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## **Food product innovations with grain legumes: which products for which markets?**

Global overview from MINTEL-GNPD 2010-2019 data

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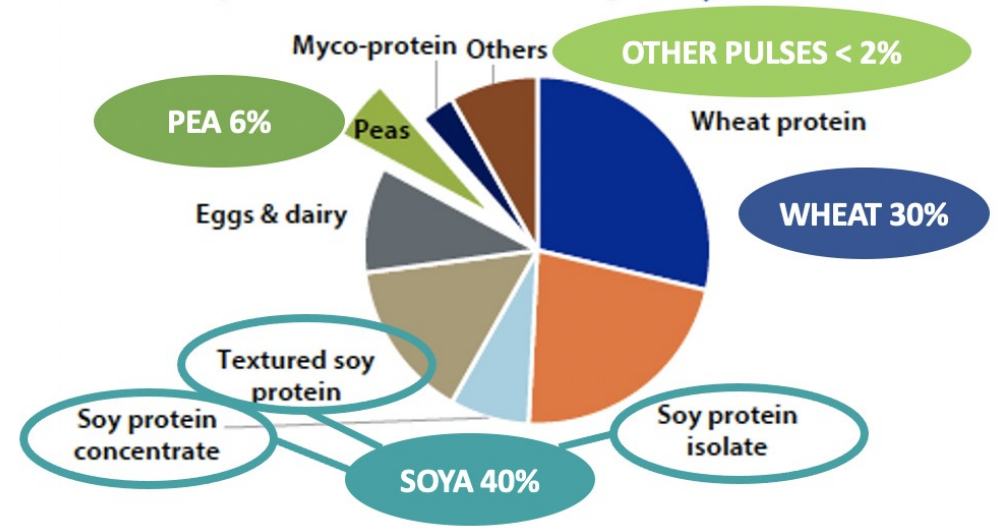
- Very **low legumes consumption in Europe**, as many other countries : 4 kg/year/pers. Europe (see *Weindel et al., 2020*)
- **Consensus for increasing such consumption for healthy and sustainable diets** : from 11 kg/year/pers. for Europe in 2050 (see *Poux and Aubert, 2018*) to 18 k/year/pers. (*Weindel et al. 2019*)
- But **technological lock-in** is still strong, reducing legume uses (see *Magrini et al., 2018,2019*)

**Example :**

Most frequent protein ingredients in Meat Substitutes market;  
MINTEL-GNPD data, global scale 2000-2016  
From RADOBANK 2017 study

**Few food product innovations with pulses compared with major crops**

Source of protein in meat substitutes globally



- To give a **first deep analysis** of the food product innovations with legumes launched on markets
- **Available for all**, especially small and medium firms that do not have sufficient financial resources to get such data analysis (market information asymmetries)
- **Available for public policies**, to identify « motor » markets to be fostered as drivers of the relaunch of legumes in food, particularly for pulses (ie. to reverse technological lock-in).

### **Which are those motor markets ?**

- Do these food product innovations with legumes contribute to healthy and sustainable diet expectations ?
- Do the legume species more and more used are the ones progressing in cultivation to secure supply chains ?
- Which co-evolution with scientific advancement in Food Science and Technology ?





### MINTEL-GNPD dataset

A shopper networks in more than 80 countries to track food product innovation launched on markets

**5 types of Food product innovation for each firm**

New product/ Range extension/ Reformulation / Repackaging / Relaunch

**Market segments**

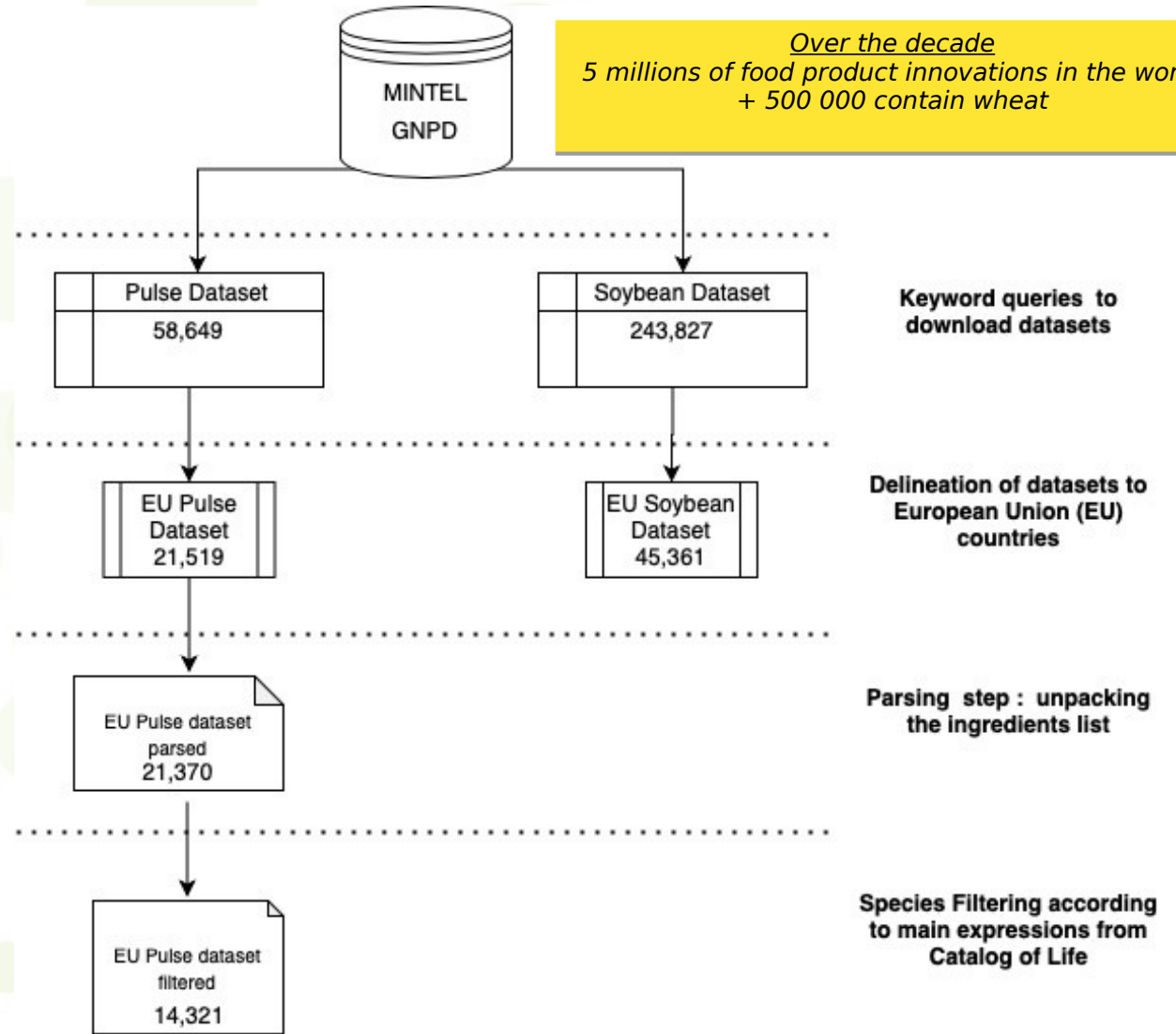
**Claims on the packaging**

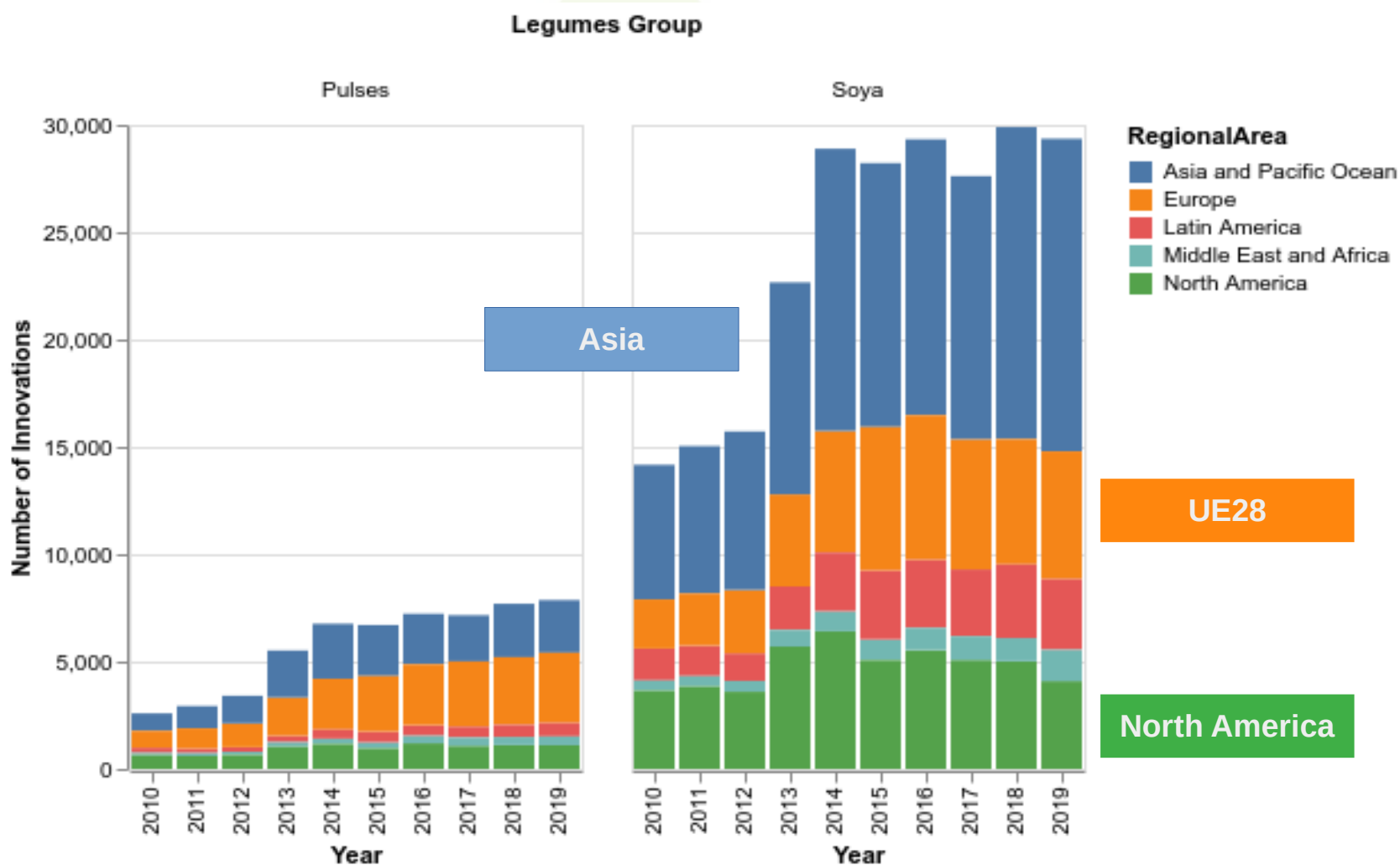
**Retrieval of date at global scale**

**Over 2010-2019**

**Focus on UE28**

**Use of natural language processing (N.L.P) methods to unpack ingredients lists**





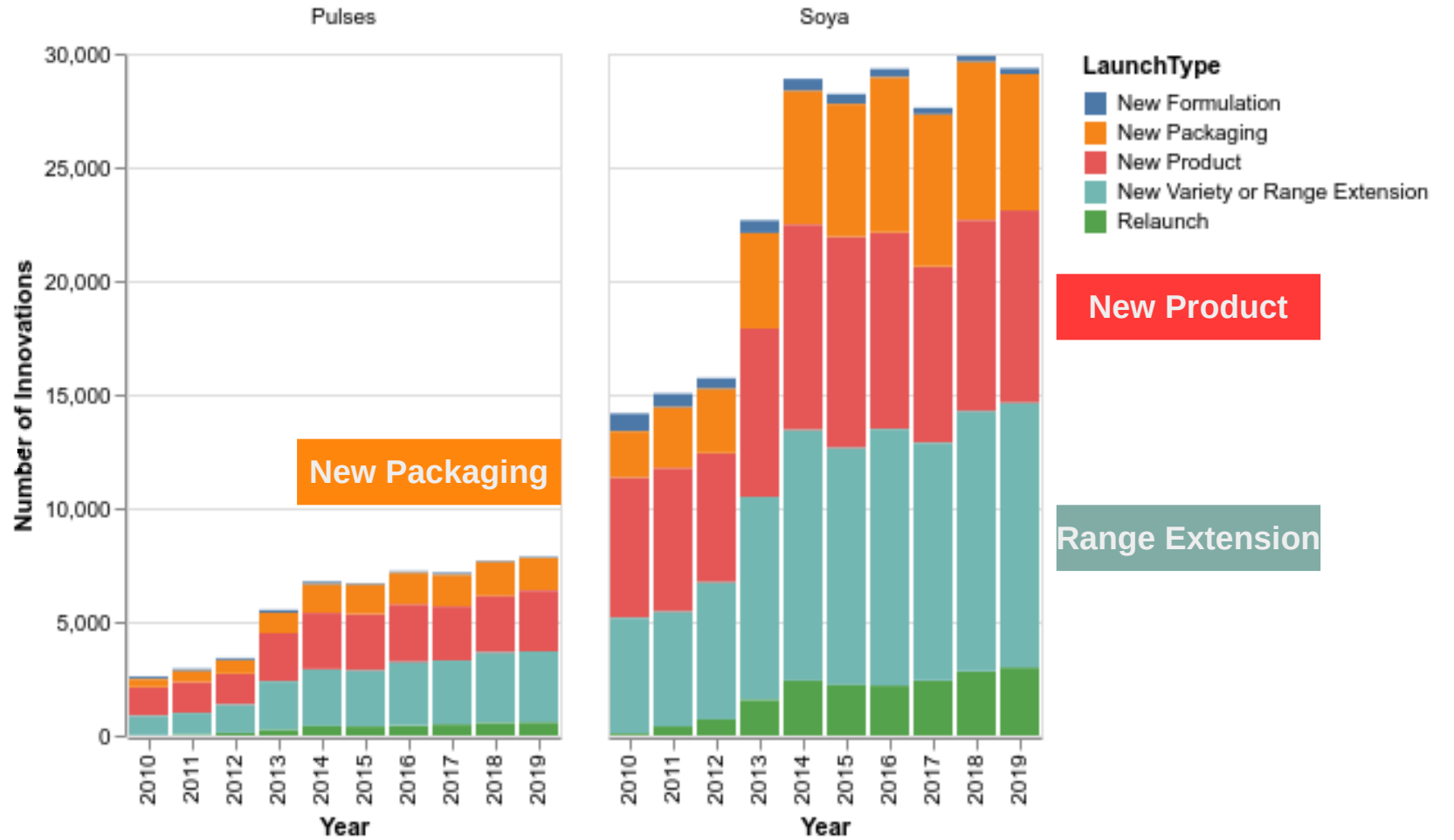
**Food innovations containing soy are more numerous than with legumes, even in Europe.**





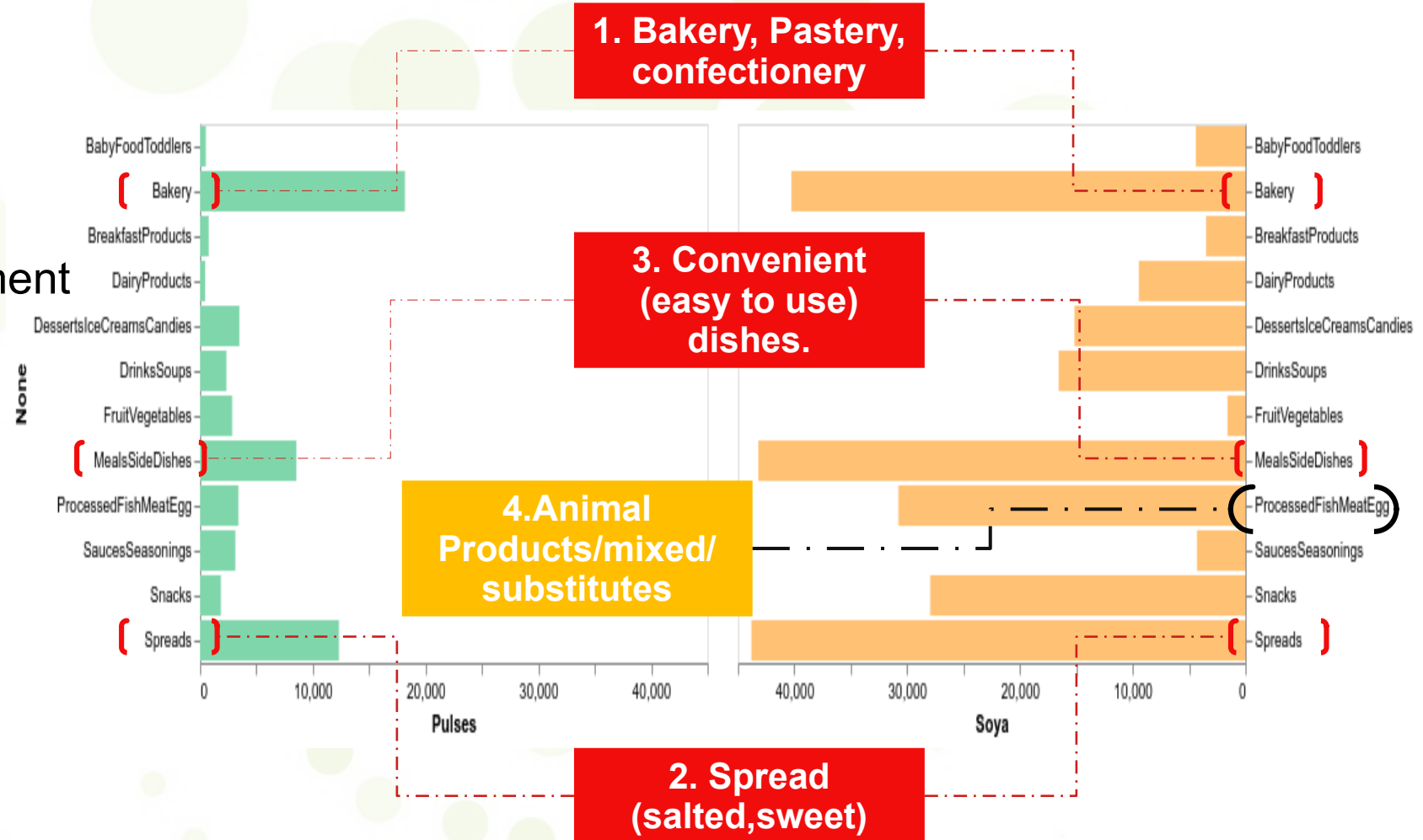
Legumes Group

- First type of product innovations is **RANGE EXTENSION** ⇒ choice of security ?
- More « new » than « renew » a **young dynamic market**





- **Meat substitutes** market segment **little invested** by pulses.
- « Tofu » is part of the « meat substitutes »



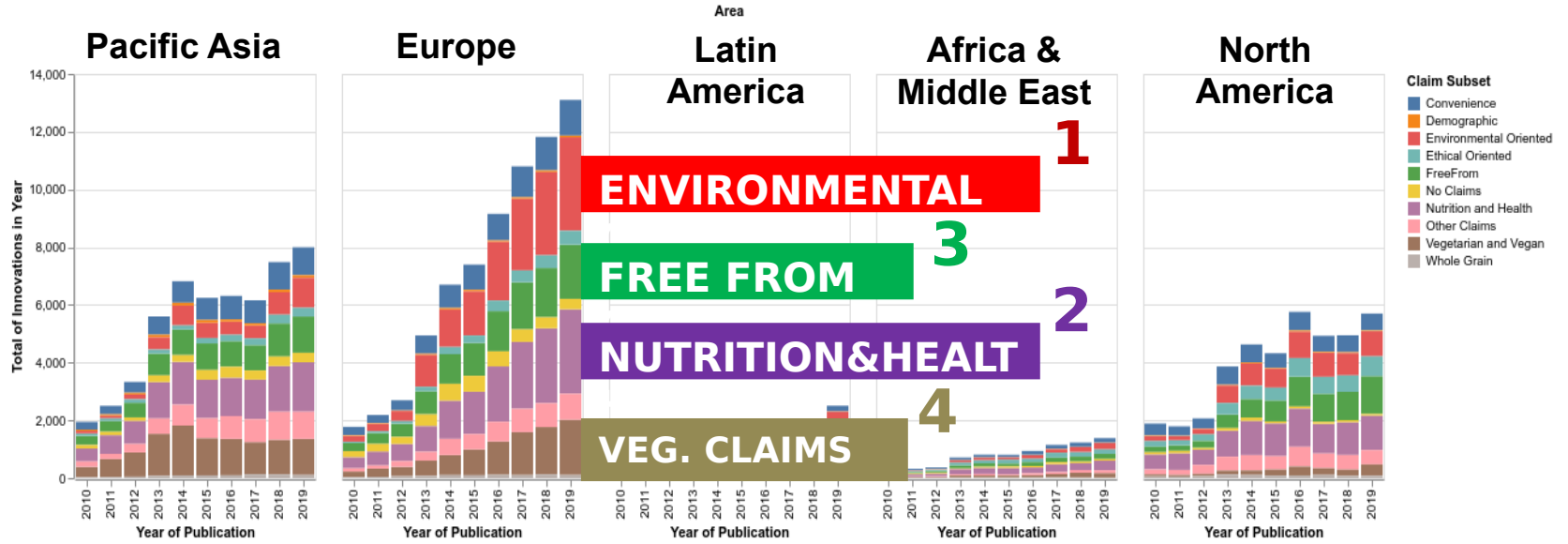




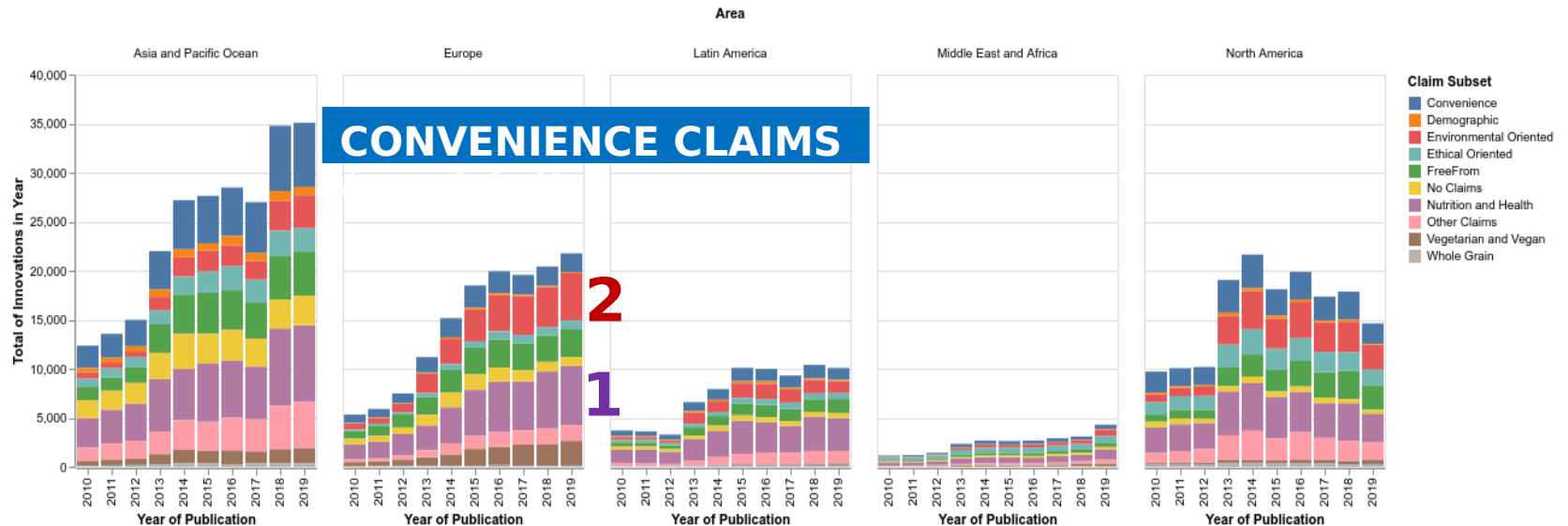
LEGVALUE

- Europe driven by a dynamic of innovation based on sustainability/environmental and healthy issues.

- Environmental dimension is more marked for pulses.

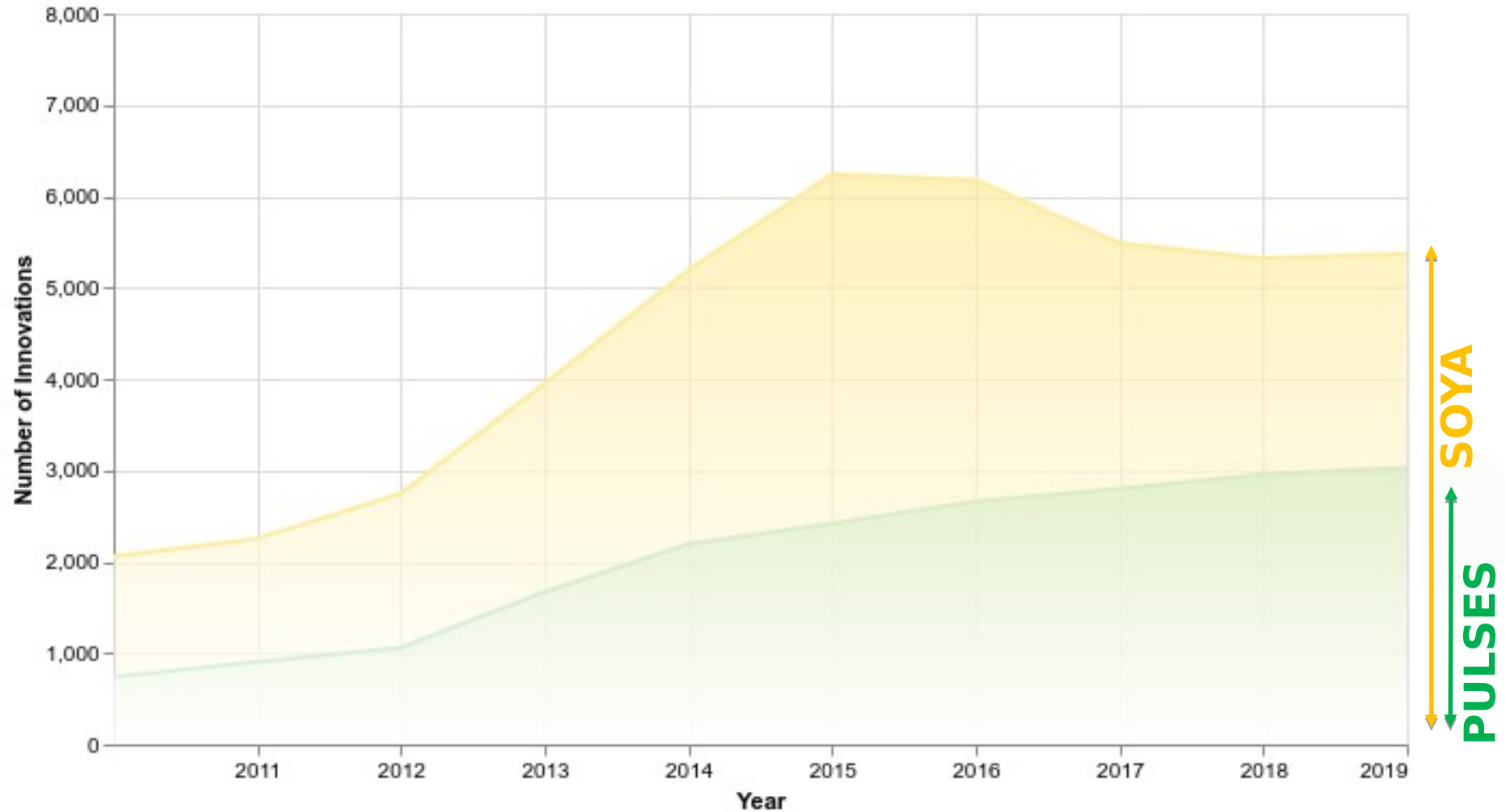


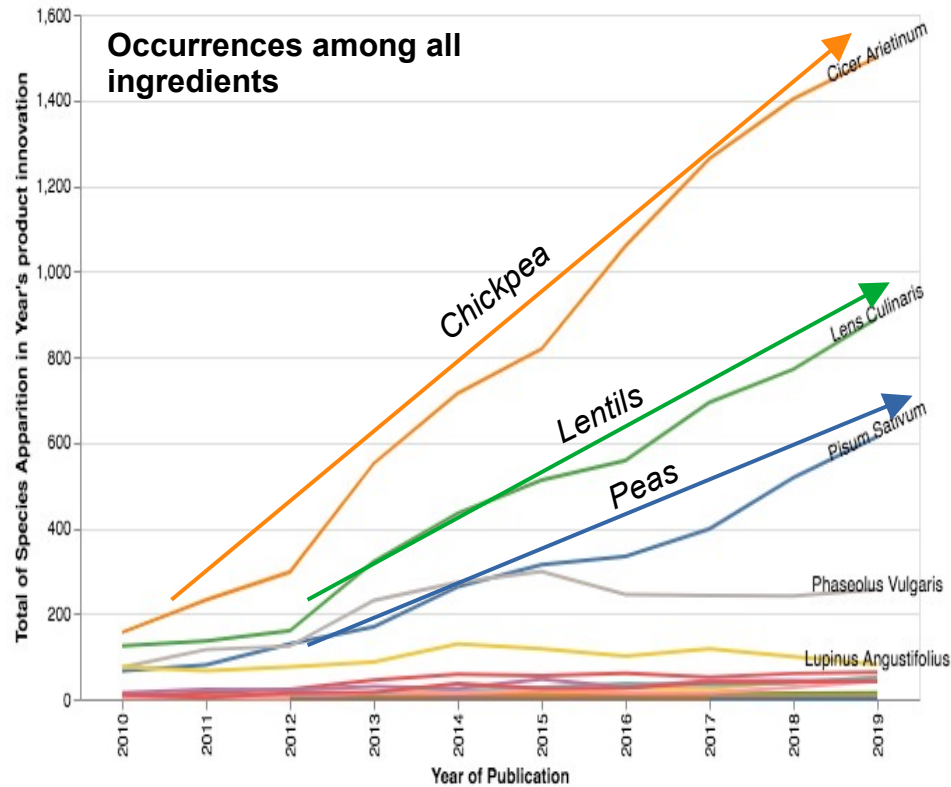
PULSES



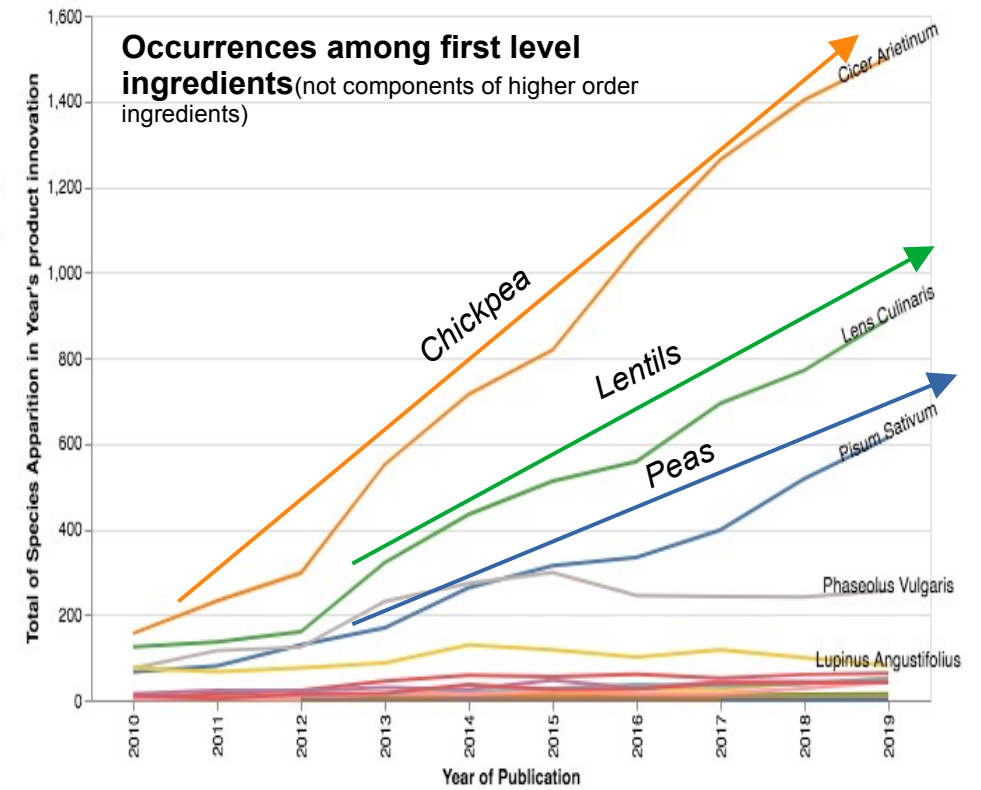
SOYA







- CajanusCajan
- CicerArietinum
- FreshPulses
- LathyrusSativus
- LensCulinaris
- LupinusAngustifolius
- OtherPulses
- PhaseolusCoccineus
- PhaseolusLunatus
- PhaseolusVulgaris
- PisumSativum
- Undetermined
- ViciaFaba
- VignaAngularis
- VignaMungo
- VignaRadiata
- VignaUnguiculata

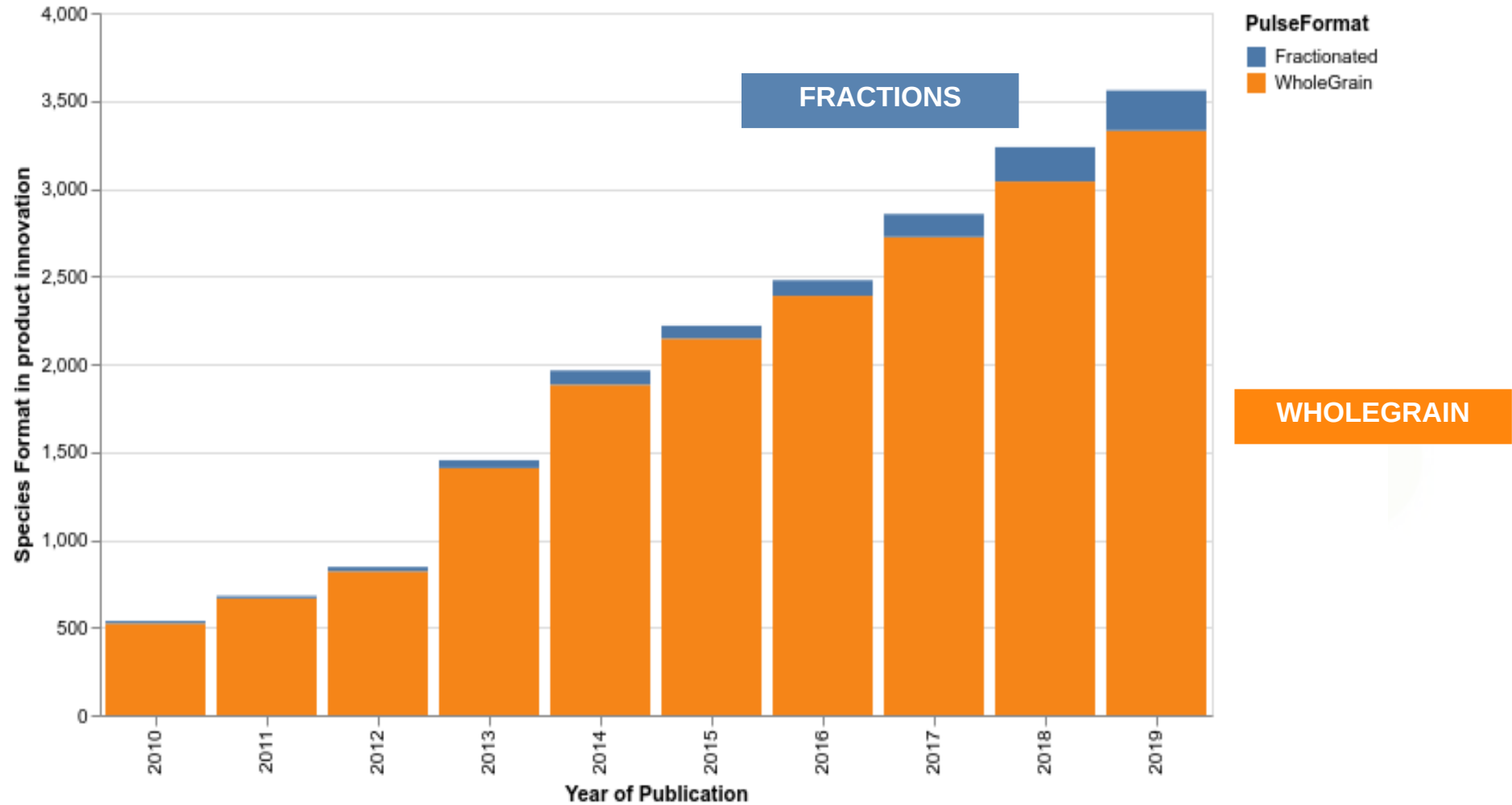


A strong growth of chickpeas and lentils, with their identity as a basic ingredient asserting itself, while peas remain more in a functional ingredient logic.





- Use of fractions or pulses extracts remains minor.



- ♦ **Deepen characterisation of innovatives markets concerning pulses** : compute nutriscore/processing score to help support desirable forms of innovation for sustainability and health,
- ♦ « **Routinise** » parsing methods used and constituted ontologies,
- ♦ **Make a focus on innovations products concerning « bakery, pastery & confectionery »**, it's also a trending topic in FS&T(Food Sciences &Technology),
- ♦ **Analyse sciences/markets co-evolution/Identify innovatives ecosystems** (clusters) based on the identification of firms carrying these innovations.

