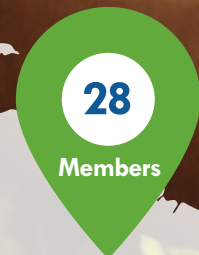
IFA promotes the efficient and responsible production, distribution and use of plant nutrients.

IFA'S APPROACH

IFA provides a framework for exchanges and collaboration among its members and a structure for agreeing common positions and joint actions.



North America



Latin America



KEY FIGURES AT A GLANCE:

476

Members

45%

In Developing Economies

67

Countries

TOTAL DIRECT EMPLOYMENT

OF THE GLOBAL FERTILIZER INDUSTRY

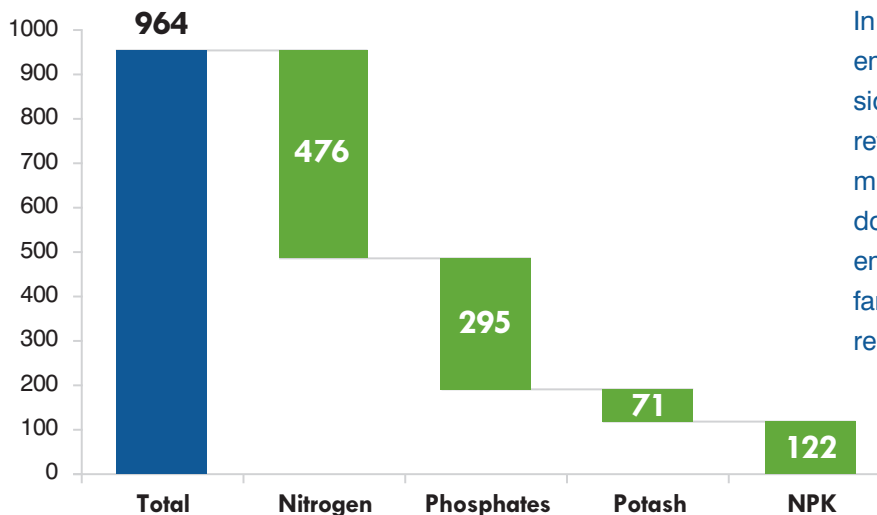
CLOSE TO **ONE MILLION EMPLOYEES** WORLDWIDE

THE **NITROGEN** SECTOR ACCOUNTS FOR ROUGHLY **HALF OF GLOBAL EMPLOYMENT** IN THE FERTILIZER SECTOR

TWO THIRDS OF EMPLOYMENT IN EAST ASIA

EMPLOYMENT BY NUTRIENT, 2018

'000 Persons



In addition, indirect employment from the supply side (i.e. transportation and retail) is estimated at 2.2 million persons. This figure does not include indirect employment generated at farm level, which would result in a higher number.

Source: Assessment by Argus for IFA, 2019

TOTAL CAPITAL INVESTMENT

TOTAL CAPITAL EXPENDITURE, 2019-2023

\$bn

Region	Total Investment
Africa	20.0
Central Europe	0.4
Eastern Europe & Central Asia	13.6
East Asia	3.5
Latin America	3.4
North America	0.6
Oceania	0.2
South Asia	7.3
West Asia	3.0
West Europe	4.1
Total Investment	56.1

Source: Assessment by Argus for IFA, 2019

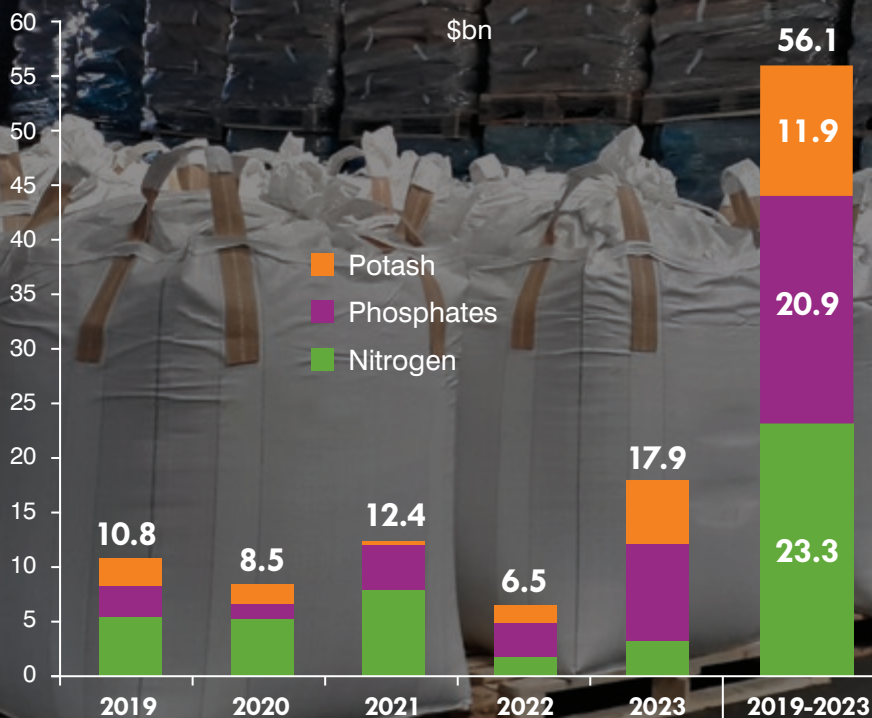
\$56.1B

An estimated **USD \$56.1 billion** will be **invested in new capacity and revamps between 2019 and 2023**

BULK OF NEW CAPEX EXPECTED IN AFRICA AND EASTERN EUROPE & CENTRAL ASIA

IFA member companies are also broadly investing in supporting the communities in which they operate, for instance through direct investments in local organizations or through the creation of foundations and charities. Other examples include the training of young professionals to help them join the workforce, raising awareness of environmental issues in local schools, providing loans to small businesses and supporting farmer cooperatives.

TOTAL CAPITAL INVESTMENT GLOBAL FERTILIZER INDUSTRY



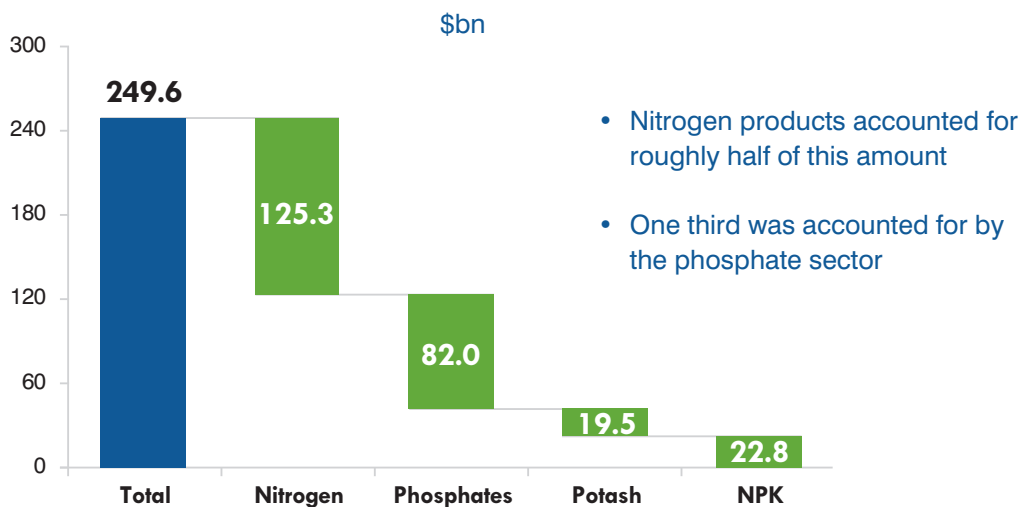
Source: Assessment by Argus for IFA, 2019

This is an estimate of total investment likely in the fertilizer industry in the next 5 years. This is defined as money spent constructing new fixed assets or adding to the value of an existing fixed asset through revamps. New capacity and debottlenecking activities are included, and maintenance capital is excluded.

GLOBAL PRODUCTION & SALES REVENUES

The combined value of global fertilizer production revenue, which includes final product sales and fertilizer raw materials consumed internally, reached USD \$250 billion in 2018.

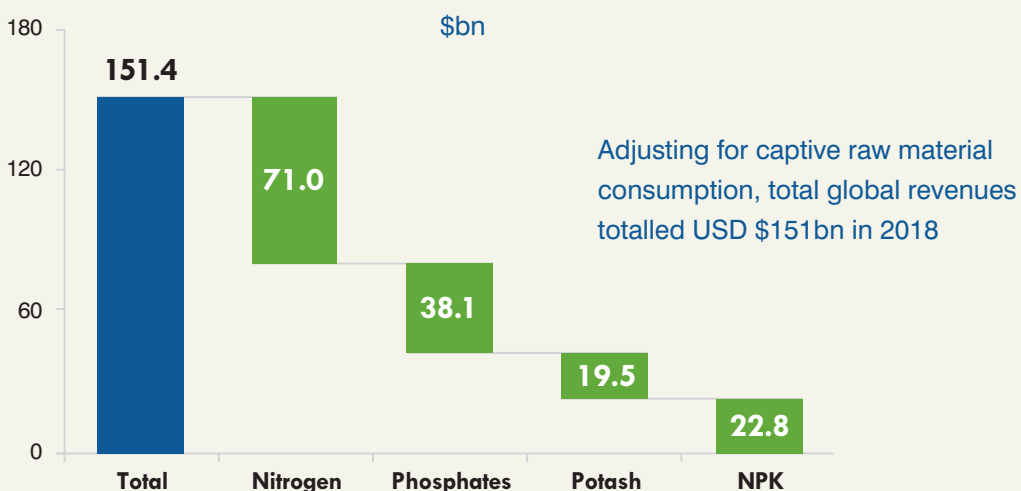
PRODUCTION REVENUES BY NUTRIENT



Source: Assessment by Argus for IFA, 2019

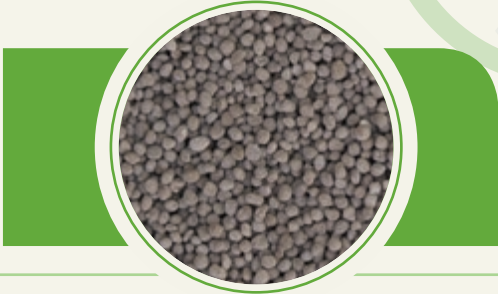
Price values are calculated at or close to the point of production rather than at the point of consumption. Unit prices are calculated from values reported by companies, industry publications and trade data.

SALES REVENUES BY NUTRIENT



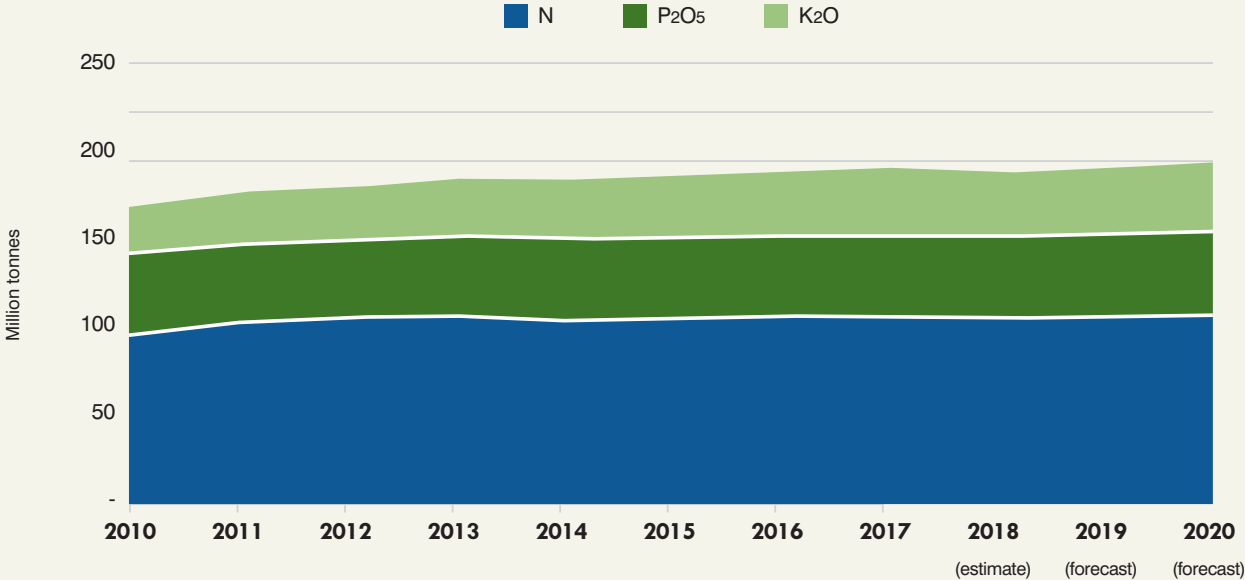
Source: Assessment by Argus for IFA, 2019

FERTILIZER CONSUMPTION



Global fertilizer consumption of primary nutrients (nitrogen, phosphate and potash) applied in agriculture reached 193 Mt nutrients in 2017. Nitrogen accounted for 56% of the world total fertilizer demand, followed by 24% phosphates and 20% potash.

GLOBAL FERTILIZER CONSUMPTION

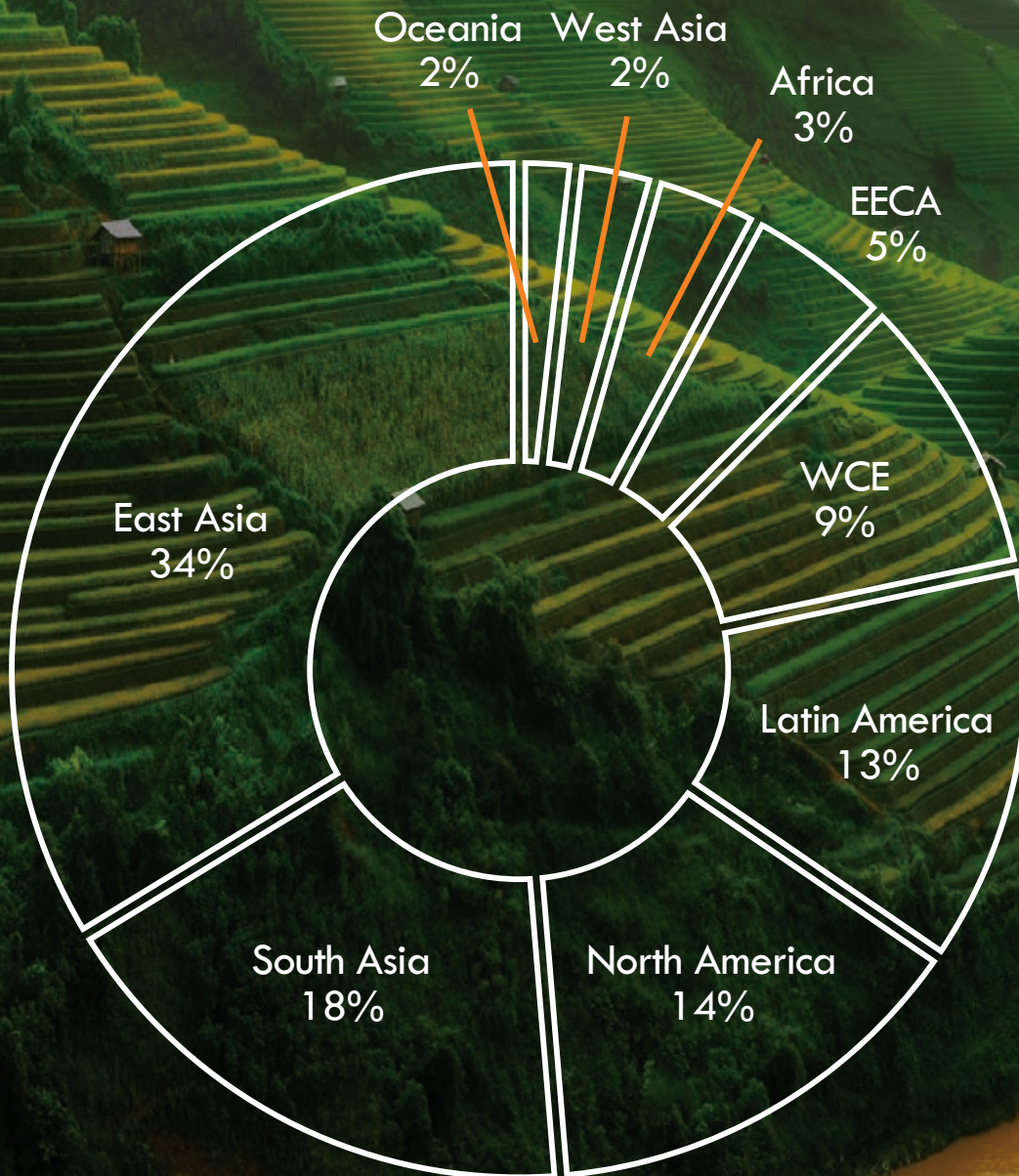


Source: IFASTAT <https://www.ifastat.org/>



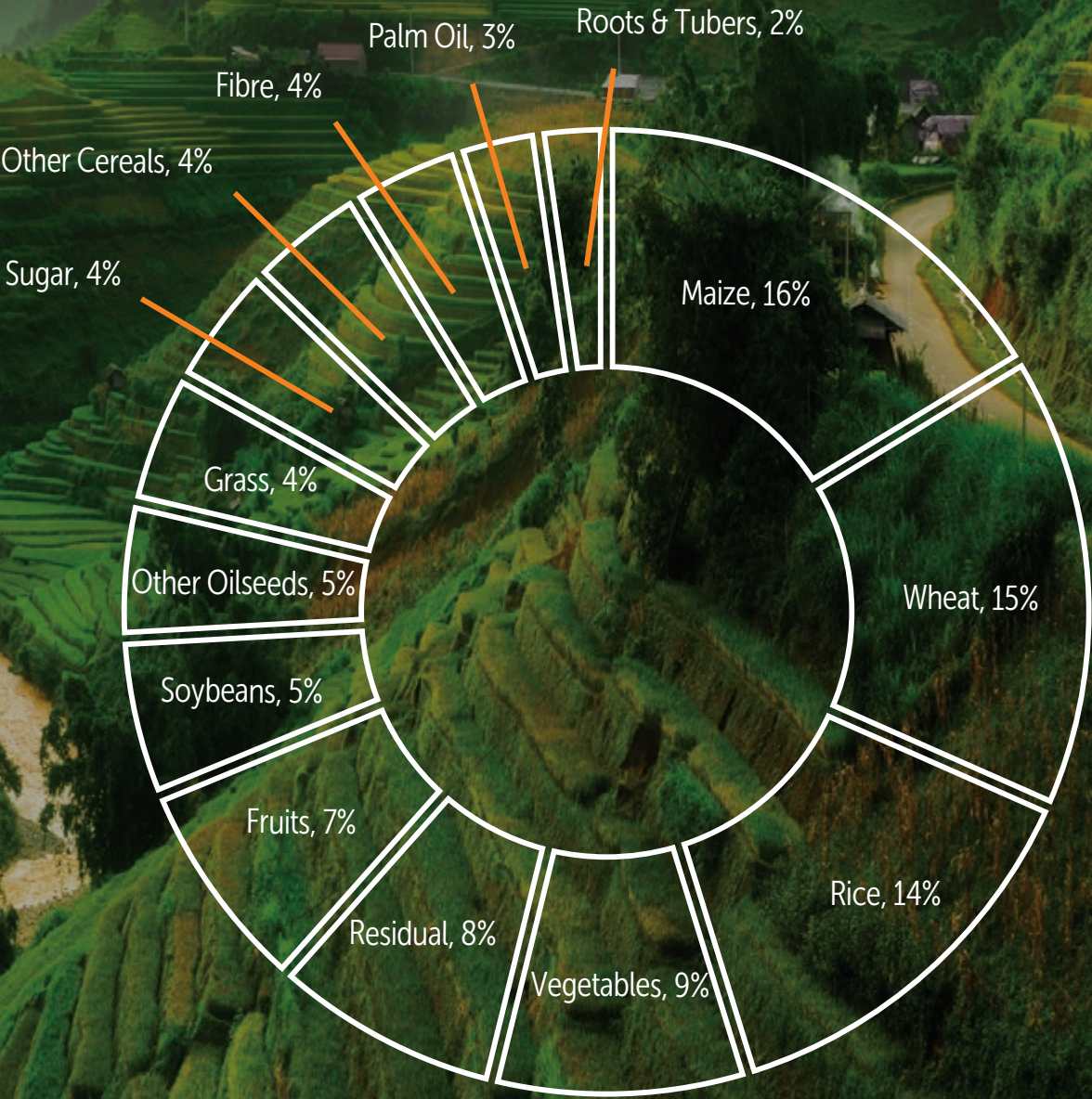
HALF OF THE GLOBAL FERTILIZER DEMAND IS REPRESENTED BY ASIA (EAST ASIA AND SOUTH ASIA ACCOUNTED FOR 34% AND 18% RESPECTIVELY IN 2017).

FERTILIZER CONSUMPTION FOR AGRICULTURE BY REGION (2017)



Source: IFA

FERTILIZER USE BY CROP IN THE WORLD (2014)



Source: IFA

WHAT ARE FERTILIZERS?



Fertilizers are any solid, liquid or gaseous substances containing one or more plant nutrients.

They are either applied to the soil, directly on the plant or added to aqueous solutions, in order to maintain soil fertility, improve crop development, yield and/or crop quality.

The purpose of fertilizers, whether mineral or organic, is to supplement the natural supply of soil nutrients, build up soil fertility in order to satisfy the demand of crops, and to compensate for the nutrients taken by harvested products or lost by unavoidable leakages to the environment, in order to maintain good soil conditions for cropping. Some fertilizer products can also be applied to plant leaves in small quantities.

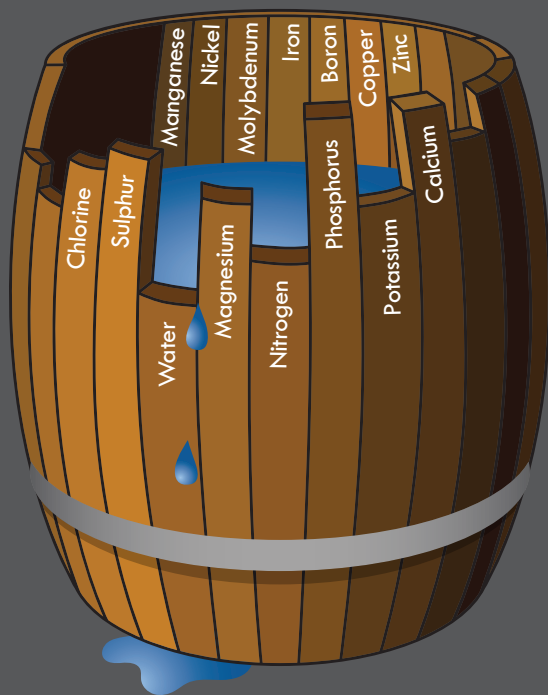




As a pre-condition for growth, health and the production of nutritious food, plants require essential nutrients—both macro and micronutrients—in sufficient quantities.

Seventeen elements have been shown to be essential for plants: carbon (C), hydrogen (H), oxygen (O), nitrogen (N), phosphorus (P), potassium (K), sulphur (S), magnesium (Mg), calcium (Ca), iron (Fe), manganese (Mn), zinc (Zn), copper (Cu), boron (B), molybdenum (Mo), chlorine (Cl), nickel (Ni). Furthermore, additional elements may be essential to a few plant species, e.g. sodium (Na) and cobalt (Co).

LIEBIG LAW OF MINIMUM



Carbon, hydrogen (H) and oxygen (O) are obtained from the atmosphere and water and are not considered mineral elements. The remaining essential elements can be divided into three groups: primary macronutrients (N, P and K), secondary macronutrients (S, Mg and Ca) and micronutrients (Fe, Mn, Zn, Cu, B, Mo, Cl and Ni) based on average concentrations in plants. If a single essential plant nutrient is available in insufficient quantity, it affects plant growth and thus the yield.

PLANT NUTRIENTS PLAY AN ACTIVE ROLE IN ADVANCING THE UNITED NATIONS' 2030 AGENDA

Inspired by the UN's ambitious 2030 Agenda for Sustainable Development, fertilizer producers are aligning key aspects of their corporate development

with the Sustainable Development Goals, leading to new partnerships, spurring innovation and transforming challenges into new opportunities.

AN URGENT CALL TO ACTION

The 17 United Nations' Sustainable Development Goals (SDGs) are the culmination of decades of international cooperation between countries and various stakeholders, representing a global consensus on mankind's most pressing issues, as more than 180 countries have committed to tackling these concerns in an urgent manner.

The SDGs form the core of the United Nations' 2030 sustainability agenda, and provide critical guidance to businesses, governments and society as a whole to develop high-impact actions in the coming years and decades. Each Global Goal provides specific targets to help monitor progress towards achieving the overarching goals of preserving humanity and protecting the earth's resources.



PLANT NUTRIENTS CAN HELP TO LIFT FARMERS OUT OF POVERTY

No farm in the world is too small to use fertilizers, and they can significantly increase farmers' incomes.

Adequate and affordable access to fertilizers allows subsistence farmers to produce a surplus that they can sell, using the income to not only buy additional food for their families, but also send their children to school and pay for health care.

The impact of fertilizers is immediate: within a single cropping season, and with the adequate use of other crop inputs (e.g. water), farm productivity can be doubled or even tripled in regions with low yields such as sub-Saharan Africa. For every kilogram of nutrient applied, farmers can obtain from five to 30 additional kilograms of product.

FERTILIZERS CONTRIBUTE TO BETTER NUTRITION FOR ALL THROUGH MICRONUTRIENTS

Currently, more than 2 billion people, mostly in developing countries, suffer from micronutrient malnutrition, sometimes referred to as “hidden hunger”. Micronutrient-enriched fertilization is considered one of the most promising ways to fight malnutrition, and to alleviate nutrient deficiencies worldwide, especially for zinc, selenium and iodine.



2 ZERO HUNGER

HALF THE FOOD WE EAT TODAY IS PRODUCED THANKS TO MINERAL FERTILIZERS *ref: Erismann et al. 2008*

Fertilizers provide crops with the essential nutrients for their growth and health, helping to increase crop yields and lift overall food production.

Fertilizers are used in every corner of the globe to support sustainable agricultural production and food security. When applied using Best Management Practices, mineral fertilizers can fulfill their primary function of providing plants with consistent and easily available nutrients more efficiently, while minimizing the negative effects of over-, under- or misuse.

The “4R” principles of nutrient management refer to applying the **right source** of nutrients, at the **right rate** needed to optimize yields to a specific crop; at the **right time** they are needed by the crop; and at the **right place** in the field; and are applicable to each country and region worldwide. The 4R model has allowed farmers in various regions of the world to sustainably increase their yields, incomes and livelihoods.



5 GENDER EQUALITY

FERTILIZERS CAN INCREASE GENDER EQUALITY IN AGRICULTURE

Fertilizers have an important role to play in terms of bringing female farmers to the same level as their male counterparts. The FAO has recorded women’s use of fertilizer as being significantly lower than men’s, mainly due to lack of access to this vital input. This is considered to be a major factor in farms run by women having approximately 20-30% lower yields than men.

GENDER AT IFA:

IFA has formed a **Gender Diversity Taskforce** dedicated to exploring how diversity could be a powerful transformative tool for the agricultural sector, the agribusiness industry and the fertilizer industry in particular.

Building on already existing gender-related initiatives of selected IFA member companies, the Taskforce is undertaking several activities that serve the objectives of:

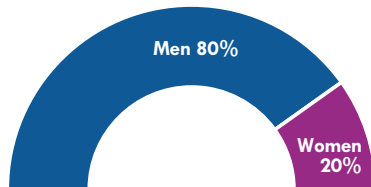
- Raising awareness of achievements where women in the industry have shown outstanding leadership and vision
- Increasing the visibility of particularly successful gender diversity initiatives and programs in the industry (and possibly also in other business or industry settings) to facilitate exchange and mutual learning
- Including men and their contribution to promoting gender diversity

The Gender Diversity Taskforce will also dedicate efforts to alert on the **gender gap in agriculture and on the farm** by communicating on the critical role of women for the sustainable food system.

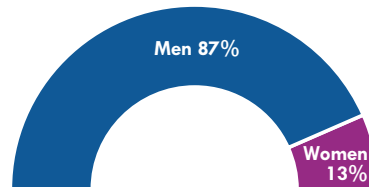


WOMEN'S REPRESENTATION IN THE STRATEGIC ADVISORY TEAMS (SATs) OF IFA COMMITTEES IN 2019-2020

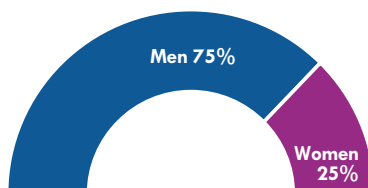
IFA SAT: **Communication & Public Affairs**



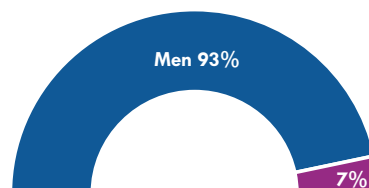
IFA SAT: **Technical & SHE**



IFA SAT: **Agriculture**



IFA SAT: **PIT Market Intelligence**



4R SOLUTIONS PROJECT FOR WOMEN

Developed by Fertilizer Canada, in partnership with Co-operative Development Foundation of Canada (CDF Canada), the African Plant Nutrition Institute (APNI) and with the support of three IFA members (Nutrien, OCP and IRM), **the 4R Solutions Project promotes the empowerment of women farmers, with special emphasis on improving access to financial resources and agriculture technologies.** The project aims to improve the socio-economic well-being and resilience of 80,000 smallholder farmers, particularly women, in Ethiopia, Ghana and Senegal.



NUTRIENT LOSSES TO WATER CAN BE SIGNIFICANTLY REDUCED WITH FERTILIZER BEST MANAGEMENT PRACTICES

The knowledge of agricultural nutrient cycles and their loss pathways is essential to reducing losses to water, which may occur through soil erosion and runoff of particulate matter. Nitrogen (N) and phosphorus (P) cycles are complex biological cycles and, by definition “leaky” systems. N and P losses can be minimized through the application of fertilizer, crop and soil best management practices, including the “4R” principles.

RESPONSIBLE WATER MANAGEMENT AT FERTILIZER PRODUCTION SITES

The sustainable management of water is a priority at fertilizer production facilities globally. Manufacturers closely monitor and adjust their water consumption to ensure that losses are minimized, while recycling whenever possible. All over the world, fertilizer manufacturers operate plants that can recycle up to 100% of their water consumption, saving millions of cubic meters every year.



THE MANUFACTURE OF FERTILIZERS IS MOVING TOWARDS A GREENER FUTURE

IFA members around the world, along with academic institutions and R&D centers, are pioneering new technologies to produce ammonia—the main raw material for the production of nitrogen fertilizers—entirely from sustainable, carbon-neutral inputs such as biomass or renewable electricity. With a number of pilot projects currently in operation, the transition from fossil inputs to electric inputs has already started.

Several fertilizer companies have achieved an industrial symbiosis by using hydrogen by-product left over from other industrial processes to produce “carbon-free” ammonia. Existing ammonia plants are also incrementally de-carbonizing their ammonia production by introducing a hydrogen pipeline connection during revamps, thereby reducing their reliance on fossil fuels.

Several partnerships with energy and technology providers are also making possible the development of pilot plants to produce hydrogen and ammonia from renewable electricity sources all over the world.



TOWARDS A CIRCULAR ECONOMY MODEL

Phosphate producers are actively pursuing new methods of recycling phosphorus in their production processes, which would enable the sector to become less dependent on mined phosphate rock—while reducing their environmental footprint. Fertilizer-grade phosphorous can now be recovered by recycling various alternative sources, such as sewage sludge ashes, meat and bone meal ash and struvite; however the costs of such extraction methods remain economically non-competitive.

PHOSPHOGYPSUM, FROM WASTE TO CO-PRODUCT

The global phosphate industry is increasingly re-using phosphogypsum (PG), a product that was previously considered to be “waste” and stacked away on land or dispersed. Recent regulatory changes in many countries have removed the main obstacles to the beneficial applications of PG, which has led to the recycling of millions of tonnes per year.

Some of PG’s beneficial uses:

- Soil amendment: it can significantly increase the yields of a wide range of crops by improving acidic subsoils.
- Land reclamation: it can improve the condition of saline and sodic soils.
- A sulphur fertilizer: PG contains sulphur, which is an essential plant nutrient.
- Roads and building materials: PG can be used in cement for road construction, as well as in cement and plasterboard for building needs.



FERTILIZERS CONTRIBUTE TO CLIMATE CHANGE MITIGATION THROUGH PREVENTING DEFORESTATION AND INCREASING SOIL CARBON SEQUESTRATION

As fertilizers increase productivity on arable land, they can also forestall deforestation. They help maintain the integrity of the globe’s forests, and other ecosystems such as savannas and wetlands, which are important carbon sinks. Optimized fertilizer management helps to build up soil organic matter (SOM) since it increases biomass production, allowing the increased non-harvested carbon rich biomass (e.g. roots and stems) to return to the ground.

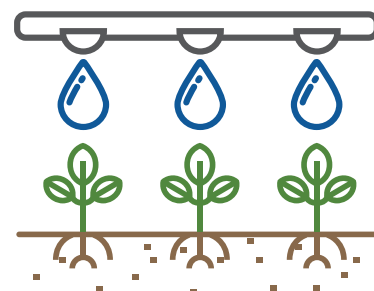
Integrated Plant Nutrient Management (IPNM), which entails using on-farm organic sources of nutrients and supplementing them with manufactured fertilizers to achieve the farmer's yield goal, leads to higher soil organic matter, which can result in higher carbon sequestration. Soils represent 89% of agriculture's mitigation potential, as they are the largest terrestrial carbon pool, and they can store up to 50-300 tonnes of carbon per hectare (IPCC, 2007).

FERTILIZERS CAN HELP FARMERS ADAPT TO CLIMATE CHANGE

Healthy soils and plants can better withstand climate stress than those with nutrient deficiencies. Fertilizers can considerably increase crops' resilience to climate change when applied following best management practices. This is vital for farmers who need to maximize their yields in good seasons to make up for more severe weather events in bad seasons.

FERTIGATION

Fully water-soluble fertilizer products can be combined with irrigation water to provide plants with nutrients and water in the most efficient way possible, which is an asset in water-scarce areas. This method can be applied in arid or semi-arid regions using more or less sophisticated irrigation systems. Extremely simplified systems such as drips from water bottles can be used by smallholders.



FERTILIZER BEST MANAGEMENT PRACTICES CAN HELP PRESERVE THE HEALTH OF SEAS AND OCEANS

Eutrophication, which is the excess growth of algae in waterbodies, can be triggered by nutrient run-offs from industrial and agricultural sources. This excess growth can, however, be minimized by an optimization of good agricultural practices on the farm, as well as the application of the 4R principles to both mineral fertilizers and livestock manure.



THE ROAD TO A CARBON-FREE FUTURE

IFA is partnering with the International Energy Agency (IEA) and the European Bank for Reconstruction and Development (EBRD) to develop a Global Technology Roadmap for the Nitrogen Fertilizer Sector. This partnership will explore the technologies and strategies necessary for the industry to pursue a pathway towards a more sustainable energy sector and a lower carbon footprint.

The partnership's objective is an ambitious one: to facilitate a low-carbon fertilizer industry by 2050.

To read more about how the fertilizer industry is implementing the SDGs, and to discover case studies in SDG implementation from around the IFA membership, please visit our website: <http://bit.ly/Agenda2030IFA>

“Agenda 2030: Transforming our World”



INDUSTRY STEWARDSHIP— BEYOND BOUNDARIES

The fertilizer industry's presence and reach are indeed truly global, transcending national and regional boundaries. The industry's overall impact is also global as fertilizers contribute significantly to food production in most corners of the globe. Simply put, fertilizers are strategic goods for humanity.

With such intrinsic value and clout comes a special duty to safeguard fertilizers' innate benefits, while ensuring that any risks related to their use or misuse are greatly reduced.

In asking itself hard questions, the fertilizer industry has broadened its view of its operating model to stretch beyond traditional boundaries, beyond the "factory gate" where its goods are produced.

Thus, a stewardship approach is a broader management perspective which considers key safety, health and environmental aspects throughout the product's lifespan, both upstream from the production site as well as downstream to application by farmers in the field.

INTERNATIONAL FERTILIZER SUPPLY CHAIN



Both product and nutrient stewardship have become core building blocks for sustainability management in the fertilizer industry and represent important areas of focus moving forward.

PRODUCT STEWARDSHIP

PROTECT & SUSTAIN:

A global stewardship management framework. Developed by IFA members with external auditors, for IFA members.

Nine years ago, industry leaders came together to turn stewardship “theory into practice”. Through the global association, industry leaders developed a stewardship template, which explicitly outlines the most important safety, health and environment management topics spanning the fertilizer product lifecycle.

The program was labeled **Protect & Sustain, or P&S.**

P&S was developed by the industry with external auditors, for the industry, integrating key aspects of international safety, health and environmental certifications, such as ISO 9001, 14001, OSHAS 18001 and the chemical industry’s Responsible Care to provide participants with a tailor-made governance structure.

P&S has evolved over time to become the de facto global industry reference for product and nutrient stewardship management—and is a main pillar in the Association’s 2030 sustainability transition strategy¹.

P&S CERTIFICATION: WHAT YOU SHOULD KNOW

100 process-related performance measures spread across six main evaluation categories:

- | | |
|---------------------------------------|-------------------------------------|
| 1) Global management system | 4) Manufacturing techniques |
| 2) Product development and planning | 5) Supply chain to customer |
| 3) Sourcing and contractor management | 6) Marketing, sales and application |

Stewardship management assessments are validated by IFA-approved independent auditors, and **certification is valid for 3 years and is reviewed after 18 months².**

Certification awarded at two levels of performance:

P&S Steward
when 60% conformance is reached

P&S Excellence
when 80% conformance is surpassed

¹ The IFA 2030 Strategy is a long-range strategic planning process using alternative plausible future and scenario planning methodologies, focusing on the most pressing issues facing the industry to allow for long-term, informed, robust and anticipatory strategic development.

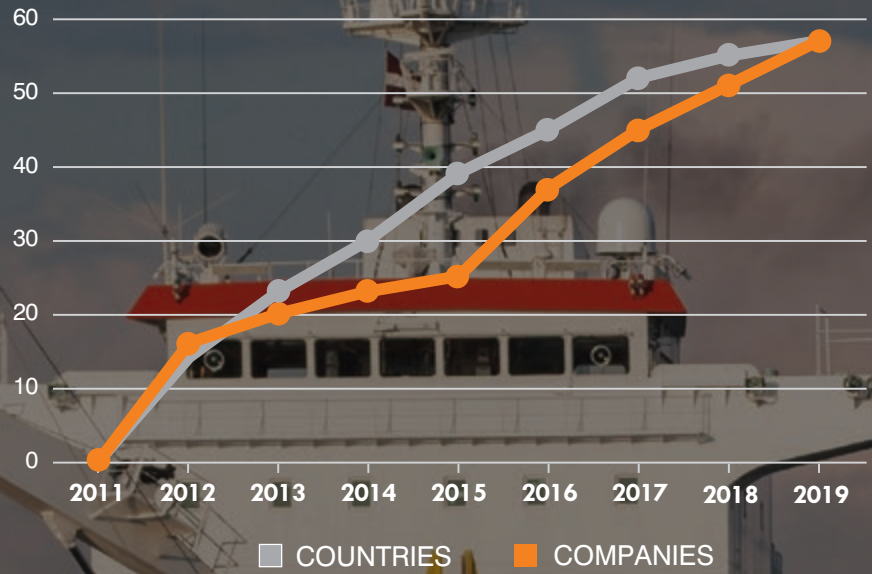
² https://www.fertilizer.org/Public/Stewardship/Product_Stewardship/Public/Stewardship/Product_Stewardship.aspx#protect-sustain

A GLOBAL SUCCESS STORY

Since its launch in 2011, the number of voluntary P&S certifications have skyrocketed, reaching 55 producers and two non-producers from 57 countries, representing a global adoption rate of one third of all IFA member producers.



PROTECT & SUSTAIN CERTIFICATIONS



Quotes from fertilizer leaders:

“Aligning your company’s management strategy with the P&S framework will not only improve your SHE and Security performance but it will also add to your bottom line and your enterprise value in the long run.”

— Abdulrahman Jawahery, President, GPIC (Bahrain)

“Protect & Sustain has become the de facto global product stewardship standard for fertilizer companies and has become a rite of passage for all responsible fertilizer producers.”

— Rakesh Kapur, CEO, IFFCO (India)

P&S CERTIFICATIONS ARE GAINING GROUND AROUND THE WORLD:



Countries: Australia, Austria, Argentina, Bahrain, Belgium, Brazil, Cameroun, Canada, Chile, China, Colombia, Costa Rica, Czech Republic, Croatia, Egypt, France, Finland, Germany, Ghana, Greece, Guatemala, Hungary, India, Indonesia, Israel, Italy, Ivory Coast, Jordan, Kenya, South Korea, Lithuania, Malaysia, Mexico, Morocco, Netherlands, New Zealand, Norway, Oman, Pakistan, Peru, Poland, Portugal, Romania, Russia, Qatar, Saudi Arabia, South Africa, Spain, Sweden, Tanzania, Thailand, Trinidad and Tobago, Turkey, United Arab Emirates, United Kingdom, USA, Vietnam.

MARKING THE ROAD TO SHE EXCELLENCE

SUSTAINABILITY PERFORMANCE BENCHMARKS

The fertilizer industry has set some very ambitious sustainability objectives. As with any other journey to a destination, it is important to mark progress and to celebrate success along the way.

In order to track progress, the global association regularly surveys the industry membership in three established “pillars” of **Safety, Health & Environment (SHE)** performance:

- **Safety performance: lost time and total recordable injuries**
- **Environmental performance: industrial emissions**
- **Energy efficiency and CO₂ emissions in the ammonia sector**

Each review of the industry’s SHE performance is entirely voluntary; however the number of participants in each edition continues to show consistent growth over the years. Moving forward, participation in IFA’s sustainability benchmarks will become a requirement for all IFA member producers.

These benchmark publications provide critical feedback into individual and collective achievements on the road to SHE excellence, while providing important progress markers for continual improvement.

The global industry’s commitment to core SHE Principles

IFA has developed a Charter of Excellence in Safety, Health & Environment that reflects a core set of fundamental values, based on deep respect for workers, the environment and the earth’s precious resources.

All IFA member companies have committed to supporting this Charter in their daily operations and to ensuring that the core principles are integrated into operational management systems. Implicit in this Charter is the notion that the industry should go beyond a “check the box” mentality, aspiring to achieve excellence in all matters related to SHE.

Charter of SHE Excellence:

1. Demonstrate leadership and management commitment in all SHE matters
2. Strive for zero harm and zero adverse environmental impact
3. Integrate SHE into corporate policy and prioritize it
4. Provide adequate financial and human resources for continual improvement
5. Go beyond local compliance to embrace international best practices
6. Create SHE annual objectives, targets or key performance indicators
7. Establish procedures and controls to ensure that SHE is not compromised
8. Provide SHE training and encourage the participation of employees and contractual staff in improvement planning
9. Respect Hazard and Operability Analysis principles and continual improvement
10. Conduct regular internal and external auditing
11. Share information with regards to experiences and lessons
12. Promote safety, security, health and environmental matters to enhance CSR goals

SUSTAINABILITY PERFORMANCE BENCHMARK #1

Safety is a standing item at IFA Board meetings: CEOs take the responsibility to inform each other of serious safety incidents with a view towards avoiding future accidents or share important safety initiatives. Commitment to Safety must start at the very top.

Safe and Secure Workers

Since 2002, IFA has been measuring the global industry’s yearly achievements in lost-time injuries (LTI) and total recordable injuries (TRI) to create global key performance indicators for safety. These performance measures provide valuable insight into where the industry stands and showcases the efforts to continually improve safety performance over time. These indicators also allow fertilizer producers to see where they stand compared to the industry’s best, and in doing so, establish a high standard for safety performance in the industry.



Voluntary participation:

- 78 producers from 36 countries, 404 production sites worldwide, representing a 25% year-over-year increase

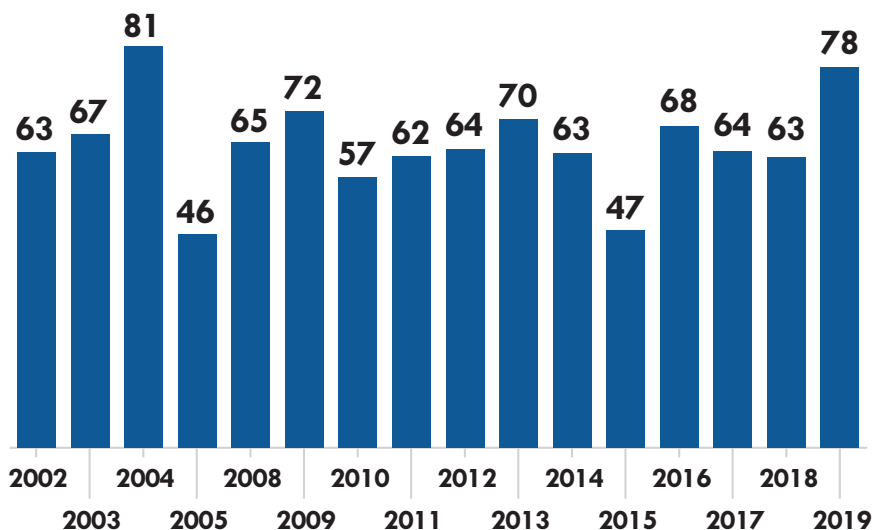
WHAT IS A LOST-TIME INJURY?

IFA defines a lost-time injury (LTI) as an absence from work for more than 24 hours.

WHAT IS TOTAL RECORDABLE INJURIES?

Total recordable injuries (TRI) is a measure that encompasses all fatalities, lost-time injuries, cases restricted for work, cases of substitute work due to injury and medical treatment cases by medical professionals. It does not include any first aid treatment.

SAFETY BENCHMARK PARTICIPATION BY COMPANIES SINCE 2002



A SNAPSHOT OF IFA'S 2019 SAFETY PERFORMANCE BENCHMARK:

- The LTI rate for company employees and contractors combined is trending down, reaching 1.68 in 2018.
- The TRI rate for company employees trended down to 4.71 in 2018, showing a noticeable improvement over the previous years.
- A review of the past five years indicates that a global industry average LTI rate for company employees is emerging, remaining consistently below 3.
- The best-in-class safety performers regularly report zero LTI's for employees.



INDUSTRY SUSTAINABILITY BENCHMARKS

The Value Proposition:

- Past performance – Monitor performance over time by comparing current versus historical performance
- Industry averages – Establish key SHE performance indicators based on recognized average performance of a global peer group
- Best-in-class – Measure up against the best in the industry to set performance goals
- Best practices – Gain qualitative insight into best-available SHE management techniques globally



Quotes from fertilizer leaders:

“ Participating in IFA's safety benchmarking, which includes performance metrics such as lost-time injury rate and total recordable injuries, allows us to continually gauge how our safety management systems are performing. IFA's industry wide benchmark clearly allowed us to drive our safety performance forward to the benefit of our entire workforce.”

— Brent Heimann, Arab Potash Corp. (Jordan)

SUSTAINABILITY PERFORMANCE BENCHMARK #2

Safeguarding the Environment

Through the years, IFA has become increasingly more specific in how it measures and tracks environmental performance in the industry. Its biennial Environmental Performance Benchmark has expanded its scope to include the evaluation of over 50 industrial emission areas across the main product nutrient areas.

This benchmark review provides fertilizer producers with highly targeted industrial emissions indicators, to better inform individual environmental performance “gap analysis” as well as company continual improvement plans and investment priorities.

The surge in voluntary participation in recent survey cycles showcases the collective commitment of the IFA membership to tackle the industry’s environmental footprint and to align its actions with the United Nations’ Sustainable Development Goals.

2018 ENVIRONMENTAL PERFORMANCE BENCHMARK

Industry performance snapshot:

- Voluntary participation reached record levels: 165 production sites in 35 countries representing 286 million tonnes of fertilizers.
- Global emissions averages are “ticking down”, as significant emissions improvements are being noticed in key emissions areas over time.
- A vast majority of fertilizer producers are operating at very low dust-to-air, and nitrogen- and phosphate-to-water levels, confirming a trend towards wider spread adoption of environmental mitigation techniques globally.
- The ammonia and nitric acid sectors confirmed their continued reduction of greenhouse gases, as carbon dioxide (CO₂) and nitrous oxide (N₂O) emissions rates show continual improvement over several review periods.
- Over the past survey period, benchmark participants reported emitting 22 tonnes less N₂O, which is a powerful greenhouse gas with 300 times the warming potential of carbon dioxide.



Quotes from fertilizer leaders:

“ We use the KPIs from the IFA Environmental Performance Benchmark to identify specific improvement areas in our production process. IFA’s tool has been instrumental in helping us to significantly improve our environmental performance and to remain ahead of the curve. ”

— K.K. Kaul, DCM Shriram Ltd. (India)

SUSTAINABILITY PERFORMANCE BENCHMARK #3

The Quest for Maximum Efficiency

IFA's third benchmark tracks Energy Efficiency & CO₂ emissions in the ammonia sector. Energy efficiency in ammonia production represents a key focal point in the fertilizer industry's overall quest to improve its resource consumption and climate performance globally.

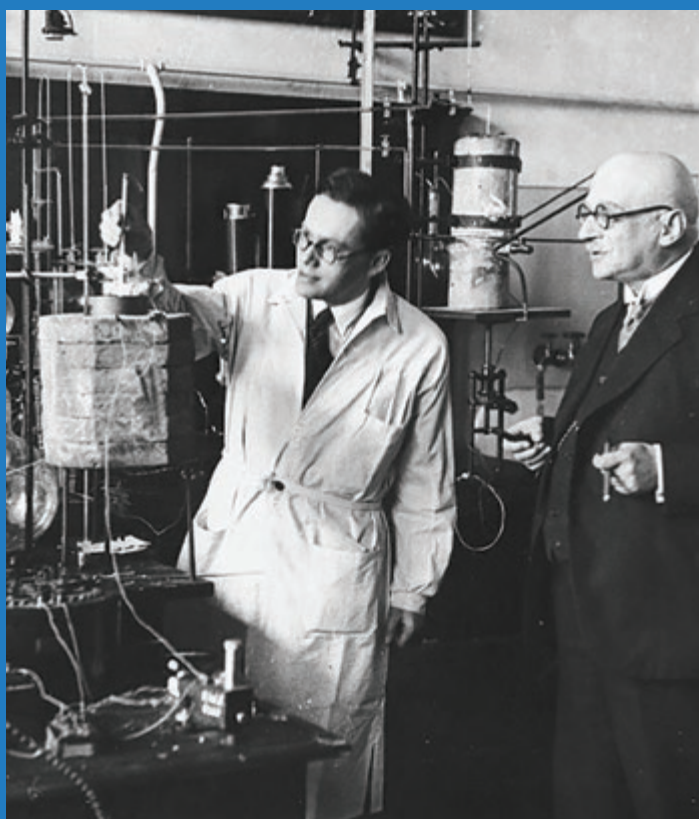
The sector has had a long-standing commitment to maximizing energy efficiency in the ammonia synthesis

process. Significant energy efficiency gains have already been achieved, as new plants built today with the most advanced technologies consume approximately 30% less energy than those built 30 years ago. However, older ammonia plants have also been drastically improved, with many revamped facilities achieving similar efficiencies thanks to investment in best-available production technology.

AMMONIA: A NOBEL PRIZE WINNING INVENTION

Key facts you should know:

- Ammonia is produced using the Haber-Bosch nitrogen synthesis process, which is widely considered as one of the most important inventions of the 20th Century
- The vast majority of nitrogen fertilizers (97%) are derived from synthesized ammonia
- The energy consumption footprint of ammonia production accounts for 90% of the fertilizer industry's total energy consumption
- The ammonia sector accounts for 1% of total global energy consumption
- Natural gas is the primary raw material for ammonia production outside of China

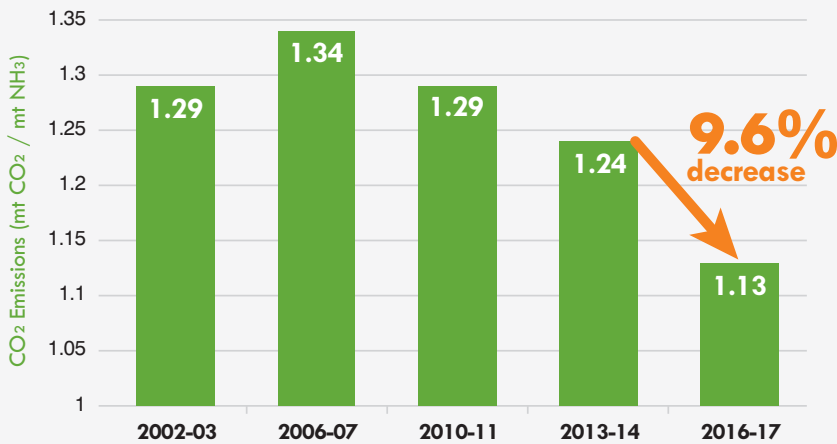


2018 ENERGY EFFICIENCY AND CO₂ BENCHMARK SNAPSHOT

The ammonia sector is now building on this momentum and is continuing its journey to further improve efficiency. Just over the past 15 years, the sector emits 12.5% less carbon dioxide with a 5% savings in overall energy consumption.

During the most recent survey period, participants reported eliminating or capturing approximately 28 million tonnes of carbon dioxide during the survey period.

AVERAGE NET DIRECT CO₂ EMISSIONS



The significant reduction of CO₂ emissions has been possible due to a widespread adoption of Best Available Techniques (BAT) and mitigation technologies and to the recovery and re-use of CO₂ in order to manufacture products such as urea. Additional reduction of GHG emissions have been accomplished by transitioning from coal and heavy fossil fuels to using natural gas as main hydrocarbon feedstock which results in much lower carbon dioxide emissions.

Quotes from fertilizer leaders:

“ My company’s continued participation in the IFA Energy Efficiency & CO₂ emissions benchmarking has enabled us to transform the way we look at this aspect of our business. The emerging KPIs allow us to measure our progress against global standards, and stay one step ahead of regulators. ”

— Yasser Abdulrahim Alabbasi, GPIC (Bahrain)

AWARDING PROGRESS IN GREENING PRODUCTION

Industry leadership believes that “progress makes perfect” and that sustained improvements in SHE performance should be recognized among peers. With just that in mind, the Association awards its Green Leaf label every two years to one deserving production site that has distinguished itself from the rest. An independent panel of judges determines the ranking by assessing overall progress in SHE performance relative to IFA’s sustainability performance benchmarks.

Current Laureate:

The current IFA Green Leaf Award owner is the Rashtriya Chemicals & Fertilizers (RCF) Thal unit, an Indian producer of ammonia and urea.

RCF Thal displayed a high level of best practice implementation in all facets of their SHE management system, leading to best-in-class status in IFA’s performance indicators.

Management was commended for innovative new programs, such as its Employee Involvement Program, which promoted safety and environmental awareness in local schools, colleges, hospitals and villages.



INDUSTRY STEWARDSHIP CHAMPIONS (ISC)

THE NEXT MILESTONE IN SHE EXCELLENCE

IFA continues to seek new ways to recognize commitment to SHE excellence within its membership. Following the P&S and Green Leaf labels, 2019 marked the first edition of the next level of recognition—the IFA Industry Stewardship Champion (ISC) program.

The IFA ISC label is a prestigious one, and is awarded uniquely to those members who have committed to the Association's full portfolio of SHE programs, including Protect & Sustain Stewardship certification and participation in all recent IFA benchmark reviews.

THE EARLY ADOPTERS:

A TOTAL OF 34 FERTILIZER COMPANIES MADE IT PAST THE THRESHOLD IN THE FIRST EDITION IN 2019, REPRESENTING ROUGHLY 20% OF THE FERTILIZER PRODUCING MEMBERS OF IFA.

IFA INDUSTRY STEWARDSHIP CHAMPIONS CLASS OF 2019

CONGRATULATIONS TO THE FOLLOWING 34 IFA MEMBERS



NUTRIENT STEWARDSHIP

“BEYOND THE FACTORY GATE” TO THE FIELD

Nutrient stewardship refers to the efficient and effective planning and management of plant nutrients in a manner that improves the social, economic and environmental performance of mineral and organic fertilizers.

With this stewardship perspective comes the heightened awareness that fertilizer producers can and should continue to play a central role in promoting efficient and effective fertilizer application globally.

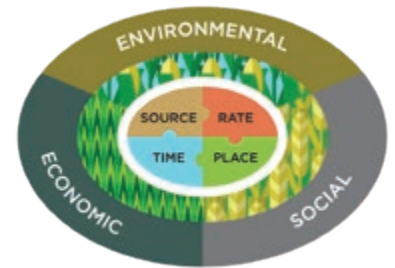
The industry’s over-riding nutrient stewardship objective is for all plant nutrients to be applied using best management practices (BMPs) based on the 4R framework. This approach implies striking a fine balance in fertilization:

THE RIGHT NUTRIENT SOURCE APPLIED AT THE RIGHT RATE, AT THE RIGHT TIME, IN THE RIGHT PLACE.

These best practices not only lead to increased crop yield, but also reduce the loss of nutrients to the environment—providing improved profitability to farmers, improved air and water quality and lower greenhouse gas emissions from the field.

Achieving the 4R objective requires commitment from all industry members, including establishing a knowledgeable employee base and investing in product research, technology innovation, infrastructure and stakeholder partnerships—and most importantly, working closely with our farmer customers and other stakeholders.

Given the limited availability of arable land, sustainable intensification based on nutrient best management practices will play an important role for increasing crop production.



Three main ways to increase crop production:

1. Expand the area of cultivated land
2. Increase the frequency with which land is cropped (e.g. two crops per year on the same field)
3. Boost yields

Steadfast commitments to nutrient stewardship

IFA members have collectively developed a set of industry nutrient stewardship commitments:

1. Partner with farmers to promote nutrient stewardship practices
2. Support fertilizer use research
3. Enable innovation in the field of plant nutrition
4. Engage with key stakeholders to develop virtuous partnerships
5. Implement nutrient stewardship principles to support balanced fertilization and integrated plant nutrient management
6. Measure, monitor and report on nutrient management performance

HOW DO YOU MEASURE THE EFFECTIVENESS OF NUTRIENT STEWARDSHIP?



Crop Nutrient Use Efficiency: A valuable “big picture” indicator

IFA monitors nitrogen use efficiency (NUE) trends globally, and findings indicate that nitrogen is being used more efficiently in several regions. Crop NUE analysis at a global level indicates steady improvement, reflecting the widespread adoption of fertilizer best management practices in many developed countries, as well as, more recently, broader adoption in some developing countries, such as China.

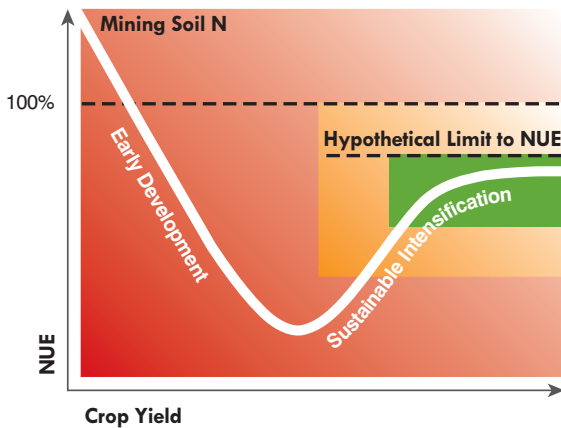
WHAT IS CROP NUE?

Simply put, crop NUE is the proportion of nutrients from all sources that is taken up by the crop. It can be a useful indicator for determining the overall efficiency of fertilizer application practices to crops and for gauging potential environmental losses.

CROP NUE: INTERPRETATION

Output-input ratios that are below 50% often reflect risks of nutrient losses to the environment. In contrast, high output-input ratios, especially those above 100%, often reflect soil nutrient “mining” practices, reducing soil fertility if practiced over time. In both cases, the implementation of better management practices would make significant contributions to more efficient uptake of plant nutrients.

TYPICAL CROP NUE TREND RELATIVE TO CROP YIELD

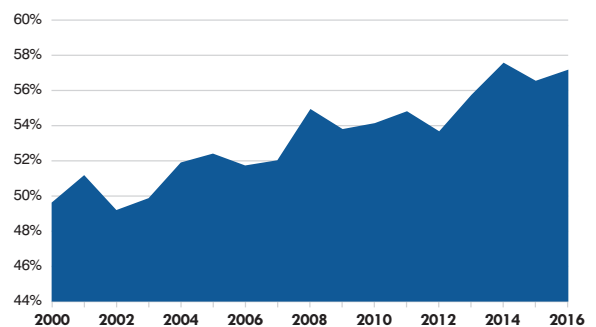


Agricultural development: a two-step process

Early development (phase one): yield increases are supported by larger amounts of fertilizers.

Sustainable intensification (phase two): yield gains are mostly achieved through more efficient use of fertilizers, thus producing more crop tonne per unit of input.

AVERAGE GLOBAL CROP NUE TREND



Crop NUE was calculated using IFASTAT and FAOSTAT as the sum of the nitrogen inputs from mineral fertilizers, biological nitrogen fixation and livestock manure application to cropland, divided by the N output (N removal with the harvested crops).

SCIENTIFIC PANEL ON RESPONSIBLE PLANT NUTRITION:

A Global Scientific Body Providing Guidance on Plant Nutrition Matters

In November 2019 IFA members founded the Scientific Panel on Responsible Plant Nutrition, a global body that will provide fertilizer producers and other stakeholders with scientific guidance on nutrient stewardship issues beginning in 2020. The Panel is expected to address a range of topics such as climate change, soil health, yield gaps, food quality as well as the complex trade-offs between these various issues.



SCIENTIFIC PANEL
ON RESPONSIBLE PLANT NUTRITION

VISION & MISSION

According to the Panel's vision, responsible plant nutrition nourishes plants in a sustainable manner that enhances the earth's capacity to support healthy life.

The Panel's mission is to provide a sound scientific basis for principles and practices of responsible plant nutrition in farming systems.



IFA NORMAN BORLAUG AWARD

Every year since 1993, the IFA grants the Norman Borlaug Award to recognize outstanding research or extension work leading to significant advances in crop nutrition.

2019 IFA NORMAN BORLAUG AWARD WINNER IS DR. ANDREW SHARPLEY

IFA announcement:

The 2019 Norman Borlaug Award recipient is Dr. Andrew Sharpley, whose work has had a huge impact on helping farmers to better understand how to effectively manage phosphorus fertilizers to avoid losses.

Based at the University of Arkansas, Dr. Sharpley pioneered the development of new environmental risk assessment tools, based on his research findings, which have been used by farmers and agronomists, as well as regulatory and resource conservation agencies throughout the world, to develop cost-effective conservation strategies to protect water quality.

By developing the P Index, a tool to identify which areas on a farm are most susceptible to phosphorus loss, Dr. Sharpley has enabled farmers to more effectively target their fertilizer use, and helped reduce the amount of phosphorus lost to the environment in the U.S. by an estimated 25 thousand tonnes. Read more about Dr. Sharpley on our website³.



Photo from Strategic Forum in Versailles 2019

BEYOND NPK:

THE MOVE TOWARDS MORE TARGETED PLANT NUTRITION

The global industry is sharpening its focus on developing and scaling up the nutrient performance of its fertilizer products, diversifying the fertilizer product portfolio into a broad range of crop- and site-specific “special products”.

Site-specific farming requires a different way of thinking about the land. Namely, it is used to detect and measure the differences within fields, record these differences at specific locations and then use this information to guide changes in management of inputs. In short, site-specific farming manages areas within fields, rather than using the same management on the entire field.

Crop- and site-specific plant nutrition helps to maintain or enhance crop yields and reduce overuse or underuse, thus providing savings to farmers through more efficient fertilizer use.



IMPROVING NUTRIENT USE EFFICIENCY WITH PRECISION AGRICULTURE

Precision agriculture uses new techniques and technologies to collect, process and analyze multiple sources of data to improve crop production management.

The aim is to make farming operations more efficient and to increase crop yields and overall quality, while using less inputs, including fertilizers.

By providing a variety of data on crop- and site-specific plant nutrition, soil health and crop status and yields, precision agriculture helps farmers to monitor, manage and apply nutrients more accurately.

Today there are a wide of range of precision ag tools that help to apply fertilizers in an ever more precise and efficient manner to increase productivity on existing farmland while reducing nutrient losses to the environment.



ON-FARM SENSORS

These sensors measure the nutrient content of soils and plants to more precisely match plants' nutrient needs.

DECISION SUPPORT SOFTWARE

Computer and smartphone apps use algorithms to analyze data on soil, crops, weather and farming practices to offer increasingly precise fertilizer application recommendations.



VARIABLE RATE PRESCRIPTIONS

Detailed nutrient measurements can plot the specific nutrient requirements for each area of a field, ensuring site-specific nutrient management.

YIELD MAPS

Yield maps created using GPS and harvest monitors can track yield distribution within a field from year to year to improve fertilizer applications.



MULTISPECTRAL IMAGING

Multispectral images from drones and satellites reflect nutrient levels in the plant canopy to quickly identify and respond to fertilizer deficiencies.

AUTO-GUIDANCE SYSTEMS

Automatic GPS-steered tractors accurately and methodically monitor fields to apply exactly the right amount of fertilizers to the right areas.



“SPECIAL PRODUCTS” IS A BROAD GROUP OF CROP NUTRITION PRODUCTS THAT ENCOMPASSES, AMONG OTHERS, SLOW- AND CONTROLLED-RELEASE, STABILIZED AND WATER-SOLUBLE FERTILIZERS AND LIQUID NPKs. THEY ARE PART OF THE 4R TOOLBOX AVAILABLE TO FARMERS TO IMPROVE NUTRIENT USE EFFICIENCY AND EFFECTIVENESS.

- **Controlled-Release Fertilizers (CRF):** Urea-based (as well as some multi-nutrient) fertilizers that are physically coated with a polymer or a polymer-sulphur membrane, which controls nutrient release according to plant requirements at different growth stages over weeks to months;
- **Slow-Release Fertilizers (SRF):** Condensed chemical forms of urea (e.g. methylene urea, isobutylene urea, urea triazone) that slowly biodegrade or hydrolyze, enabling a slower release of plant-available nutrients over weeks to months;
- **Sulphur-Coated Fertilizers (SCU):** Urea that is coated with sulphur, providing a nutrient release over several weeks;
- **Stabilized Nitrogen Fertilizers (SNF):** Nitrogen-based fertilizers, to which active substances are added to inhibit or slow down the biological transformation of N forms (urea and/or ammonium) in the soil, thus reducing N losses and improving nutrient availability. SNFs incorporate:
 - Urease Inhibitors (UI) which slow down the hydrolysis of urea by urease enzyme to reduce N losses via ammonia volatilization;
 - Nitrification Inhibitors (NI) which slow down the biological oxidation of ammoniacal-N to nitrate-N to reduce N losses via nitrate leaching and N₂O emissions;
- **Water-Soluble Fertilizers (WSF):** Solid nutrients (in straight fertilizers or blends) that are fully soluble to allow their utilization in fertigation, drip irrigation and foliar nutrition;
- **Liquid NPKs:** NPK blends in liquid form.

MARKET SPOTLIGHT: SPECIAL PRODUCTS

- Global demand for special products in 2018 was estimated at over 19 million metric tonnes.
- They are expected to supply almost 5% of total nutrients in 2018 compared to 4% in 2016.
- Special products accounted for 10% of the fertilizer industry's revenues in 2018.

Ref. According to the market assessment by RAMS & Co for IFA

2016 Market Assessment	Mainstream Fertilizers Consumption	Special Products Consumption
	%	%
North America	88.3%	11.7%
Oceania	95.3%	4.7%
Western & Central Europe	95.7%	4.3%
East Asia	95.9%	4.1%
Latin America	96.4%	3.6%
Africa	97.6%	2.4%
West Asia	97.7%	2.3%
Eastern Europe & Central Asia	99.6%	0.4%
South Asia*	99.8%	0.2%
World Total	95.7%	4.3%

* Subsidized urea, which is 100% coated with neem oil in India, is considered as mainstream fertilizer in this assessment



GLOBAL FERTILIZER CONSUMPTION: GEOGRAPHICAL RE-DISTRIBUTION PATTERN

China:

- China is the largest fertilizer consumer, accounting for about one fourth of global consumption.
- The average fertilizer application rate per hectare of cropland is about 20 times higher in China than in SSA.
- Between 2010 and 2017, N and P consumption has dropped, while K consumption has risen firmly, suggesting more balanced and hence more efficient fertilization practices.

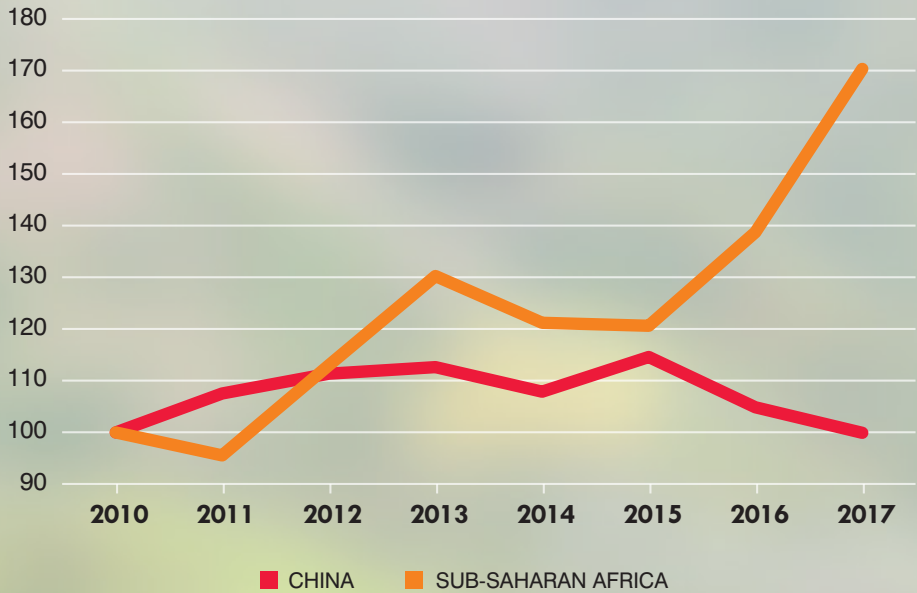
Sub-Saharan Africa (SSA):

- Sub-Saharan Africa's share of global fertilizer consumption is about 3%.
- The region's fertilizer consumption increased by 70% between 2010 and 2017.
- The average application rate increased from 9 kg of nutrients/ha in 2010 to 16 kg/ha in 2017.
- Nevertheless, this fertilization rate remains too low to offset nutrient removal with harvested crops, resulting in steady soil fertility decline, and persisting low yields.



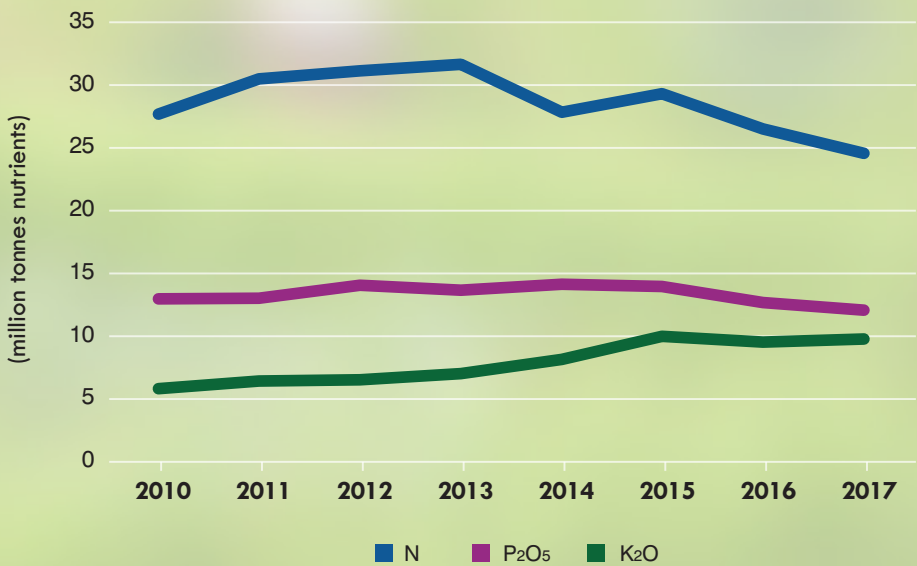
IFA'S FERTILIZER DEMAND FORECASTS INDICATE THAT THE VIRTUOUS TREND OF MORE BALANCED AND MORE EFFICIENT FERTILIZATION IN CHINA AND HIGHER APPLICATION RATES TO MAINTAIN OR RESTORE SOIL FERTILITY IN SUB-SAHARAN AFRICA WILL CONTINUE THROUGH A FIVE-YEAR TIME HORIZON.

RELATIVE FERTILIZER CONSUMPTION IN CHINA AND SSA



SOURCE: IFASTAT [HTTPS://WWW.IFASTAT.ORG/](https://www.ifastat.org/)

FERTILIZER CONSUMPTION IN CHINA



SOURCE: IFASTAT [HTTPS://WWW.IFASTAT.ORG/](https://www.ifastat.org/)

Many IFA members publicly document their sustainability efforts through their Annual Reports, as well as through other formats such as company websites and direct government updates.

A non-exhaustive list of members showcasing their efforts in stand-alone Sustainability Reports and Global Reporting Initiative (GRI) compliance reports is presented below, as well as a list of members having joined the UN Global Compact.

IFA MEMBERS WHO HAVE COMPANY SUSTAINABILITY REPORTS AND/OR GRI COMPLIANCE REPORTS:

AB "Achema"	Lithuania	Omnia Group (Pty) Ltd	South Africa
AdvanSix, Inc.	United States	Omya International AG	Switzerland
Ameropa Conosur SRL	Switzerland	Petrochemical Industries Company (KSC)	Kuwait
Anwil SA	Poland	Prayon	Belgium
Archer Daniels Midland Company d/b/a ADM Fertilizer	United States	Proferti	Argentina
BASF	Germany	P.T. Pupuk Indonesia (Persero) Holding Company	Indonesia
Borealis AG	Austria	Petronas Chemicals Group Bhd	Malaysia
CF Industries, Inc.	United States	PJSC PhosAgro	Russian Federation
Charoen Pokphand Produce Co., Ltd	Thailand	QAFCO - Qatar Fertiliser Company S.A.Q.	Qatar
Engro Fertilizers Ltd	Pakistan	Ravensdown Ltd	New Zealand
EuroChem Group AG	Switzerland	Rio Tinto	United Kingdom
European Fertilizer	Denmark	SABIC - Saudi Basic Industries Corp.	Saudi Arabia
Fauji Fertilizer Company Ltd	Pakistan	Samsung C&T Corporation	Korea
GPIC	Bahrain	Sasol Chemicals a division of Sasol South Africa (Pty) Ltd	South Africa
Grupa Azoty S.A.	Poland	Shell Sulphur Solutions	Canada
Haifa Chemicals Ltd	Israel	Sinochem	China P.R.
ICL Fertilizers	Israel	Sojitz Corporation Fertilizer Sect, Agribusiness Dept. Food Resources Unit	Japan
Incitec Pivot Ltd	Australia	SQM	Chile
Itochu Corporation Inorganic Chemicals Sec. (TOKQF)	Japan	Sumitomo	Japan
J.R. Simplot Co., AgriBusiness	United States	Tessenderlo Chemie	Belgium
JSC URALKALI	Russian Federation	The Mosaic Company	United States
K+S Aktiengesellschaft	Germany	Timac Agro International	France
LITASCO S.A.	Switzerland	Wesfarmers Chemicals, Energy & Fertilisers	Australia
Louis Dreyfus Company	The Netherlands	Yara International ASA	Norway
Ma'aden (Saudi Arabian Mining Company)	Saudi Arabia	ADNOC Fertilizers	United Arab Emirates
MMTC Ltd	India		
Myanma Awba Group Company Ltd	Myanmar		
Nutrien	Canada		
OCP S.A.	Morocco		

UNITED NATIONS' GLOBAL COMPACT:

A GLOBAL FRAMEWORK FOR POSITIVE BUSINESS ACTION

What you should know:

This UN initiative is one of the world's largest corporate sustainability programs, calling on companies to take on strategic actions to advance broader societal goals, and to contribute actively to advancing the UN Sustainable Development Goals.

By incorporating the Global Compact's Ten Principles into company strategies, policies and procedures, companies demonstrate their commitment to people and planet, as well as set the stage for long-term business success.



THE PRINCIPLES

The UN Global Compact is a sustainability framework based on ten over-riding principles in the areas of human rights, environmental protection and anti-corruption:

- Principle 1:** Support and respect internationally proclaimed human rights
- Principle 2:** Avoid human rights abuses in all cases
- Principle 3:** Uphold the freedom of association and the right to collective bargaining
- Principle 4:** Eliminate all forms of forced and compulsory labor
- Principle 5:** Abolish child labor
- Principle 6:** Eliminate discrimination in employment and occupation
- Principle 7:** Support a precautionary approach to environmental challenges
- Principle 8:** Promote greater environmental responsibility with new initiatives
- Principle 9:** Facilitate the development and diffusion of environmentally friendly technologies
- Principle 10:** Combat corruption in all its forms, including extortion and bribery

IFA AND THE GLOBAL COMPACT

IFA members worldwide are increasingly leveraging key international reporting frameworks to drive change in their corporate sustainability strategies, aligning their actions with globally accepted frameworks.

IFA IS AN ACTIVE MEMBER OF GLOBAL COMPACT **SINCE 2014**

As of 2019, a total of 22 IFA member companies have joined the UN's Global Compact, representing virtually all continents in the world.

UNITED NATIONS' GLOBAL COMPACT: IFA MEMBER PARTICIPANTS

- | | |
|---|--|
| Nutrien, Canada | Saudi Basic Industries Corporation (SABIC), Saudi Arabia |
| CF Industries, United States | Engro, Pakistan |
| Haifa Group, Israel | GCT - Groupe Chimique Tunisien, Tunisia |
| Grupa Azoty, Poland | Sinochem Group, China, P.R. |
| PJSC PhosAgro, Russian Federation | K+S Aktiengesellschaft, Germany |
| TIFERT - Tunisian Indian Fertilizers, Tunisia | Rio Tinto, United Kingdom |
| Agrifields DMCC, United Arab Emirates | Mitsui (Associated Member), Japan |
| BASF S.E., Germany | Orica (Associated Member), Australia |
| Fauji Fertilizer Company Limited, Pakistan | Olam (Associated Member), Singapore |
| Gulf Petrochemical Industries Company (GPIC), Bahrain | Solvay (Associated Member), Belgium |
| Yara International, Norway | SNC-Lavalin Group Inc, Canada |

REPRESENT THE SHARE OF GLOBAL PRIMARY NUTRIENTS' CAPACITIES IN 2019

**OVER
17%**
OF THE GLOBAL
AMMONIA
CAPACITY



**OVER
14%**
OF THE GLOBAL
PHOSPHORIC ACID
CAPACITY



**OVER
29%**
OF THE GLOBAL
POTASH
CAPACITY



IS SOCIAL AND ENVIRONMENTAL SUSTAINABILITY ON TRACK TO BECOME AS IMPORTANT AS MARKET SHARE AND SHAREHOLDER VALUE?



NEW YORK, USA
3-7 February 2020

www.ifa-newyork2020.org

THE FIRST EDITION OF IFA'S GLOBAL STEWARDSHIP CONFERENCE

Thought leaders from international organizations, governments and the fertilizer sector gather together to focus on the fertilizer industry's sustainability priorities through the 2030 horizon:

- **Product and nutrient stewardship** —
- **Innovation in environmental protection and climate change** —
- **Developing new sustainability initiatives and business models** —
- **Sharing sustainability initiatives and best practices** —
- **Reviewing alignment with UN SDGs** —

The new global meeting place for sustainability in the fertilizer industry.



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INTERNATIONAL
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