



The **Failures** of Genetically Modified Organisms (GMOs): Australia as a case study

Plenary Keynote Address
X International Agriculture Symposium
"AGROSYM 2019"
3-6 October 2019, Jahorina, Bosnia and Herzegovina

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The **Failures:**

- *Social**
- *Political**
- *Legal**
- *Economic**
- *Agronomic**
- *Ecologic**

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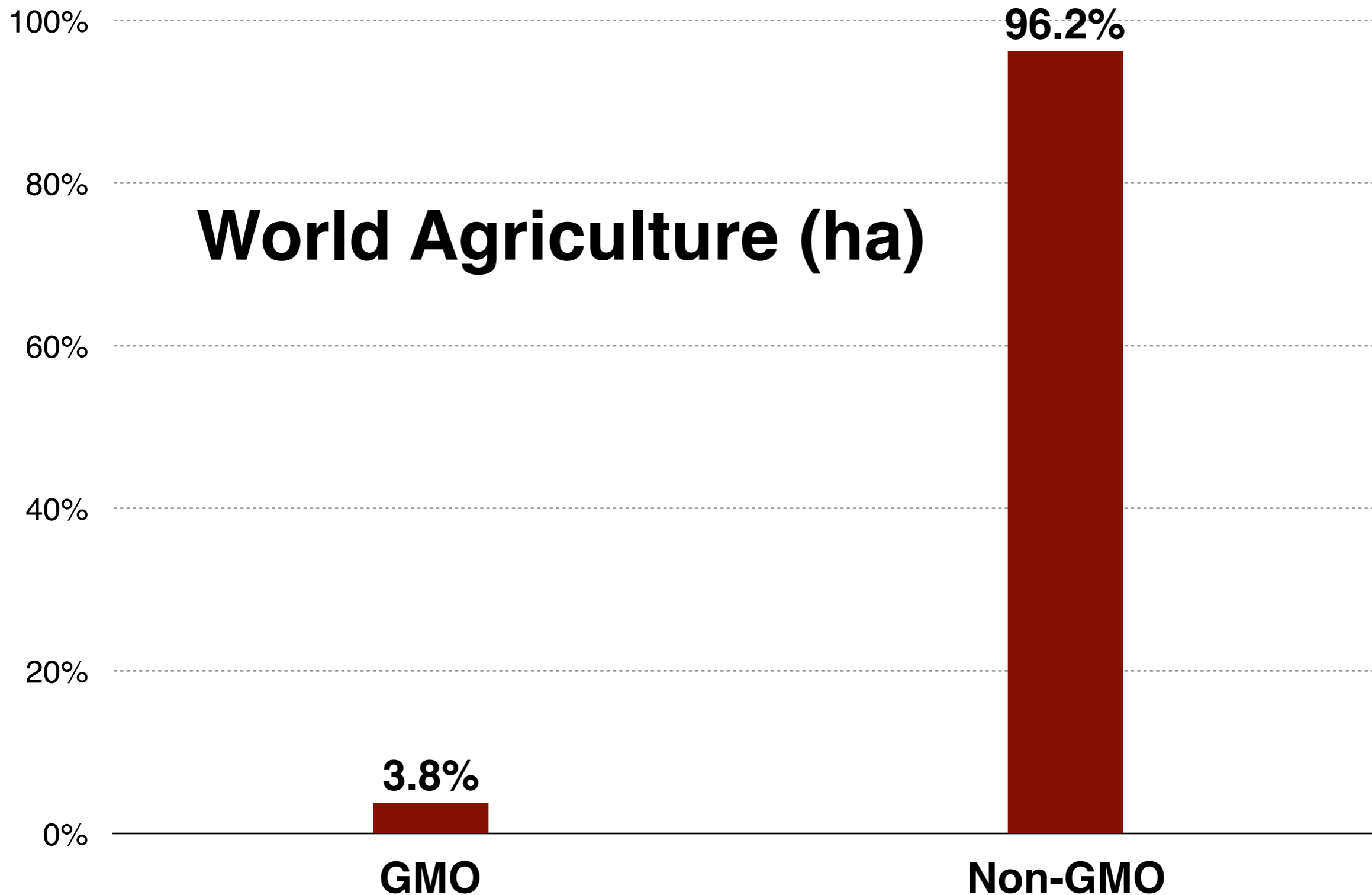
John Paull

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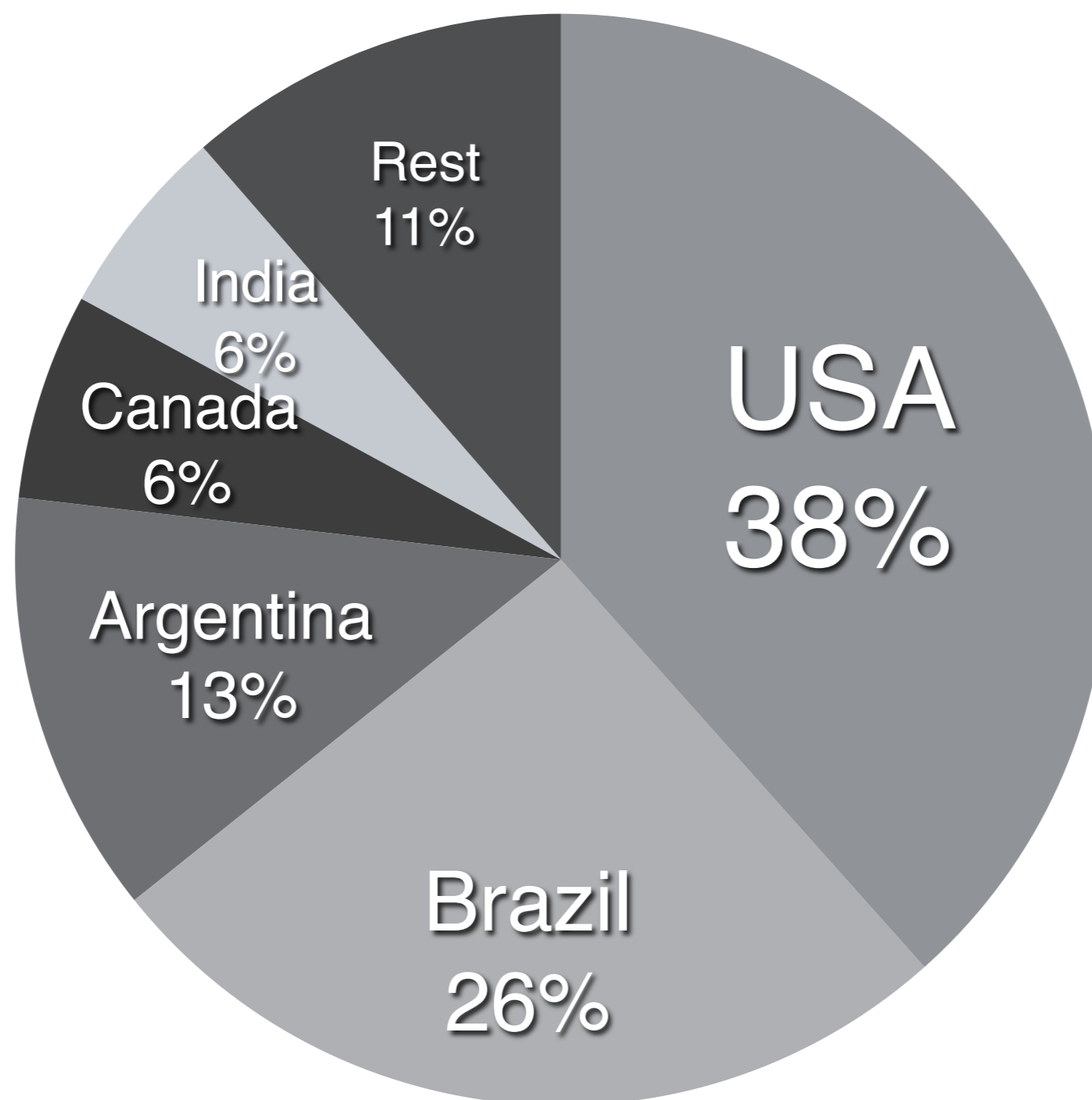
john.paull@mail.com

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Failure: Low uptake



Failure: Low diffusion



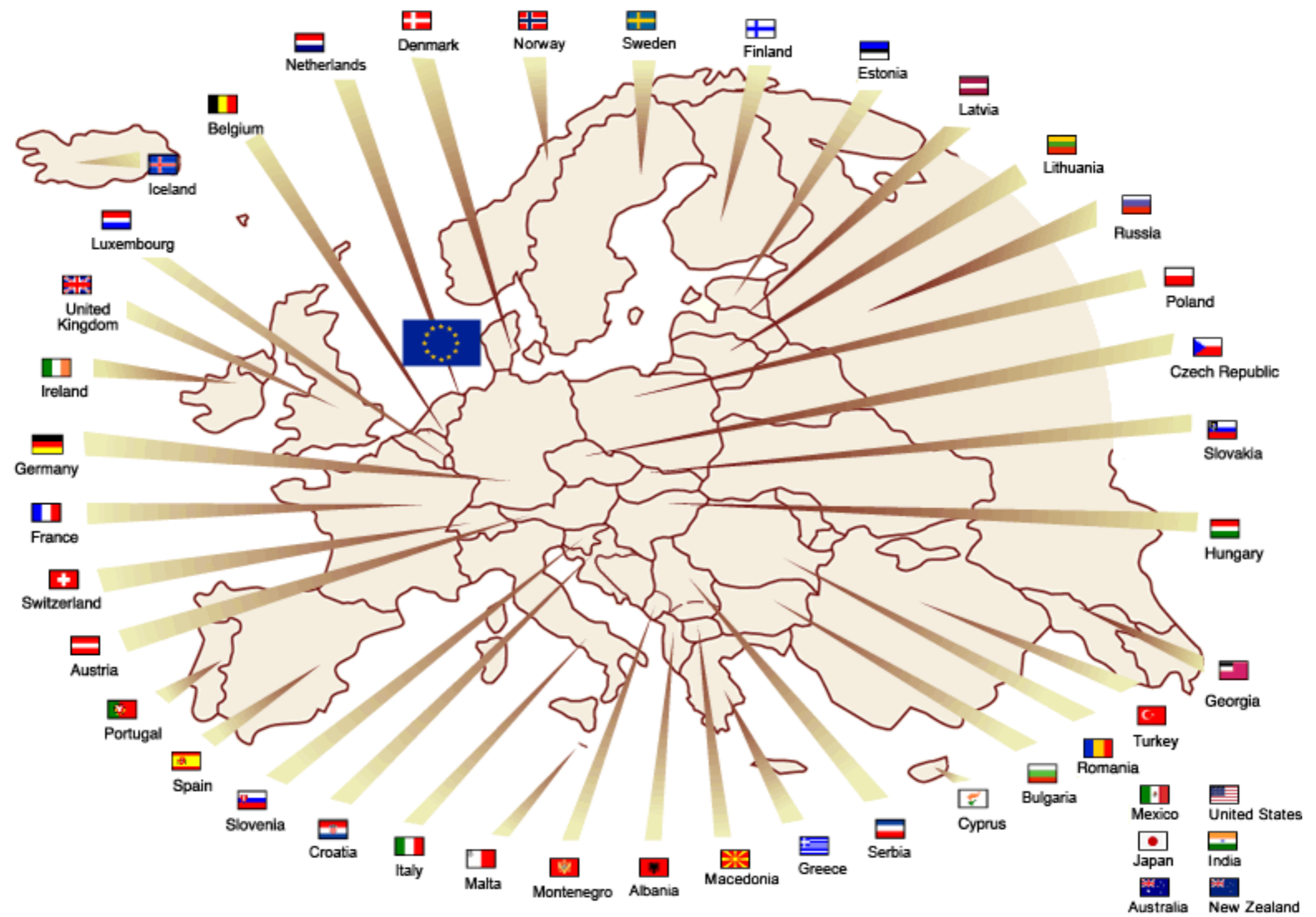
World total = 189.8 m ha

5 countries account for 89% of GMOs



North & South America = 83% of World GMOs

Failure: Rejections



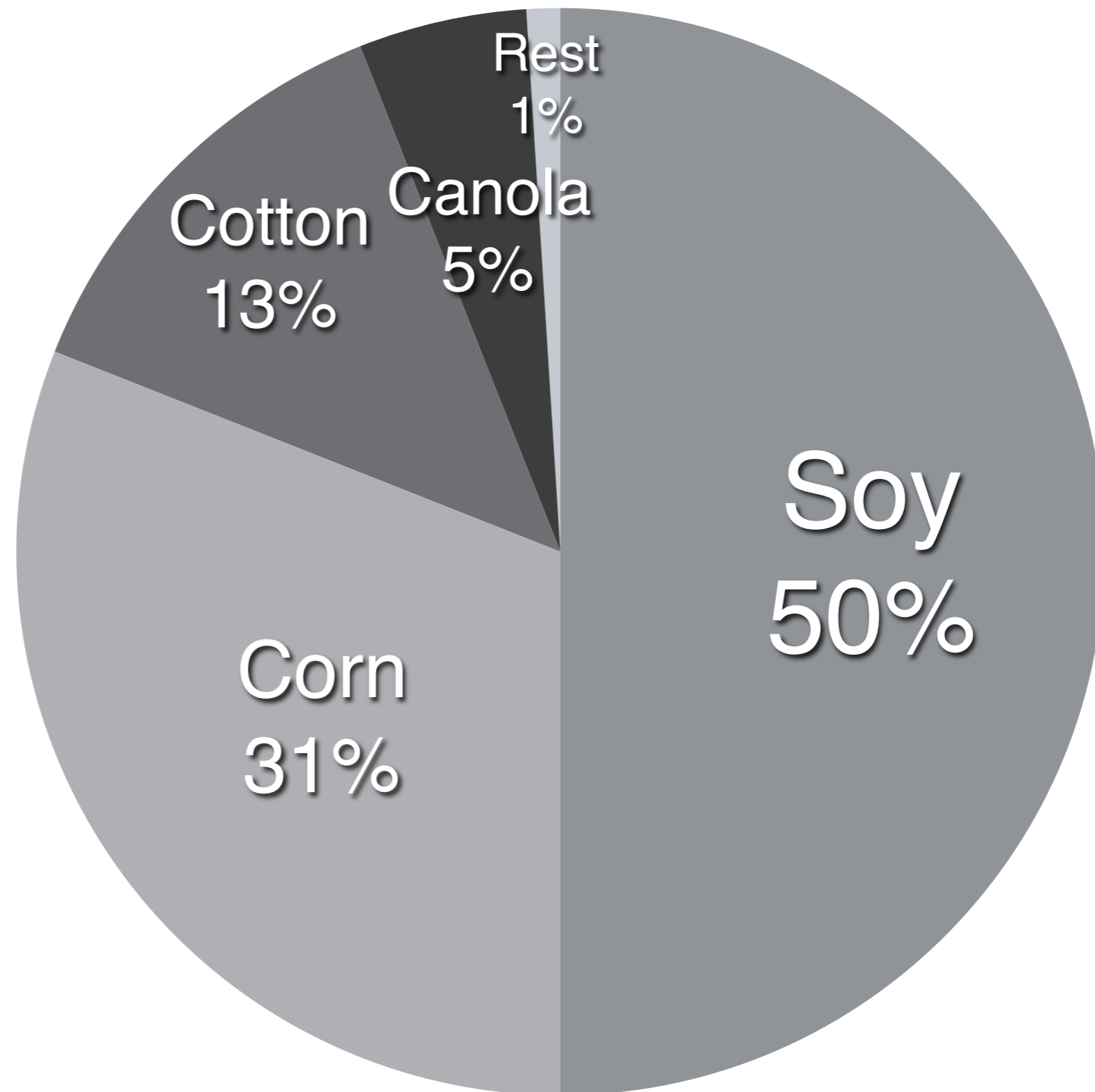
European GMO-Free Regions

www.gmo-free-regions.org

No GMOs
Promote Organics



Failure: Low diversity



Failure: two-faced lie

‘Substantial Equivalence’

The lie that underpins the GMO industry:

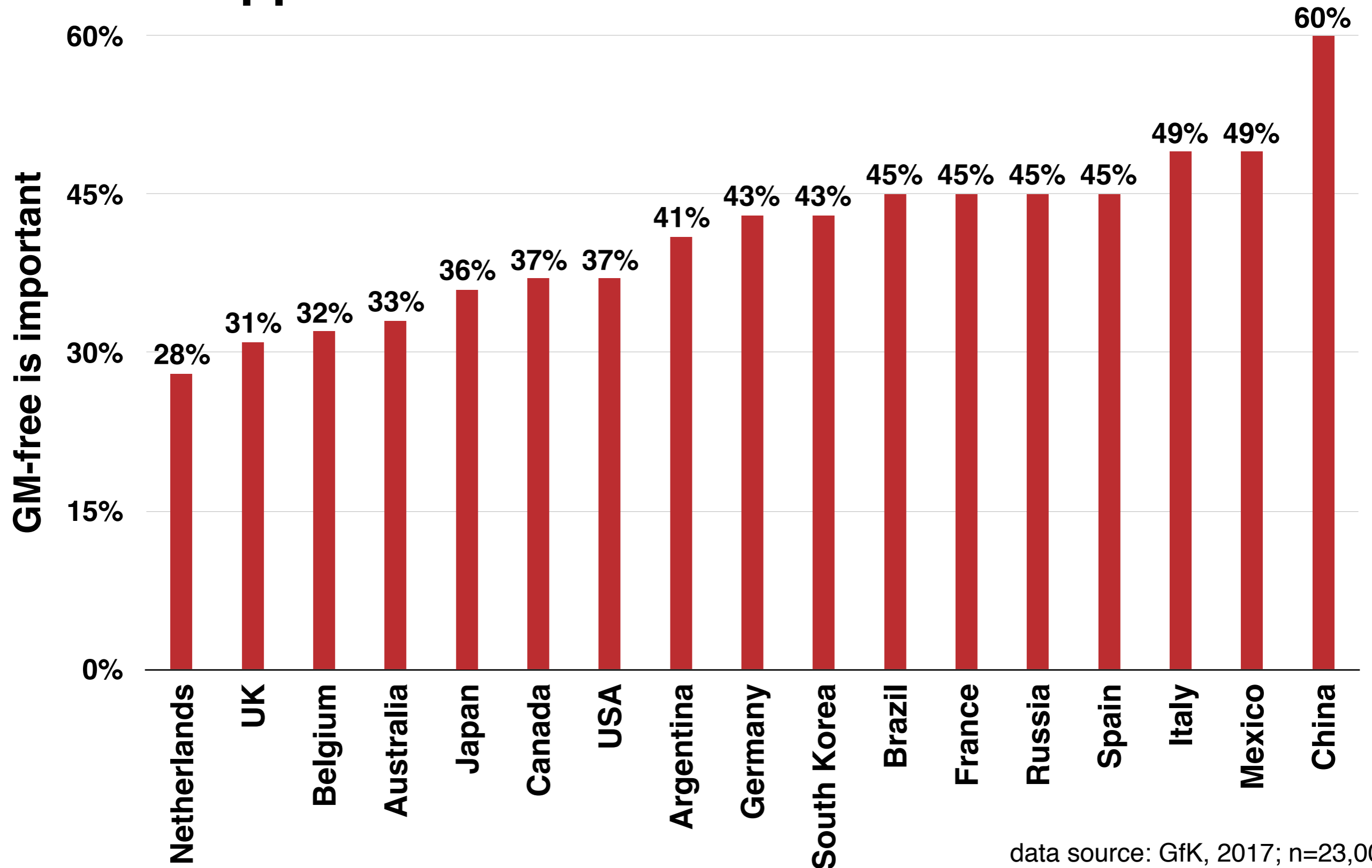


Regulators
“same”

Patent Office
“novel, unique,
different, a real invention”

Failure: No social licence

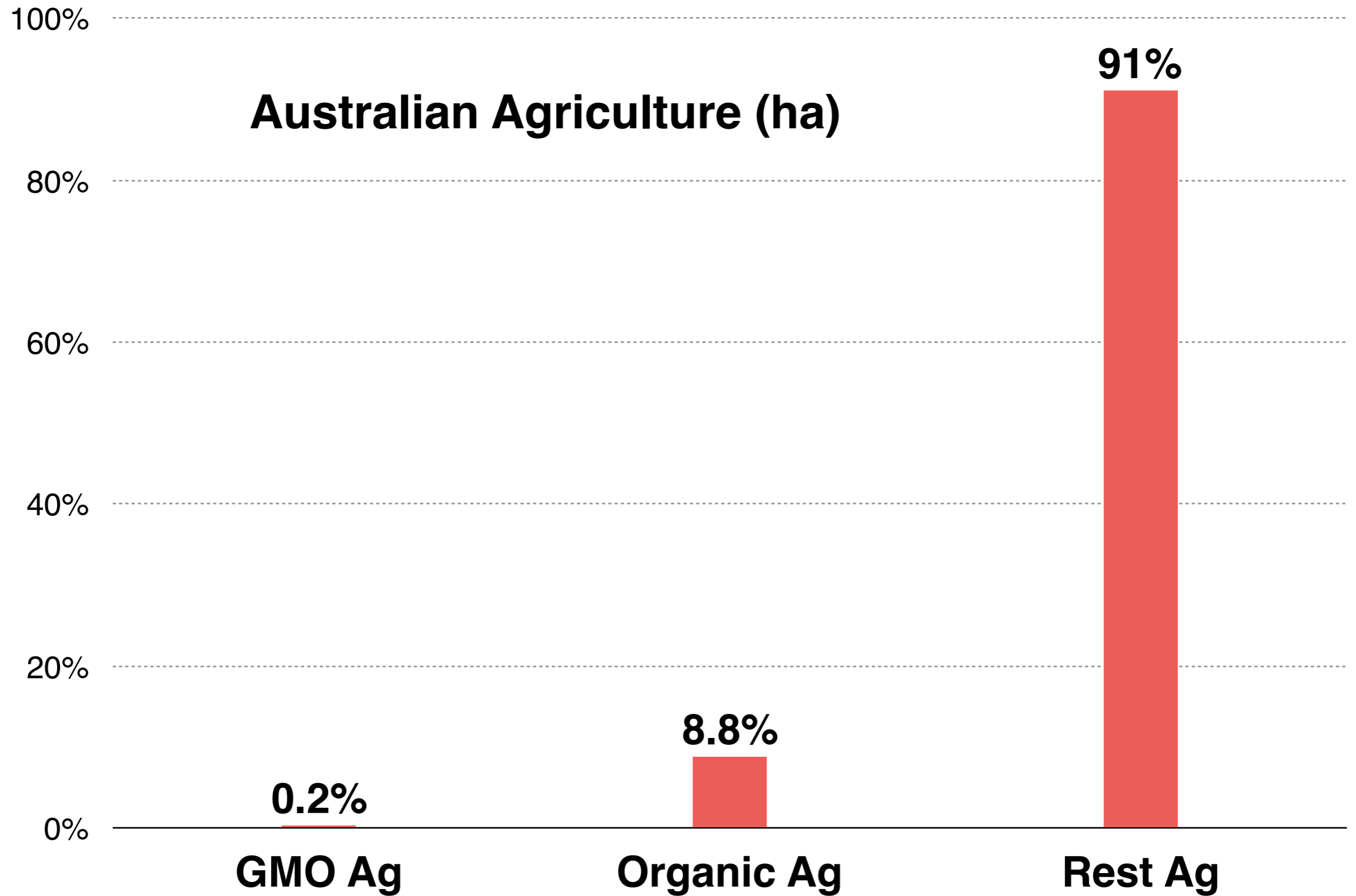
Food shoppers don't want GMOs



Australia



Failure: Low uptake

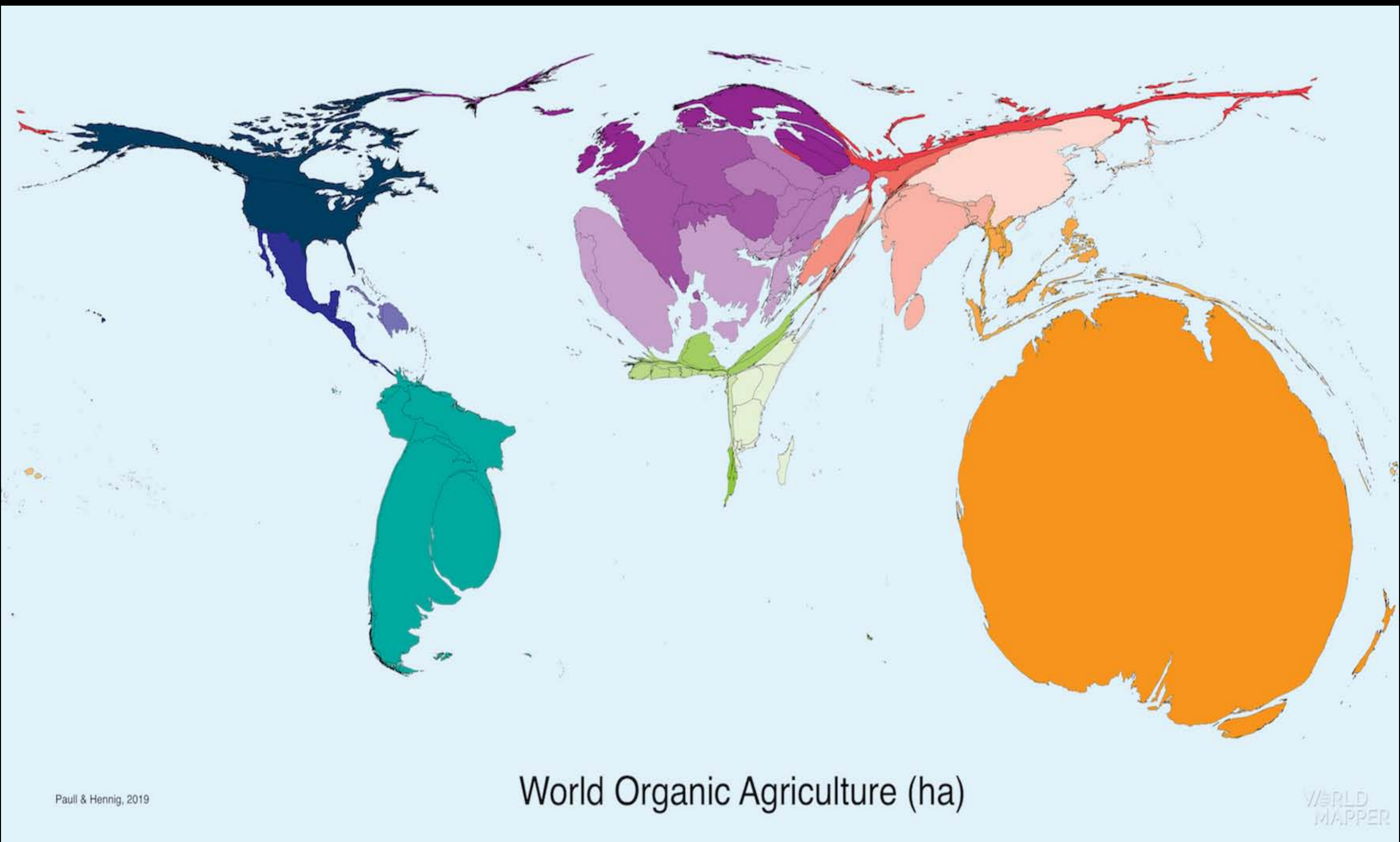




Paull & Hennig, 2019

Australia: 0.4% of World GMO Agriculture (ha)

Paull & Hennig, 2019

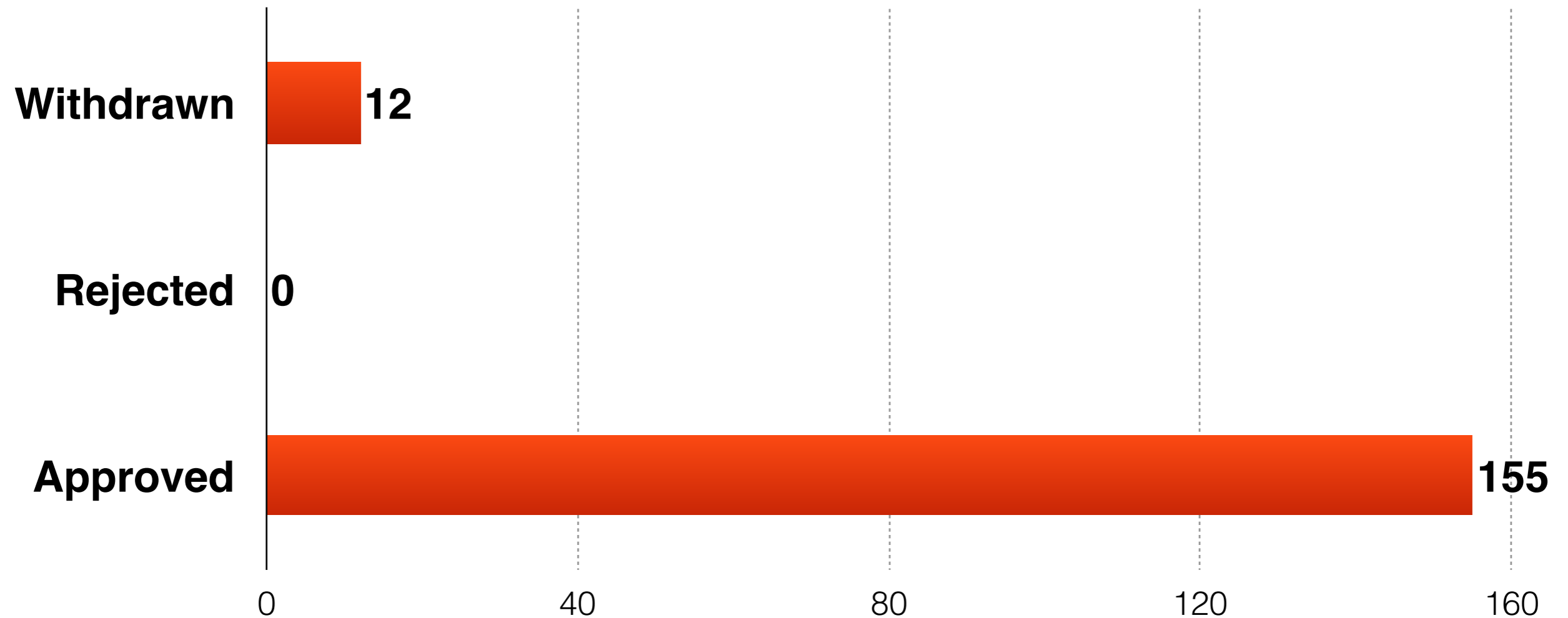


Paull & Hennig, 2019

Australia: 51% of World Organic Agriculture (ha)

Paull & Hennig, 2019

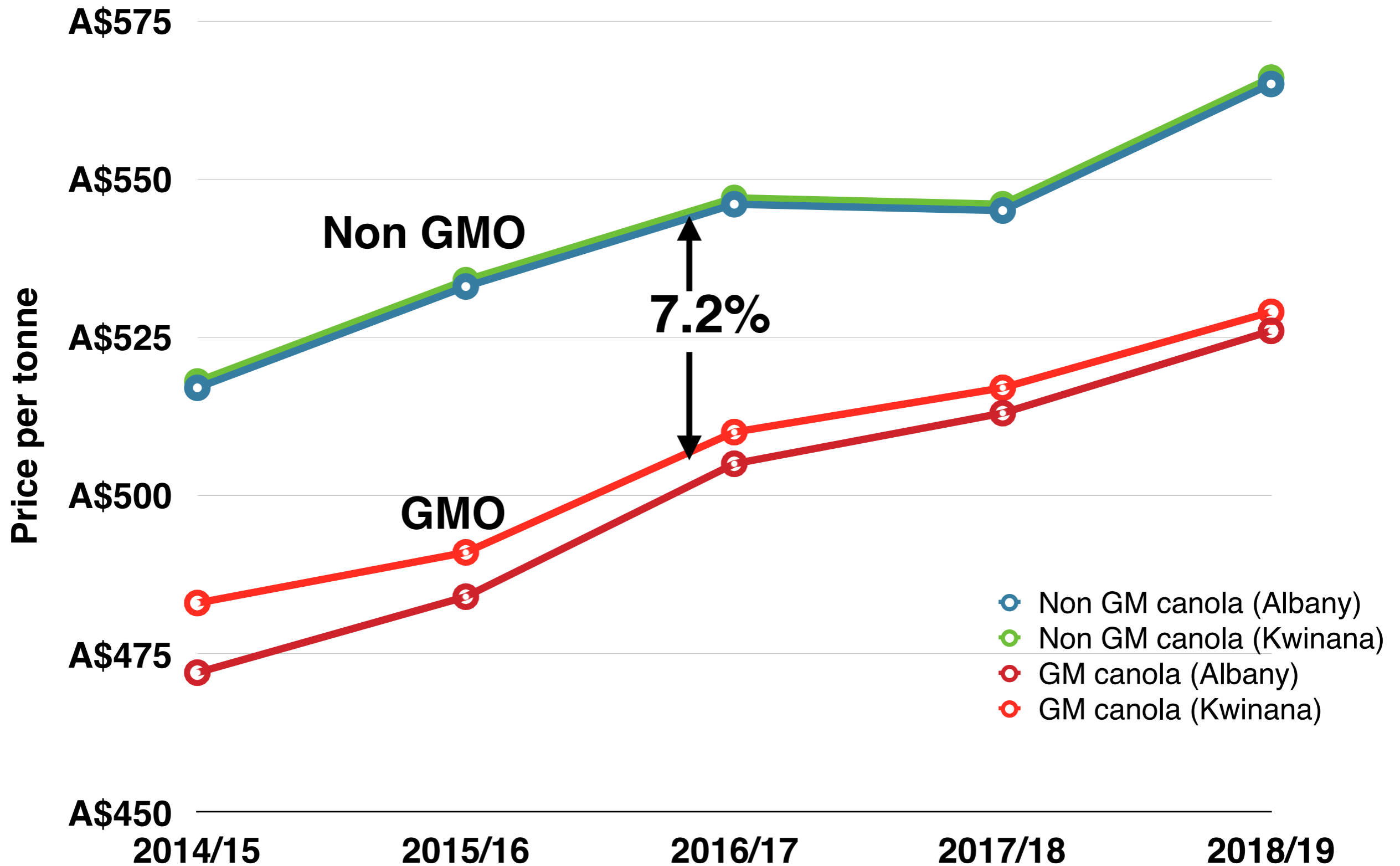
Failure of Regulator = no rejections



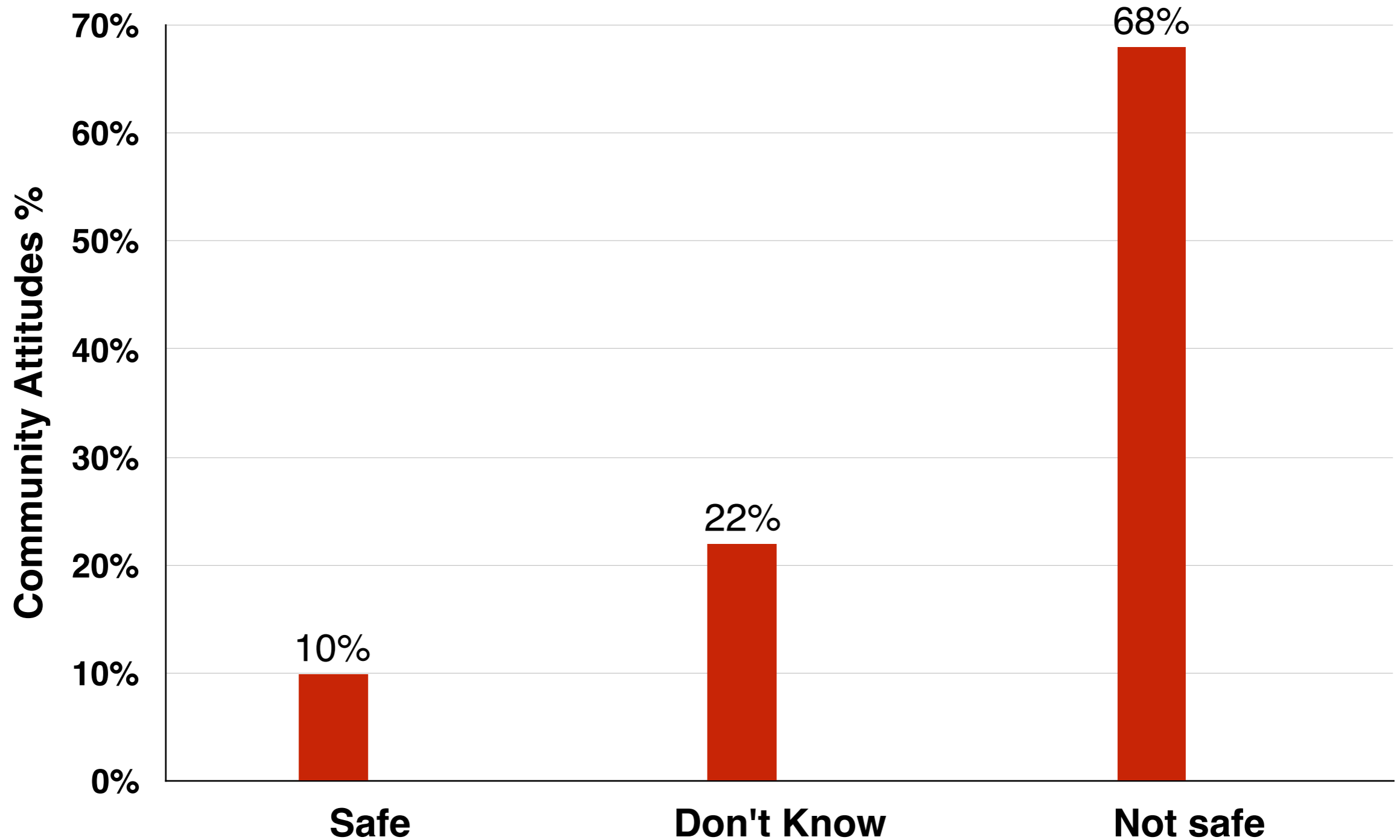
Office of the Gene Technology Regulator
167 Applications (2001-2019)

Failure: Price

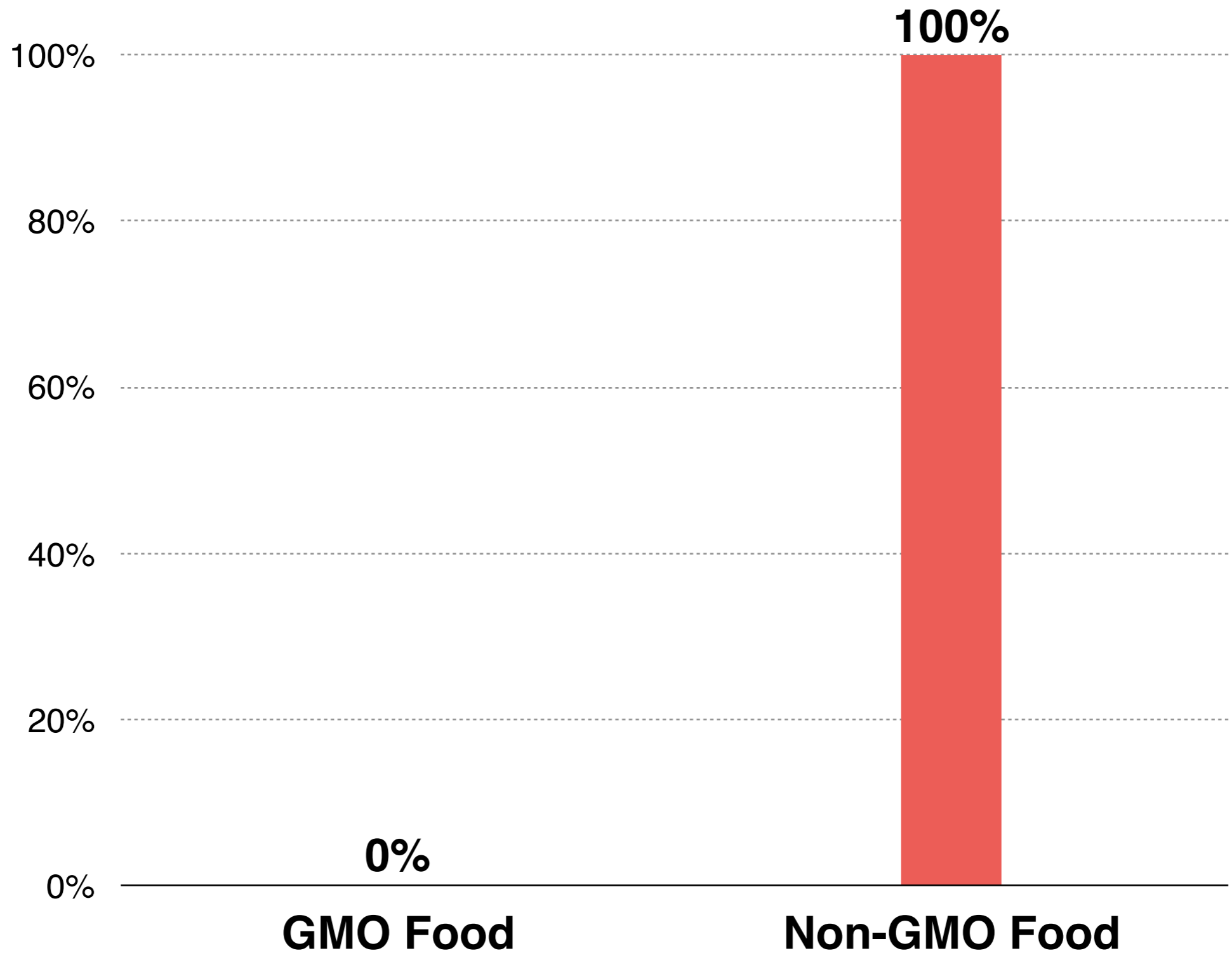
Price penalty for GM Canola = 7.2%



Failure: Social verdict = 'GMOs not safe'



Failure: Supermarkets = No GMO food



Golden Canola™

NATURAL SOURCE OF

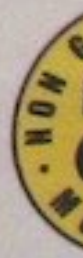


OMEGA 3



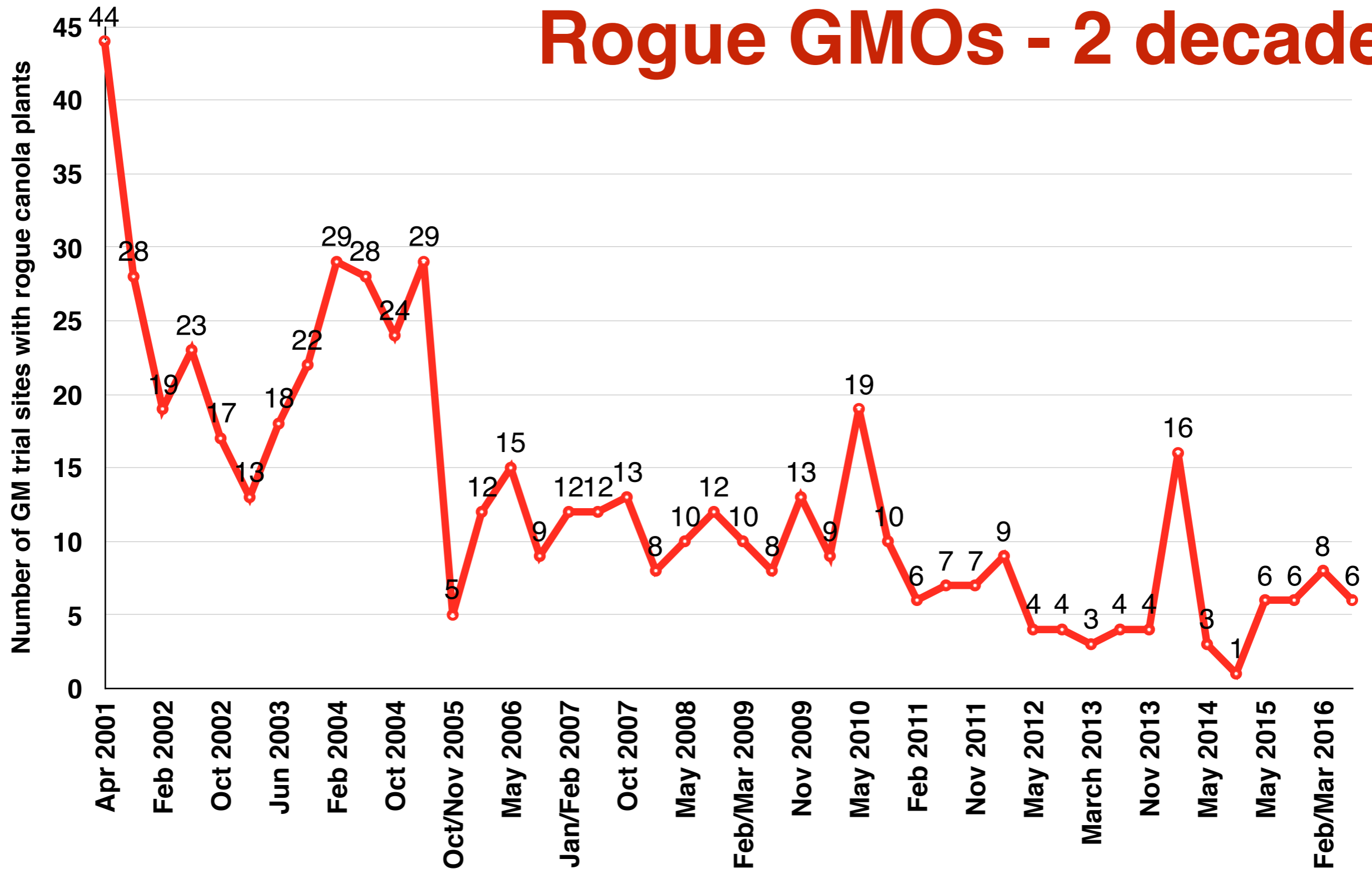
- ✓ Lower in Saturated Fat than Olive Oil^
- ✓ Premium Australian Canola

750ml



75

Failure: Failure to eradicate Rogue GMOs - 2 decades



GMO Trials in Tasmania, 1990s

data source: DPIPWE, 2016 et al

Failure: to segregate

Canola Grade	Marketing Description	Specified Characteristics	Fair Description
CAN	“Non GM Canola”	“Certified GM free to Maximum adventitious presence of 0.9% GMO. Suitable for Human Consumption and Biodiesel production. ISCC EU Certified”.	Canola with GM contamination \leq0.9%
CAG	“Canola”	“Suitable for Human Consumption and Biodiesel production. ISCC EU Certified”.	GM Canola

Ghost GMOs in WA

Failure: to segregate

- ‘acceptable contamination’

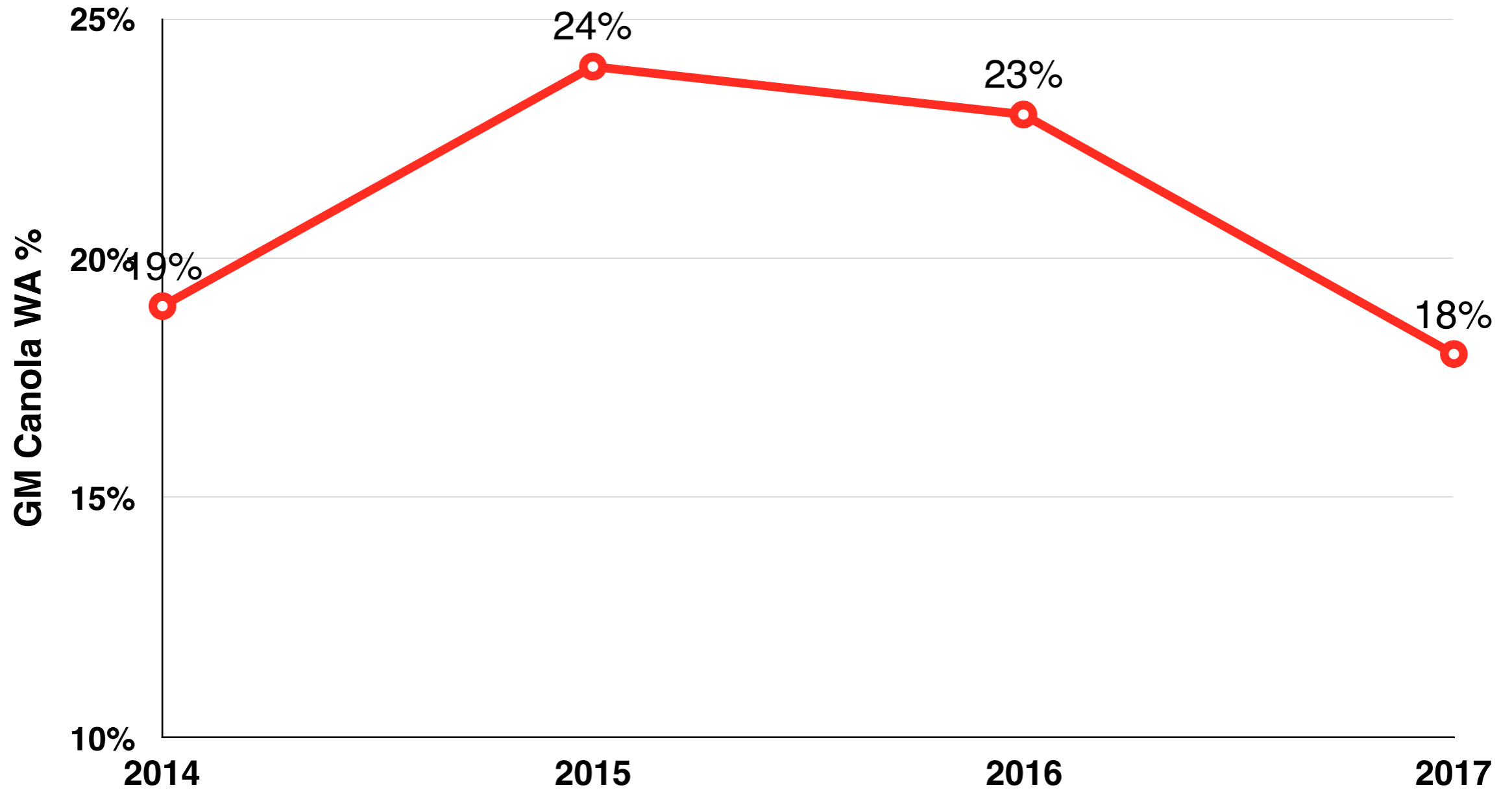
“Non GM canola” ≠ GM free canola

≤0.9% GMO contamination for food & biofuel

≤0.5% GMO contamination for seed

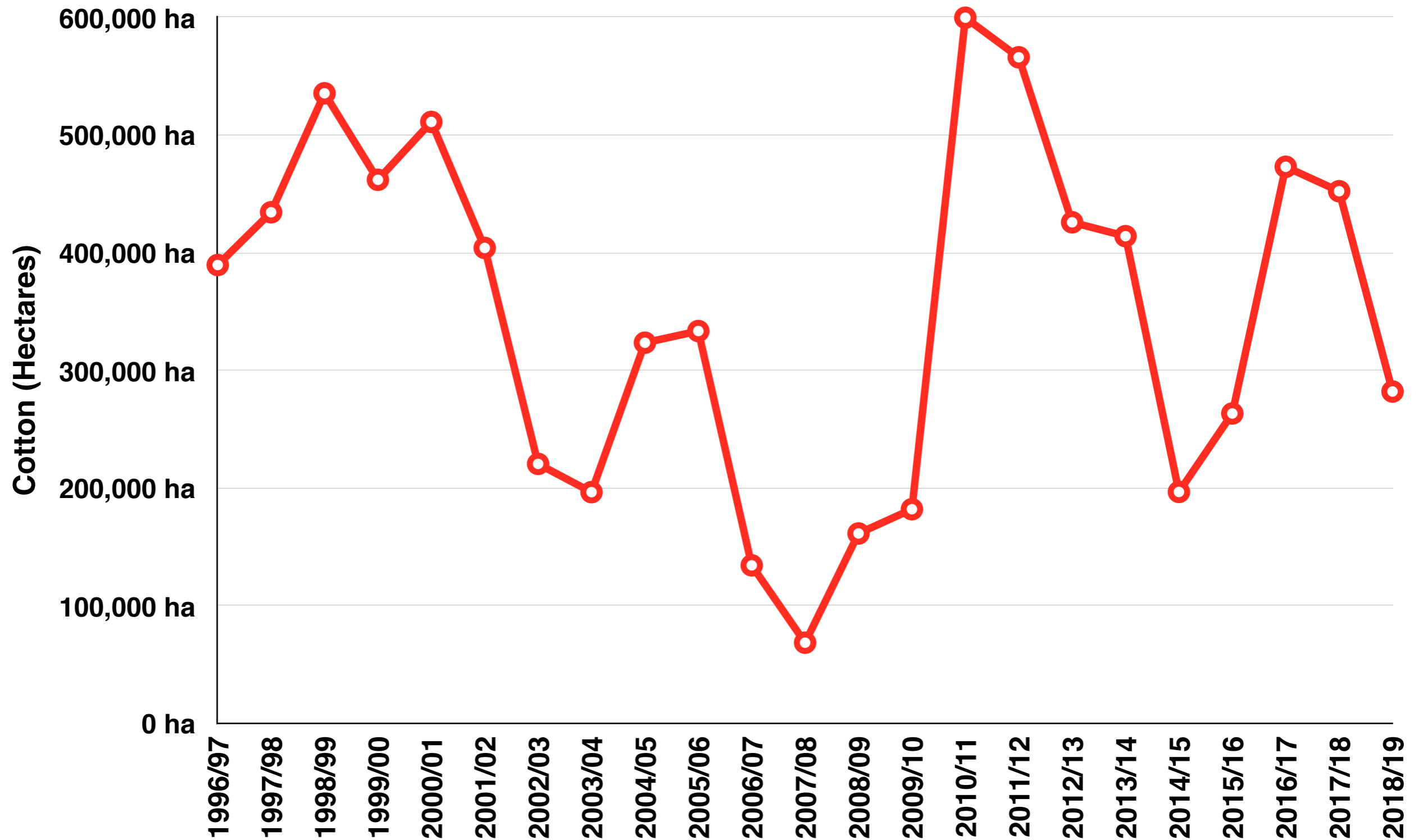
Ghost GMOs in WA canola

Failure: Decline



GM canola in WA %

Failure: instability



GMO cotton - Australia

data source: Cotton Australia, 2019

Failure to protect organic farmers



WA Organic farmers: Steve & Sue Marsh

Australia

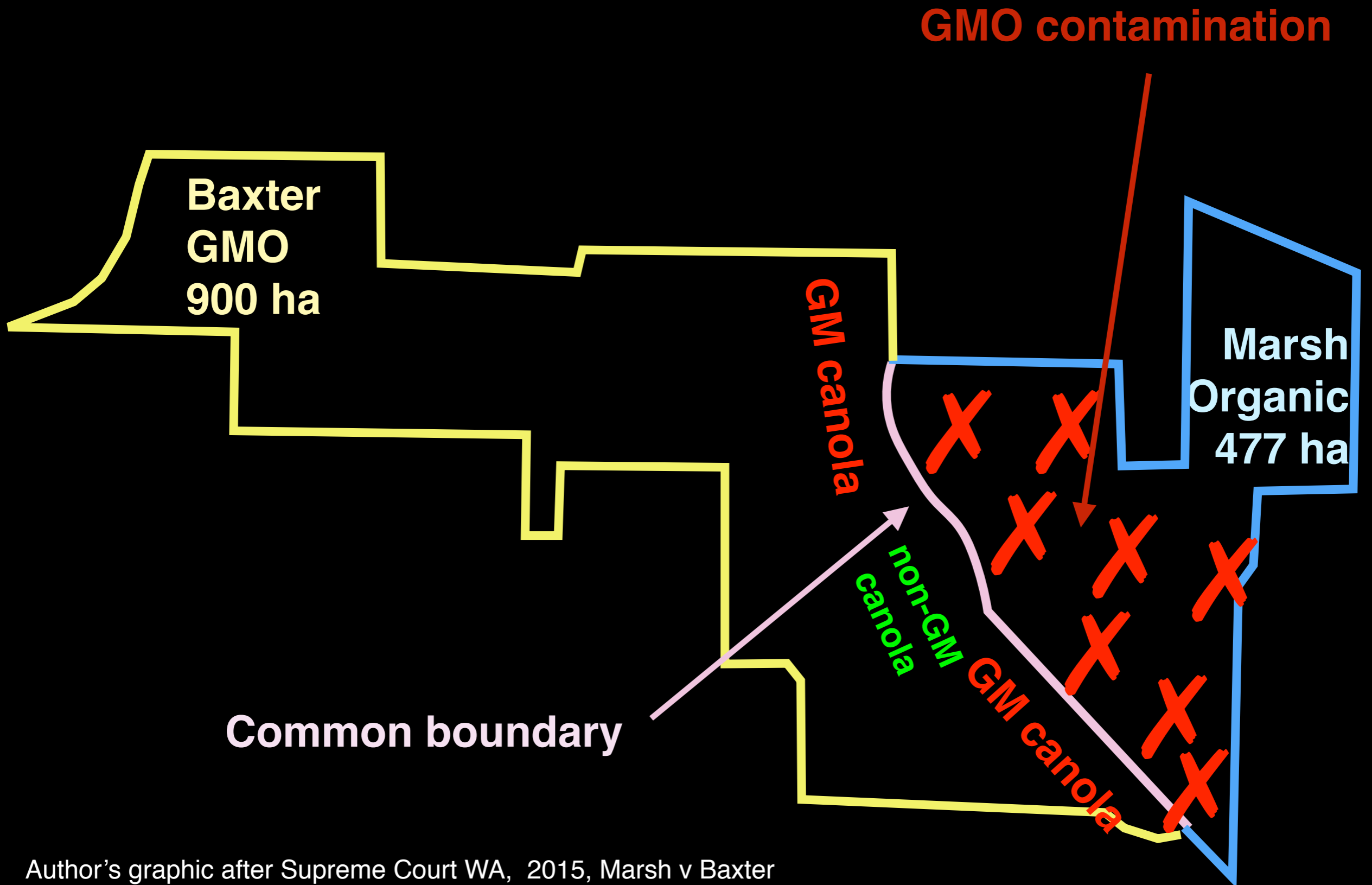
A satellite-style map of Australia and its surrounding regions. The continent is shown in shades of brown and tan, indicating arid or semi-arid terrain. The surrounding oceans are a deep blue, and there are scattered white clouds. A red circle is drawn around the western coast of Australia, specifically highlighting the area around Perth. The word "Australia" is written in large white letters in the top left corner.

Marsh v Baxter

2 adjacent farms in Western Australia

Failure to contain on farm

2010 @ Kojonup, WA



Failure: socially divisive



Marsh v Baxter
Supreme Court of Western Australia, Perth

Failure to compensate GM contamination

Marsh v Baxter
Damages=52,000€
Legal costs=1,200,000€

High Court of Australia, Canberra

Paull, 2015; Martin, 2014; image: J Paull

Failure: No mechanism to compensate for GMO contamination

#	Option	Result
A	Status quo, i.e. Do nothing	The recommended outcome in the Inquiry Report
B	Levy GM industry	Not a recommendation in the Inquiry Report
C	Technology Licence Bond	Absent in the Inquiry Report
D	Non-GM farmer Insurance	Not readily available (or at all) in the marketplace
E	GM farmer Insurance	Not readily available (or at all) in the marketplace
F	Compulsory Third Party (CTP)	Not a recommendation in the Inquiry Report
G	Government pays	Absent in the Inquiry Report

Failure: GMO glyphosate dependency

California couple who developed the same cancer after using Roundup weed killer on their property for 30 years are awarded \$2BILLION in Monsanto trial

- Monsanto must pay \$2 billion to Alva and Alberta Pilliod, a California jury ruled Monday
- The California couple both developed non-Hodgkins lymphoma
- For 30 years, they use Monsanto's Roundup weedkiller
- Now, their ongoing lawsuit is one of many to claim that the chemical glyphosate

- **3 recent cases lost by Bayer**
- **20,000 more plaintiffs**

Failure: Food as multinational patents versus *Food as commonwealth*

**Bayer
Monsanto
Syngenta
Dupont
Dow
BASF**

Failure: Push to deregulate new GMOs & techniques



The push to deregulate some GMOs

Gene Technology Amendment (2019 Measures No. 1) Regulations 2019

I, General the Honourable Sir Peter Cosgrove AK MC (Ret'd), Governor-General of the Commonwealth of Australia, acting with the advice of the Federal Executive Council, make the following regulations

These regulations:

- * water down the definition of GMOs
- * have Australia out of harmony with the world
- * risk damaging Australian food and agriculture

Vote in the Senate to disallow: 13 November 2019

Failure: GMOs as invasive species

- * non native**
- * ability to spread**
- * can do harm:**
 - environment**
 - economy**
 - health**
 - “the way we live”**

“Nature has been moving DNA around for thousands of years ... You can't control it. You can't put a fence around it and say that's where it stops”

Percy Schmeiser





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Questions...

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Abstract

Genetically modified organisms (GMOs) have failed on many levels including: social, political, legal, economic, agronomic and ecologic. After three decades of promotion, promises and contention, 3.8% of global agriculture is GMO agriculture. Only 24 countries grow GMOs commercially. Four countries of North and South America (USA, Canada, Brazil and Argentina) account for 85% of the global GMO hectares. Four crops (soy, corn, cotton and canola) account for 99% of GM hectares. Despite the veneer of social validity that regulators cast, the GMO sector has failed to gain a social licence. Where GM labelling is required, food manufacturers avoid GM ingredients. GMOs have failed to gain price parity with their non-GM counterparts, and they attract price penalties. Segregation of GMOs and non-GMOs has failed (with a tolerance of 0.9% GM contamination in so-called non-GM canola). GM has failed the coexistence test with GMO growers contaminating neighbouring farms. GMOs are a biosecurity fail, with test plots of GM canola planted in the late 1990s still monitored two decades later for rogue canola plants. Most GMO crops are glyphosate dependent. Glyphosate is globally subject to massive litigation claims and awards, and is implicated in the causation of multiple cancers. Mechanisms for compensating farms contaminated by GMOs are lacking, and the GMO industry has taken no responsibility for contaminations. GMOs are a threat to the organic sector and the maintenance of certification and price premiums. Most countries (88%) do not grow GMO crops. This paper considers the global experience of GMOs and the Australian experience as a microcosm of the global experience and as a case study.

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Agrosym
Termag Hotel
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image: J Paull