



Semillas, la Base de la Seguridad Alimentaria

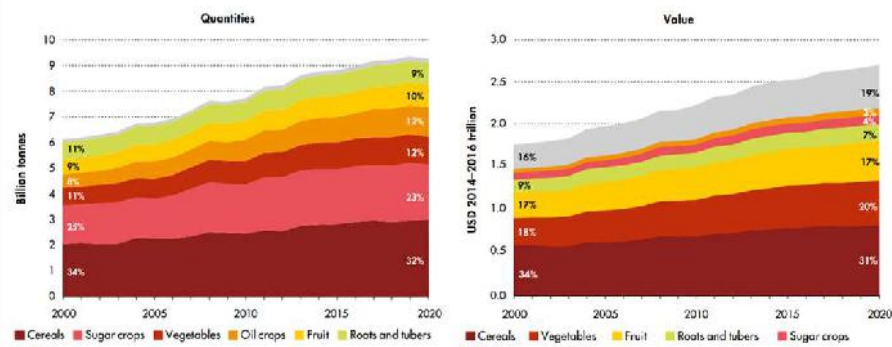
Congreso Nacional de Semillas, Anpros

Monticello, Chile, August 24th, 2023

Michael Keller
Secretary General

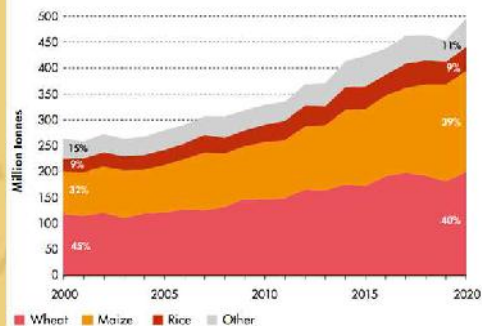
Crop Production steadily increasing...but...

FIGURE 20
WORLD PRODUCTION OF CROPS BY COMMODITY GROUP



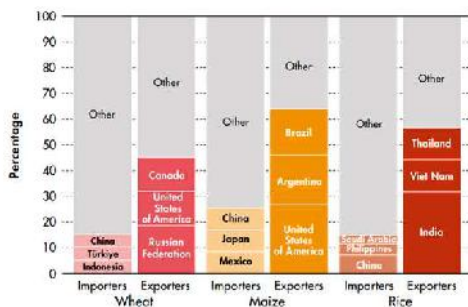
Note: Percentages on the figure indicate the shares in the total; they may not tally due to rounding.
Source: FAO, 2022. FAOSTAT: Production: Crops and livestock products. In: FAO, Rome, Cited October 2022. <https://www.fao.org/faostat/en/#data/GCL> and FAO, 2022. FAOSTAT: Value of Agricultural Production. In: FAO, Rome, Cited October 2022. <https://www.fao.org/faostat/en/#data/GV> <https://doi.org/10.4060/cc2211en-fig20>

FIGURE 39
WORLD EXPORTS OF CEREALS BY MAIN COMMODITIES



Note: Percentages on the figure indicate the shares in the total; they may not tally due to rounding.
Source: FAO, 2022. FAOSTAT: Trade: Crops and livestock products. In: FAO, Rome, Cited October 2022. <https://www.fao.org/faostat/en/#data/ICL> <https://doi.org/10.4060/cc2211en-fig39>

FIGURE 40
MAIN TRADED CEREALS, TOP IMPORTERS AND EXPORTERS (QUANTITIES, 2020)



Source: FAO, 2022. FAOSTAT: Trade: Crops and livestock products. In: FAO, Rome, Cited October 2022. <https://www.fao.org/faostat/en/#data/ICL> <https://doi.org/10.4060/cc2211en-fig40>

- Between 2000 and 2020 – agricultural land **declined** by 134 million ha (~size of Peru)
 - Chile less 500 000 ha Crop land
 - Workforce in agriculture since 2000 – 200 million (860 million)
 - Primary crop production + 53% since 2000
 - Meat production increase since 2000 by 45% (chicken 50%)
- ... do not forget 80% of food is plant based! (FAO report)**



Climate, yes it's changing!

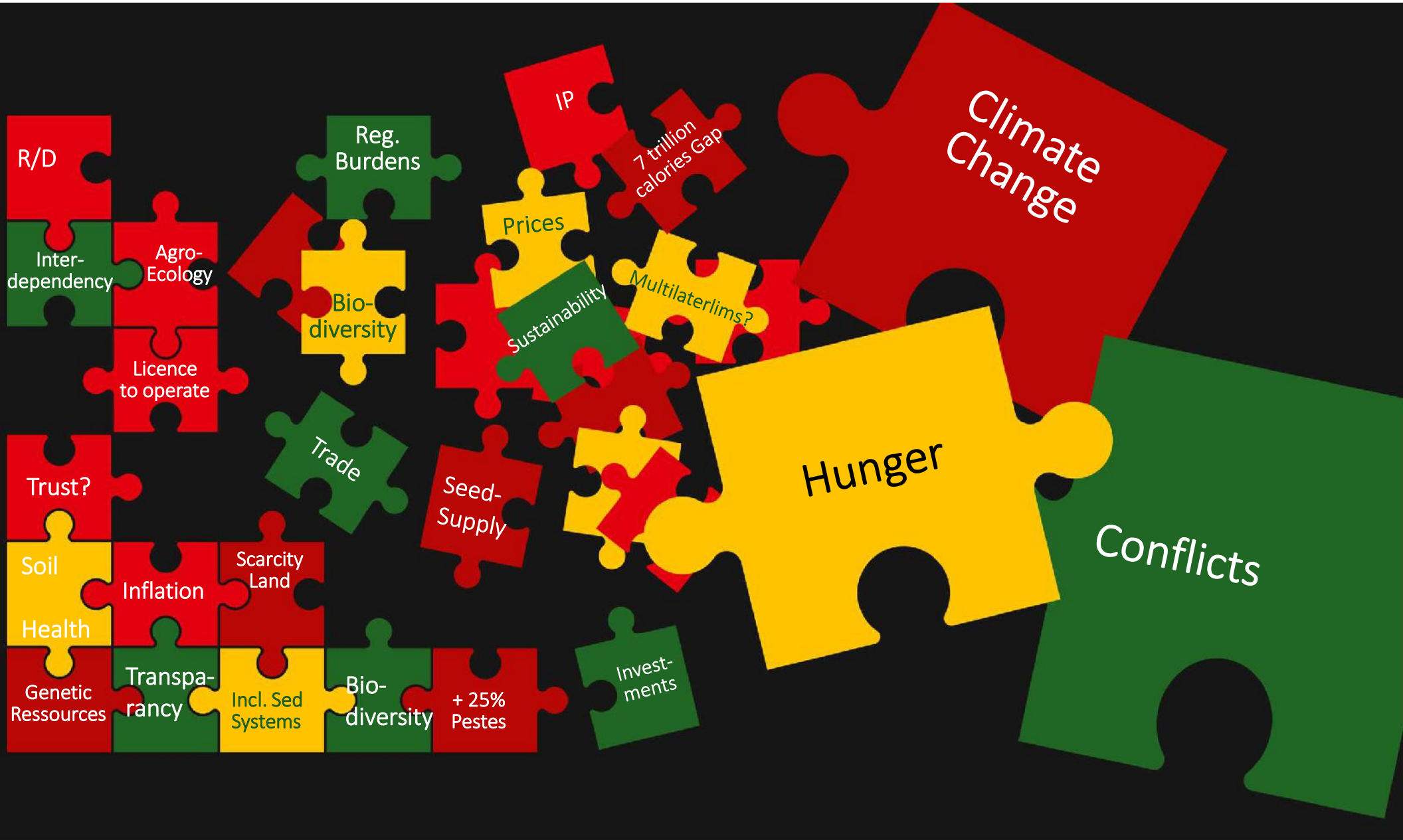
- Rising temperatures- reduced crop productivity
- Increased frequency of droughts
- Excess rainfall/flooding
- Milder winter
- Increase in the areas affected by salinity
- Changes in crop cycles
- Countries in near East or Northern Africa – water stress level = 100%



Even with Food production: business as usual is not an option, we need more

- Food gap +900 million people
 - 2.37 billion people no access to adequate food + 50% since 2015.
 - Workforce in agriculture since 2000 –200 million (860 million)
 - In 10 years + 30% world income increase
 - Continued change in eating habits + healthier and sustainable
 - + 68% milk and meat consumption
 - Gap of 7 trillion calories
 - Increase of 70 % Food production needed in an increasingly climate impacted environment (heat in India, Flooding in Australia, etc...)
- ...and Green house gas emissions increased at farm gate level – high policy pressure
- ... do not forget 80% of food is plant based! (FAO report)**





**«Si no escalas la montaña, jamas
podrás disfrutar el paisaje.»**

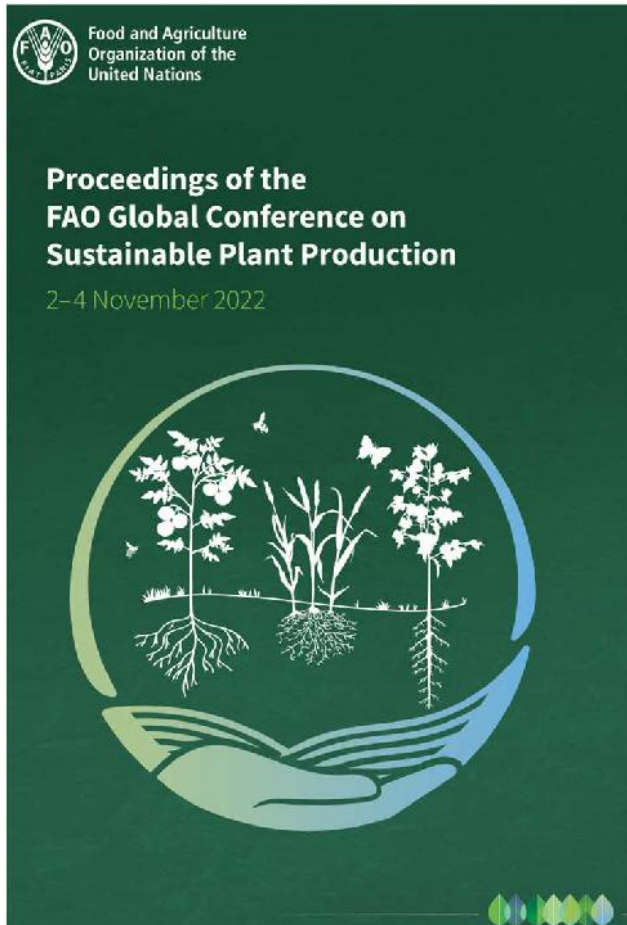
Pablo Neruda

FAO – conference Seed industries 2021



- Adapt Innovation that harness appropriate scientific and technologic advancement
- Create enabling business environment – national policies + laws + regulations
- Support capacity for timely access to enough quantity and quality of seed
- Seed actions – including investment

FAO – Global Conference on Sustainable Plant Production 2022



- **There are no good crops without good seed.**
- Sound policies, regulations and laws are necessary to ensure the development of a well-functioning seed system.
- Support governments, the private sector and civil society organizations to conserve and characterise genetic diversity and **to develop productive and locally adapted plant varieties that can meet future demands for high-quality and plentiful food despite increased occurrence of pests and diseases, limited natural resources and unpredictable changes in weather and climates.**
- **High quality seed is the foundation of agrifood systems;** it is alive, healthy, true to type and free of contaminants.
- **Farmers should use high quality seeds and planting materials of adapted and productive varieties in order to have sustainable plant production systems that enable the required increase in food production for an ever-increasing human population.**



With over 80 percent of our food being plant-based, it is evident that sustainable crop production systems

are critically important for any meaningful transformation of agrifood systems.

We are very mindful that seed systems are key for crop production.

There are no good crops without good seeds because seeds are the vehicles for translating the genetic potentials in crop varieties into desired outputs from farmers'

fields, such as improved productivities and enhanced nutritional quality attributes.

FAO Director General
QU Dongyu



Action time – the solutions of yesterday are not enough

2023:

Transforming Food Systems



HOJA DE RUTA DE CHILE - SISTEMAS ALIMENTARIOS SALUDABLES, SOSTENIBLES E INCLUSIVOS

Climate Change debates – focus on Agricultural Production



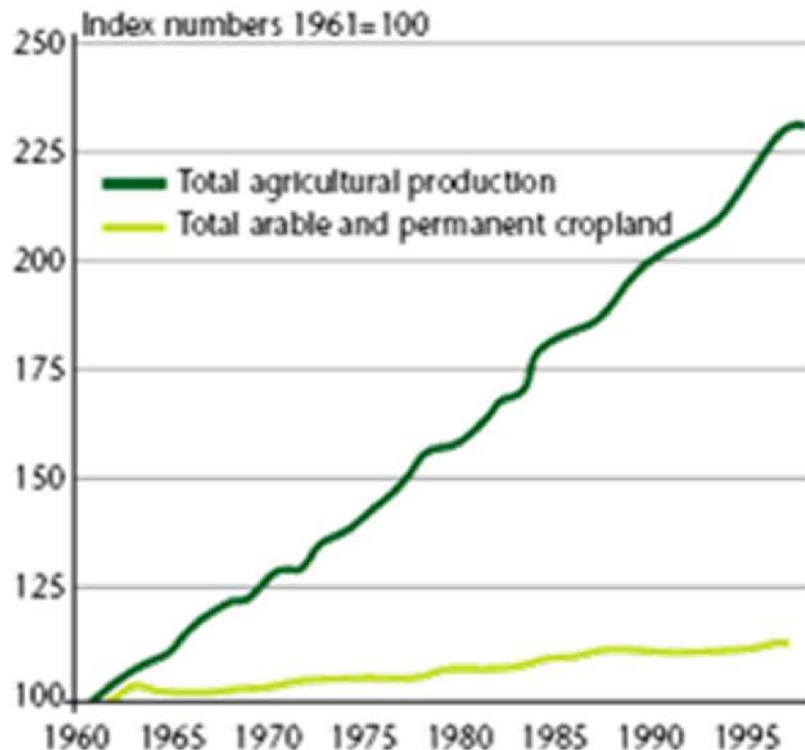
The seed sector has a critical role to play



Our Journey to Sustainability and Seed Resilience
is based on Efficiency and Innovation
Starts with Seed – No one size fits all solution!!



Current food supplies depend on improved seed



- Productivity has steadily increased:
 - **Improved seed**
 - mechanisation, irrigation
 - fertilisers
 - crop protection chemicals
- 40% of world's food would not exist without:
 - Improved **seed**
 - crop protection
- 50 percent less water use – Rice Varieties
- Tomato variety enriched with amino acid – lower blood pressure, healthier and nutritious food

Source: WBC for Sustainable Agriculture, Crop Losses to Pests (E-C Oerke); Journal of Agricultural Science (2006)

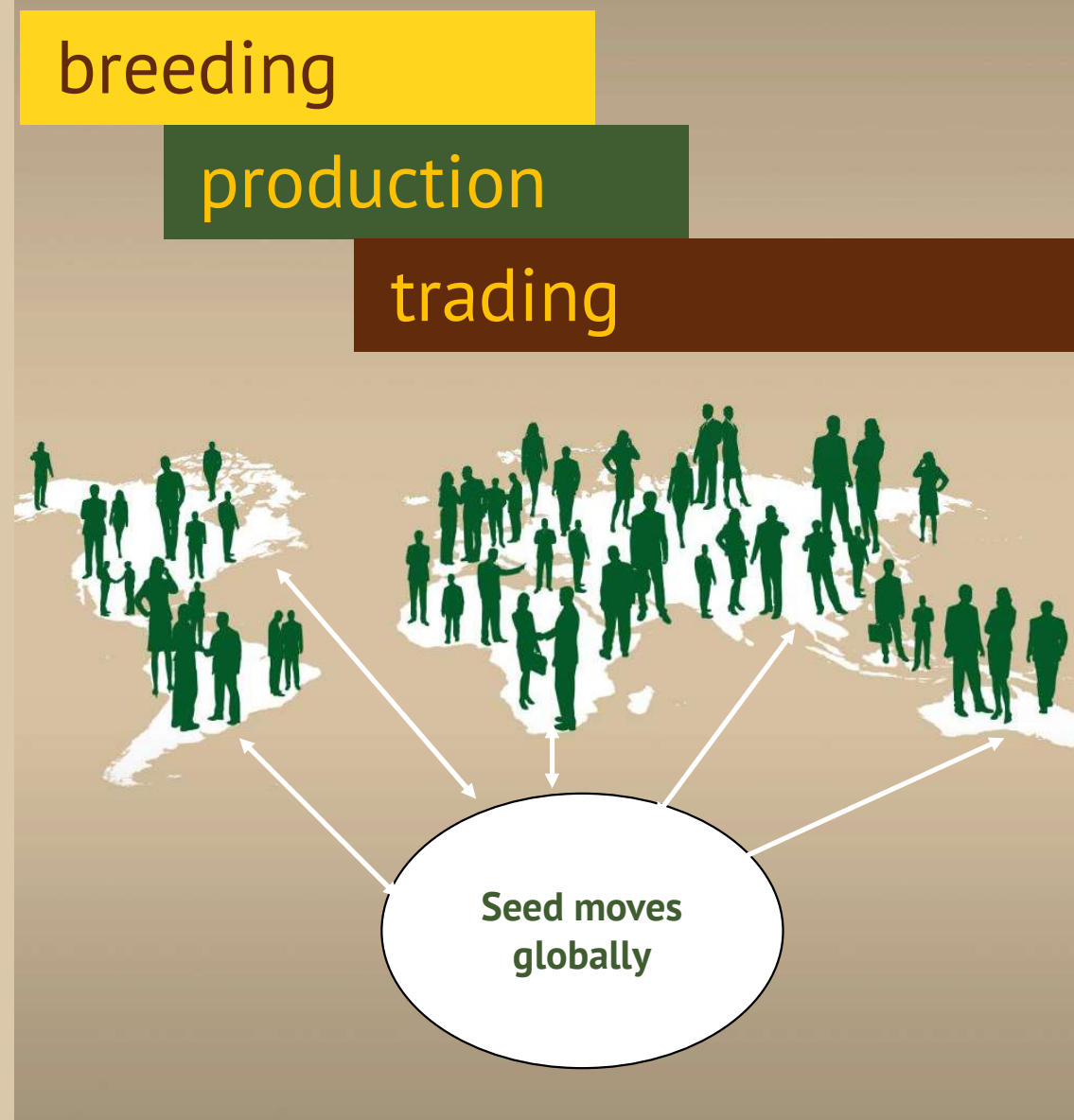
9/22/2023

DKL Elliott Lecture, Feb '11

13

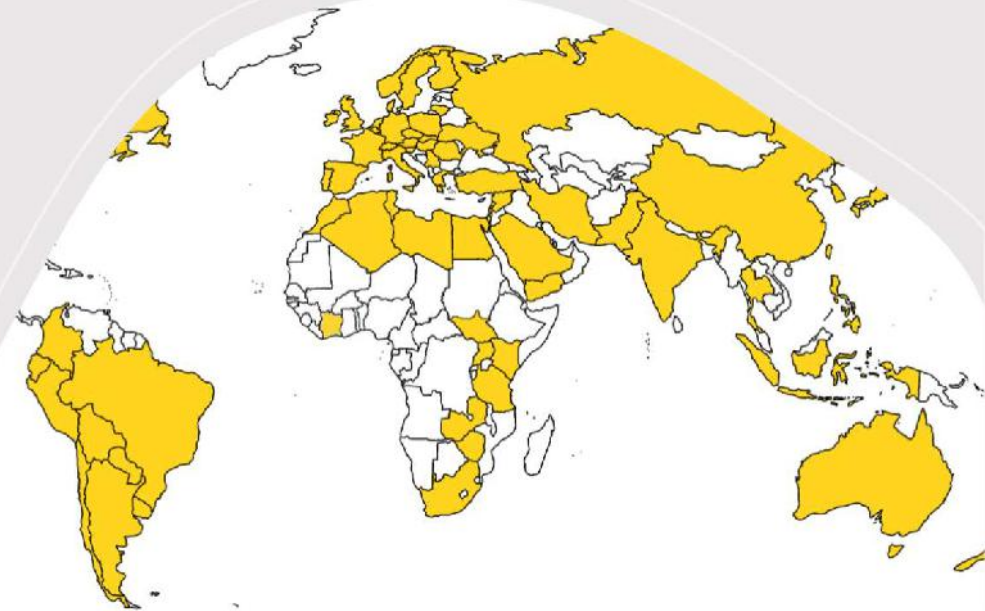
Interdependency

- No country can fully supply farmers with seed of their choice solely from their own production.
- By identifying optimal locations for seed production, timing of harvest, and localized expertise, the seed sector ensures the steady supply of seed for farmers everywhere



Gracias – Chile and Anpros

- Contribucion muy importante a la produccion mundial de semillas
- ANPROS, gran promotor de sus intereses en todo el mundo
 - Participacion en los grupos de trabajo y en el “Board of Directors
 - Camara de Arbitraje

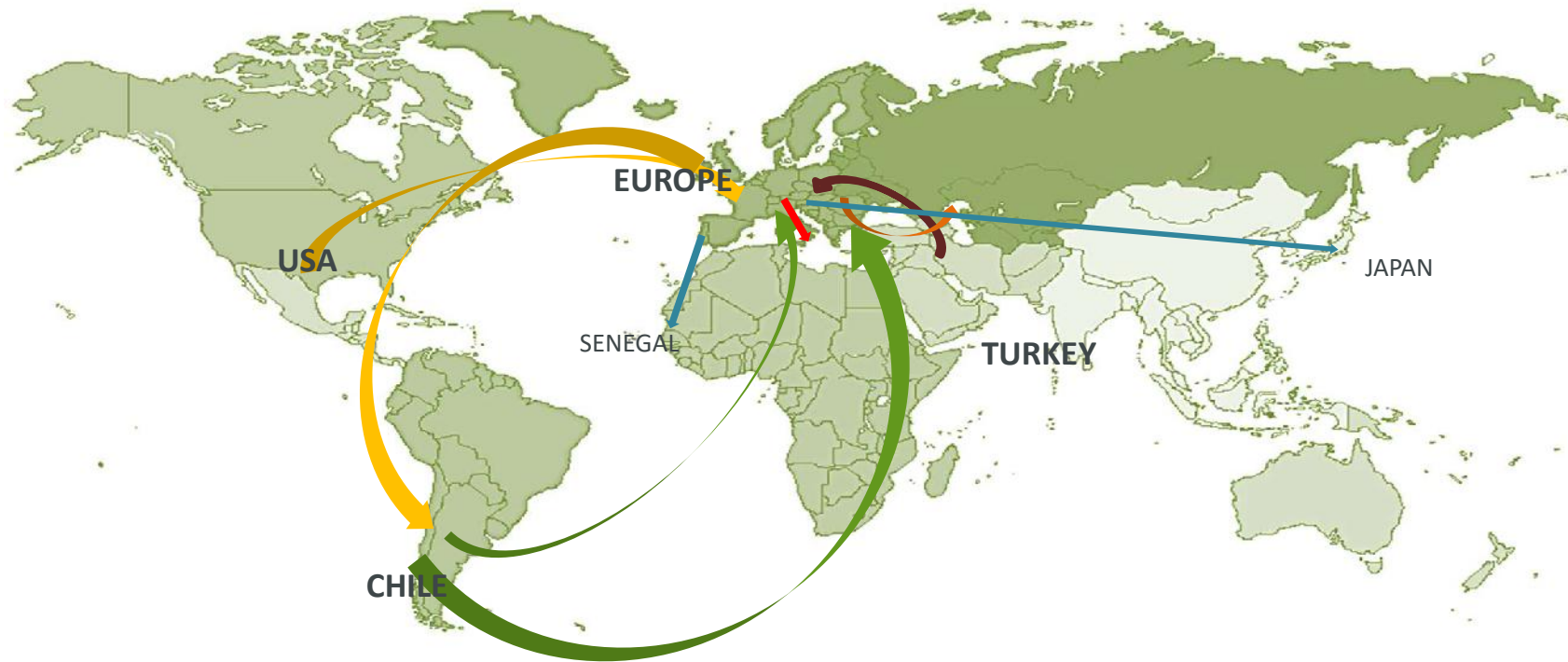


Counterseason Production – an asset and a need for the global seed supply



- To generate greater seed volume
- To accelerate a commercial launch
- To increase the genetic gain of the breeding program
- To introduce a new breeding technology
- To broaden the portfolio of offered products.
- To lower impact from climate change and weather conditions.
- To leverage existing expertise.

Pathway for a corn variety



Seed trends

- ✓ Global seed market growing
- ✓ Movement of seed increasing
- ✓ Faster breeding and commercial processes
- ✓ Plant breeding & seed production by private sector
- ✓ Counter season breeding and production

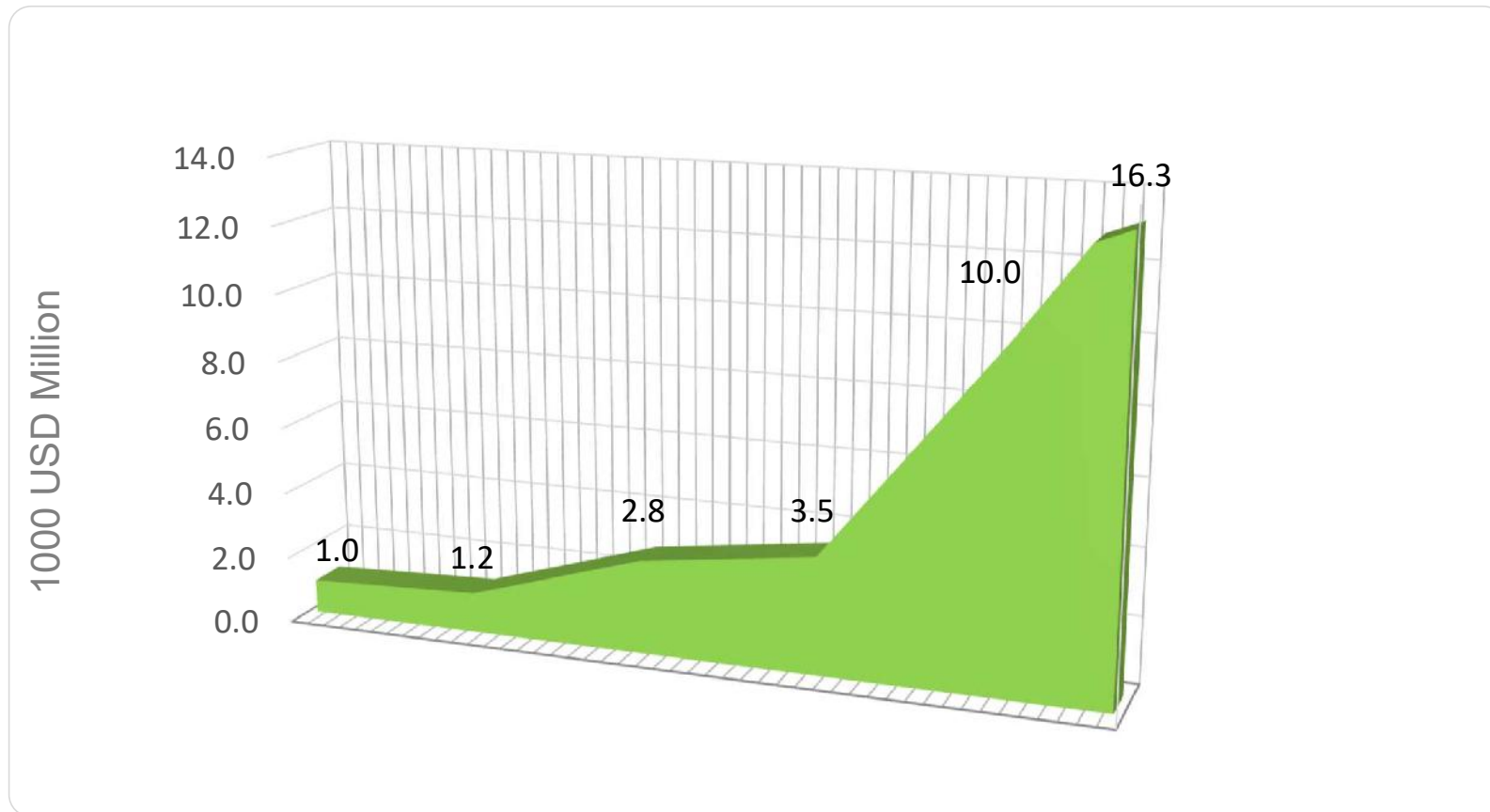
breeding

production

trading



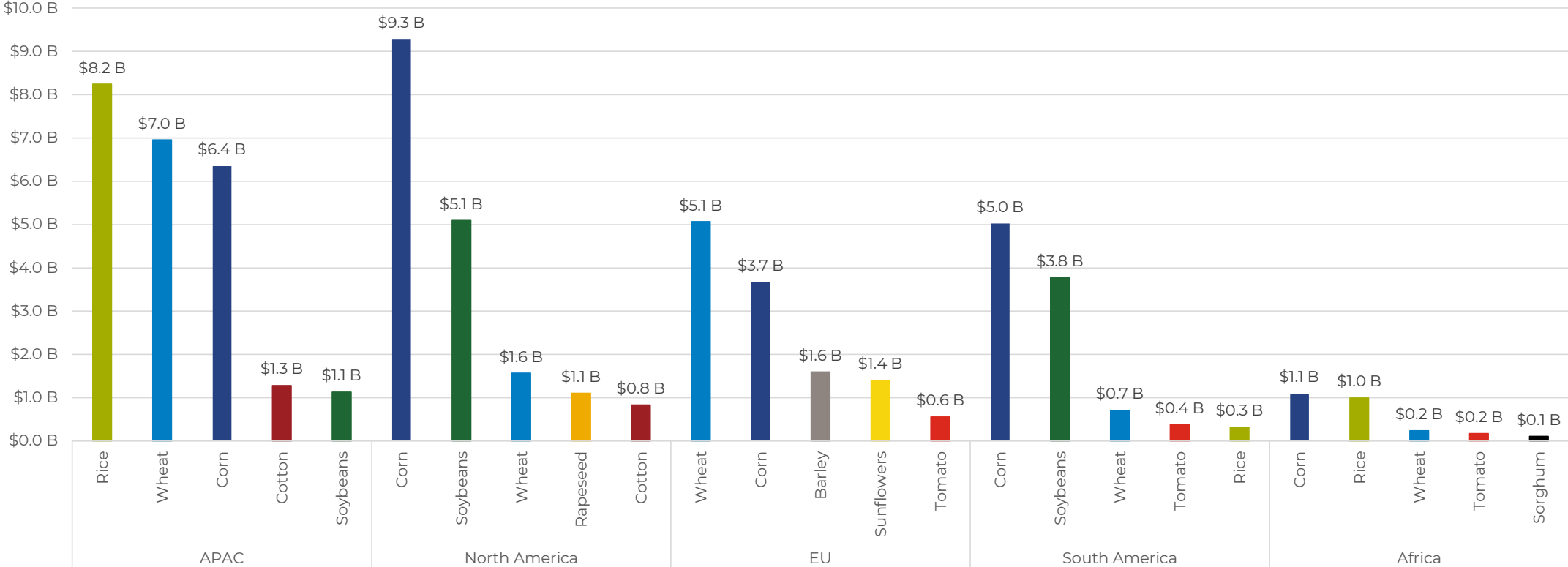
International Trade of Seed (1970 – 2021)



Charts/Graphs



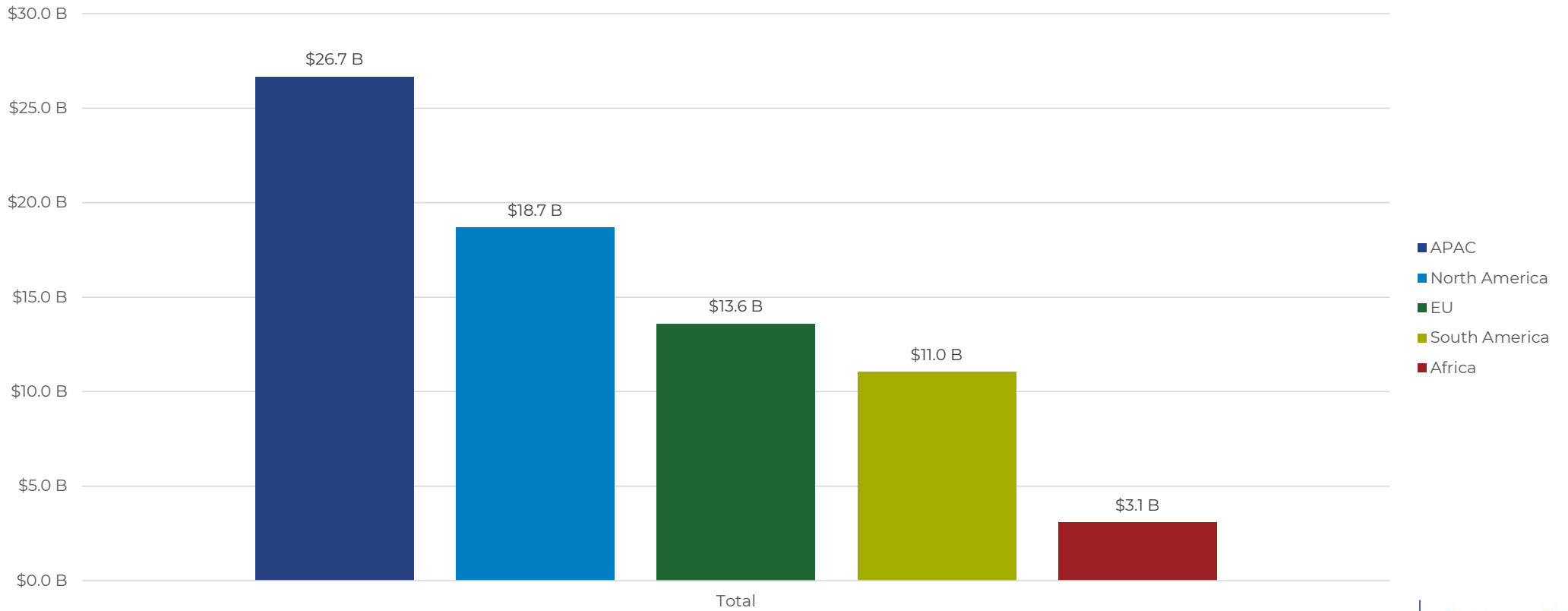
Top 5 Crops by Region – HY2021 Grower Value (US\$ B)



Charts/Graphs



Total HY2021 Grower Value by Region (US\$ B)







“A world where the **best quality seed** is accessible to all, supporting **sustainable agriculture** and **food security**.”

1 NO POVERTY


3 GOOD HEALTH AND WELL-BEING


12 RESPONSIBLE CONSUMPTION AND PRODUCTION


2 ZERO HUNGER


8 DECENT WORK AND ECONOMIC GROWTH


13 CLIMATE ACTION


15 LIFE ON LAND


17 PARTNERSHIPS FOR THE GOALS




It's about our joint Capacity to provide
Seed Choice for Farmers

- to address at local level Life on Land, end Hunger, Climate change and Consumers demands!
- Leave no one behind!

SEED SECTOR DECLARATION - OUR ENGAGEMENT- SEED RESILIENCE



Seed as the starting point
Our sector takes part in the journey
to the Food Systems Summit 2021

DECLARATION

SEED RESILIENCE

“The adaptability and capacity to contribute to food and nutrition security by making accessible sufficient, diverse, locally adapted, improved, high quality varieties to all farmers taking into account environmental, health and socio-economic aspects”



SEED RESILIENCE NEEDS:

- **Continued genetic progress:** to produce more on less with less impact on environment, climate, soil (carbon sequestration) and with increased nutritional aspects
- **Incentivising Innovation:** to encourage, diversify and protect breeding, through science based, consistent, aligned and predictable regulations
- **Sustainable seed systems:** to create seed choice and access for farmers
- **Seed trade:** to increase and diversify seed supply and create seed markets by leveraging experiences
- **Functioning markets:** to build value chains for farmers



SEED RESILIENCE – all 5 KSOs concerned

“The adaptability and capacity to contribute to food and nutrition security by making accessible sufficient, diverse, locally adapted, improved, high quality varieties to all farmers taking into account environmental, health and socio-economic aspects”



OUR INITIATIVES !

- 1 Initiating in partnership a network of “Experience” and “Knowledge” on Seed Resilience - **Partnership with the World Farmers Organisation**
- 2 Setting up a renewed dialogue based on collection of data on sustainable seed systems - and their contribution to Sustainable Development Goals – **SeedsforFood Coalition**
- 3 Building a flagship project with partners for a sustainable seed system based on inclusiveness in a country - **Rwanda**
- 4 Developing a best practices guide on access to improved varieties and crop management



Your voice!



Conservation, Access, and sustainable use of genetic resources is essential

- Through our sustainable use of plant genetic resources – we create better varieties and diversity for in the field
- Access to other genetic resources in gene banks is needed



- Preferred tool:

“Conservation & sustainable use of PGRFA; access and benefit-sharing”



It is now!



2 ZERO HUNGER



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



15 LIFE ON LAND



17 PARTNERSHIPS FOR THE GOALS



Plant Breeding Innovation – Predictable Science based Regulations are necessary

- **Breeding is in our DNA!**
 - Yield, taste, nutritional quality, drought, salinity, disease resistances, pests, etc...
 - 80+ of Crops + thousands of researchers + hundreds of breeding programs.
- **Capacity to use all existing breeding tools**
 - Genome editing: + 40 Crops 30 countries – “improved performances”
- **Access to supporting technologies**
 - Digitalization, Bioinformatics, Big Data,...



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



13 CLIMATE ACTION



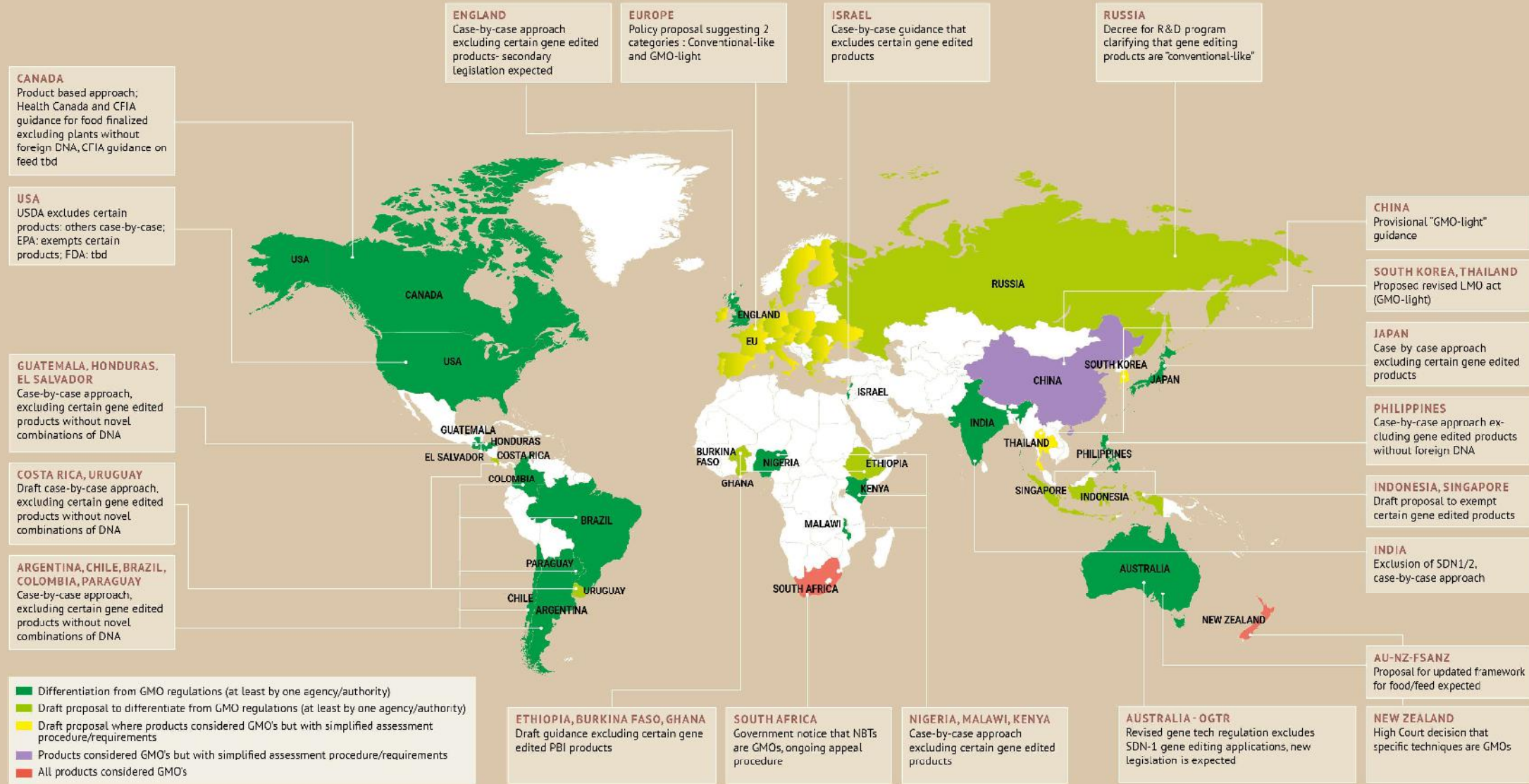
15 LIFE ON LAND



17 PARTNERSHIPS FOR THE GOALS



Policy developments around the world 08/2023



Consistent science based trade rules

To move healthy seed to different countries

- **Plant Health starts with Seed Health** from pre-breeding to commercialisation - we are committed!!
- Interdependency of seed supply
- Our work: International Seed Health and Regulated Pest List Initiatives
- Collaboration with IPPC + WTO + National Plant Protection Offices



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



15 LIFE ON LAND



17 PARTNERSHIPS FOR THE GOALS



Systems Approach by ISF

- Work with International Plant Protection Convention (IPPC) – global acceptance.
- Involve NPPOs from the beginning - create support – discussions.
- Start small and work from success – move commercial seed lots within a limited number of countries – **ISF pilot**



Pilot

Goal

Try and reach agreement about how Systems Approach could work with a small number of NPPOs representing countries where seed production, processing and sales takes place.

Trial a complete pathway from production to processing/re-export to commercial planting

- Four countries have agreed to participate: **country of production (Chile)**, country of re-export (USA, NL), country of import (sales) (ZA)
- Proposed crop: cucumber
- Bilateral meetings with NPPOs to explain background and get a feel for feasibility/ bottlenecks
- Milestone: agreement about pilot process on paper
- Milestone: actual shipment of seeds

Output of pilot: Show that multilateral acceptance is possible

Pilot – 1st field visits in Chile 2022

Goal

- Show industry practices for cucumber seed production

Participants: SAG – and ANPROS representatives, seed company employees

Visits to Bayer, BASF, HM Clause, 3rd party seed producing company.

Conclusions by SAG

- ‘Industry practices can contribute to risk management in cucumber seed production’.
- Process critical points:
Pest list determination, healthy starting material, vector- and weed control, general risk mitigation measures, indoor – outdoor, trained personnel, auditable field monitoring, registration, determine responsibilities.

Pilot – 2nd field visits in Chile 2024

Goal

- Show industry practices for cucumber seed production to all NPPOs participating in the ISF Pilot

Participants: representatives of the NPPOs of Chile, South Africa, USA and Netherlands, ANPROS, SANSOR, ASTA and Plantum, ISF SHM and Chair and Vice Chair of the ISF SA EG

Visits to Bayer, BASF, HM Clause, 3rd party seed producing company.



Contribution must be economically sustainable – Win/ Win Situation!

- R/D of private seed sector 15-20% of turnover
- Approx. 10 billions US \$ per year in 80+ crops in Northern and Southern Hemisphere
- Every year over 20'000 new varieties + 200'000 varieties accessible to world wide
- Impact for farmers:
 - **Ethiopia** introduction improved varieties X 5.7 yield increase (Source: Fair Planet)
 - better yield, better resilience, better product quality, better Livelihood!



1 NO POVERTY



2 ZERO HUNGER



15 LIFE ON LAND



17 PARTNERSHIPS FOR THE GOALS



**“Is there anyone expressing doubts...
that today it’s the time to join our
complementary strength in our
diversity in the seed supply chain for
sustainable agricultural production to
adapt and adjust to a changing world.”**



Seed is Life