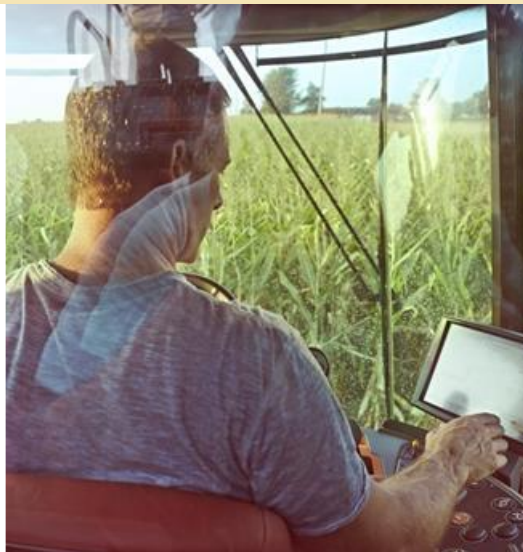




# Seed Movement & Exchange



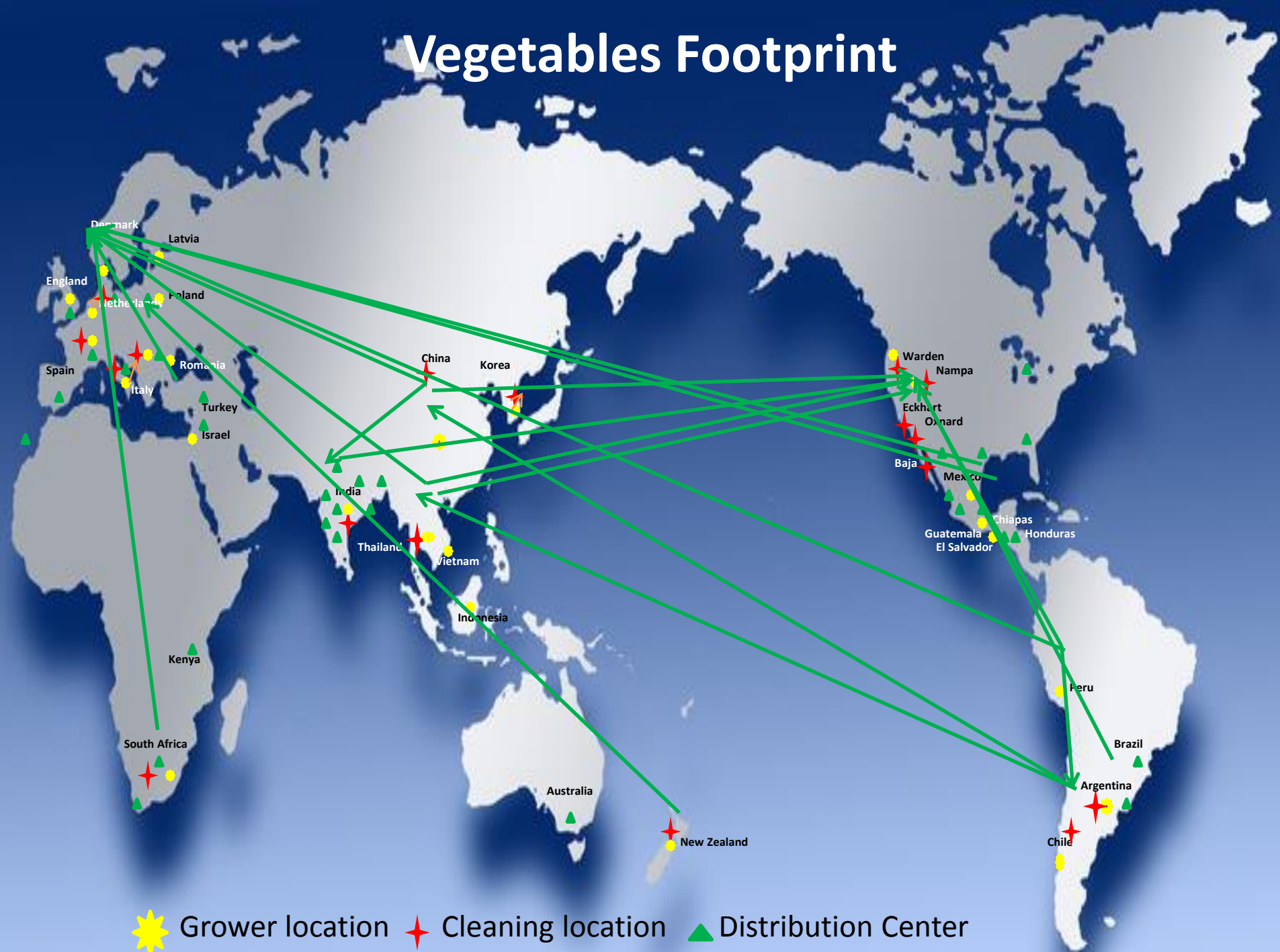
# Solutions for Sustainable Agriculture

Industry toolkit includes:

- Plant Breeding
- Biotechnology
- Crop Protection
- Precision Agriculture
- Biologicals



# Vegetables Footprint



# Special nature of seed movement

1 Breeding parental lines: EUROPE – State 1

2 Production of basic seeds: EUROPE – State 2

3 Treatment and processing of basic seeds: EUROPE – State 1

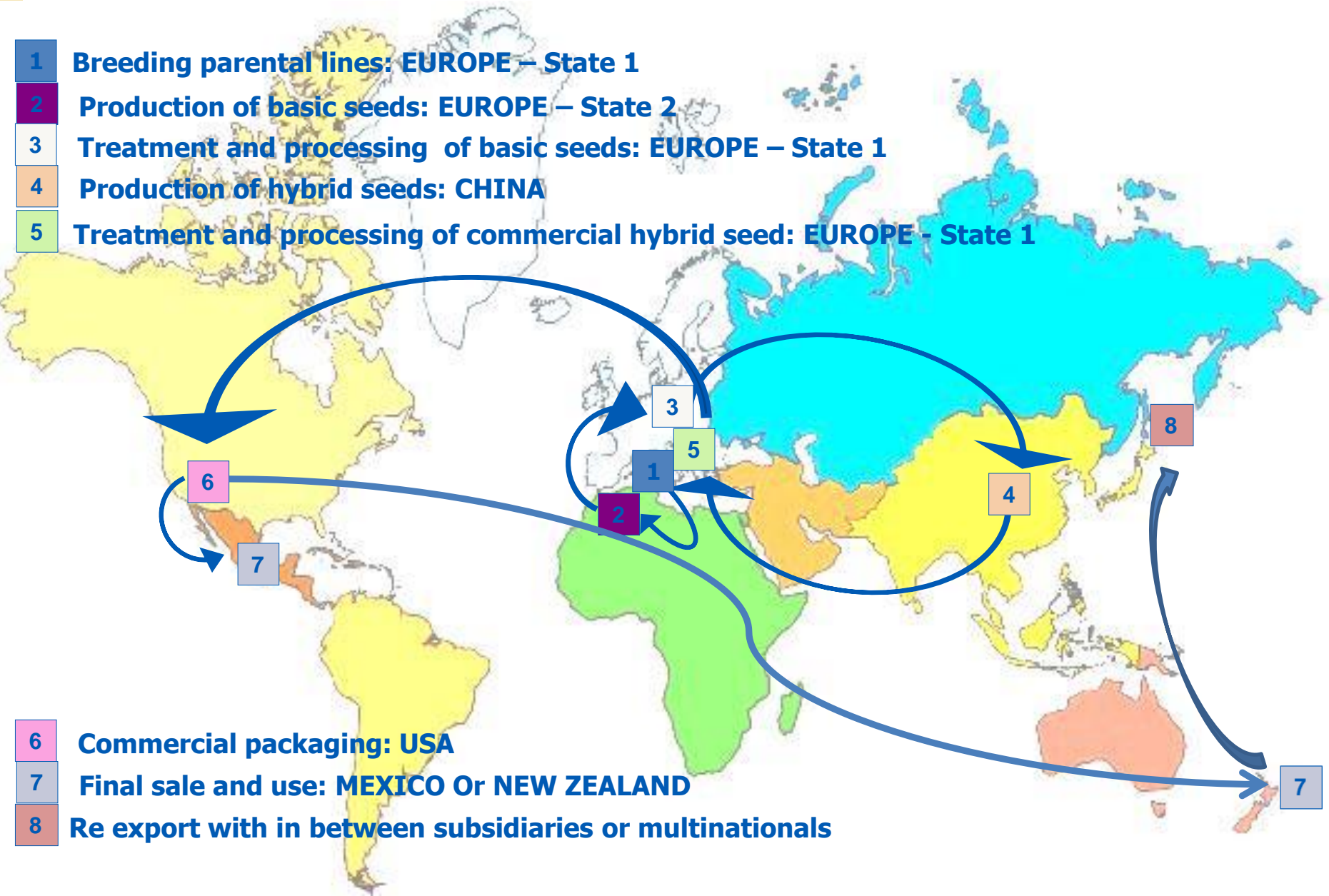
4 Production of hybrid seeds: CHINA

5 Treatment and processing of commercial hybrid seed: EUROPE - State 1

6 Commercial packaging: USA

7 Final sale and use: MEXICO Or NEW ZEALAND

8 Re export with in between subsidiaries or multinationals



# The Value of Traded Seed

Exports of Some Selected Countries, 2012 (US\$ million)

| Africa        | Latin America       | Asia              | Europe             | North America |
|---------------|---------------------|-------------------|--------------------|---------------|
| Algeria – 10  | Argentina – 150     | China – 251       | France – 1804      | Canada – 323  |
| Kenya – 9     | Bolivia – 42        | India – 67        | Germany – 727      | USA – 1531    |
| Morocco – 3   | <b>Brazil – 165</b> | Japan – 145       | Hungary - 385      |               |
| S Africa – 78 | Chile – 388         | Israel – 126      | Italy – 315        |               |
| Tanzania – 9  | Mexico – 203        | New Zealand – 111 | Netherlands – 1583 |               |
| Angola – 8    | Peru – 46           | Thailand – 80     | Denmark – 265      |               |
| Egypt – 3     | Guatemala – 32      | Australia – 108   | Romania – 218      |               |



# The Value of Traded Seed

Imports of Some Selected Countries, 2012 (US\$ million)

| Africa         | Latin America  | Asia            | Europe                   | North America |
|----------------|----------------|-----------------|--------------------------|---------------|
| Egypt – 53     | Argentina – 95 | China – 268     | France – 687             | Canada – 223  |
| Kenya – 25     | Venezuela – 42 | India – 84      | Germany – 700            | USA – 1312    |
| Morocco – 93   | Brazil – 120   | Japan – 231     | Italy – 422              |               |
| S Africa – 101 | Chile – 44     | Turkey – 188    | Russian Federation – 373 |               |
| Tunisia – 12   | Mexico – 355   | S Korea – 111   | Netherlands – 685        |               |
| Algeria – 26   | Paraguay – 57  | Australia – 113 | Spain – 374              |               |
| Zambia – 18    | Colombia – 35  | Israel – 49     | UK – 287                 |               |

# Research samples

- Research is needed to evaluate products, proving performance and adaptation to local conditions
- Value of research seed goes far beyond actual price
  - Needs to consider the value of the knowledge and product being developed
- Research seed is always limited

# Quality Management

## 1. Quality concept evolution

- Quality Control
  - Quality Assurance
    - Quality Management

## 2. Seed is and identity preserved business

1. Value of the seed is associated with Identity
2. Farmers buy clean seed, based in local and Internationally recognized purity standards
3. Quality Management systems allow industry to manage their business



# From Breeding to sales

- Each step in the process has to be monitored and traceable
  - Assure identity
- Quality management required QC at certain points.
  - To assure purity, Identity, quality
- Diseases testing is commonly included at different stages of seed increases
  - Affect productivity, quality and eligibility

# From Breeding to sales (2)

- In order to develop products, industry has developed global networks, to:
  - Assure global and local product adaptation
    - Genetics, traits, chemistry, data, etc
  - Increase efficiencies, by centralizing certain operations (Production, processing, logistics)
  - Increase speed to market, by using global counter season capabilities
- Planning and management are essential for success



Thank You







Back up slides

