

IP and innovation in agriculture

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IP on plant related inventions

The importance of IP

- The development of plant innovations:
 - Requires the investment of substantial time and resources: a GMO trait requires on average 136 million US and 13,1 years to develop;
 - Requires strong and effective IP (break-even point).
- Effective IP enables innovation, as well as the diffusion down the value chain of high quality products.
- Safeguarding the development of plant innovations, new varieties and traits, requires:
 - Effective plant breeder's rights; AND
 - Effective patent rights.
- Seed companies, tech developers and farmers are best suited by a balanced, all encompassing IP system.

Effective patents

- The need for patents:
 - Plant innovations consist of varieties and traits;
 - A patent can protect a trait, used in a multitude of plant varieties, plant breeder's rights cannot;
 - The process and the resulting trait in plant varieties containing the altered gene can be patented;
 - Modern plant breeding is largely dependent on biotechnology to develop more efficient and environmentally friendly varieties.
- > Inventions which comply with patentability criteria should be patentable;
- Stable and predictable patent framework for all biotechnological inventions under Directive 98/44 EC.
- Increased use of trade secrets could undermine the social contract.

Patents on native traits (1)

- Development of a native trait:
 - Native traits: traits obtained from a natural germplasm pool of species;
 - Most native traits cannot be used as such in commercial breeding;
 - Challenge is to identify a promising source of an (exotic) trait and then to transfer it to a modern variety (new techniques make the transfer as technical as genetic modification);
 - Identification and improvement of these traits requires a lot of resources;
 - A native trait cannot be protected through plant breeder's rights.
-> A native trait which complies with patentability criteria should be patentable.
- Between 95 and 13, EPO only granted 71 patents with a claim directed to a plant obtained by an essentially biological plant production process.

Patents on native traits (2)

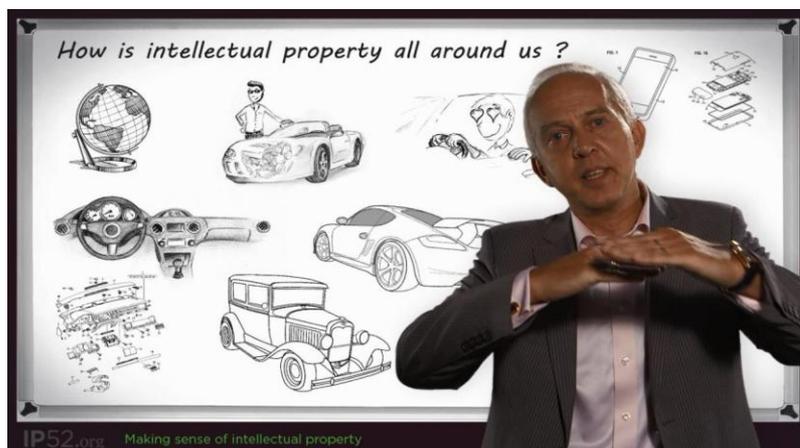
- EBA Tomato II/Broccoli II decision 25 March 2015:
 - Exclusion of essentially biological processes does not have an effect on the allowability of the product claim;
 - The fact that the process features of a product by process claim define an essentially biological process, do not render the claim unallowable;
 - The fact that the only method for generating the subject matter is an essentially biological process, does not render the claim unallowable.
- >Products developed through essentially biological processes can themselves be patented when patentability criteria are met.

IP on plant related inventions

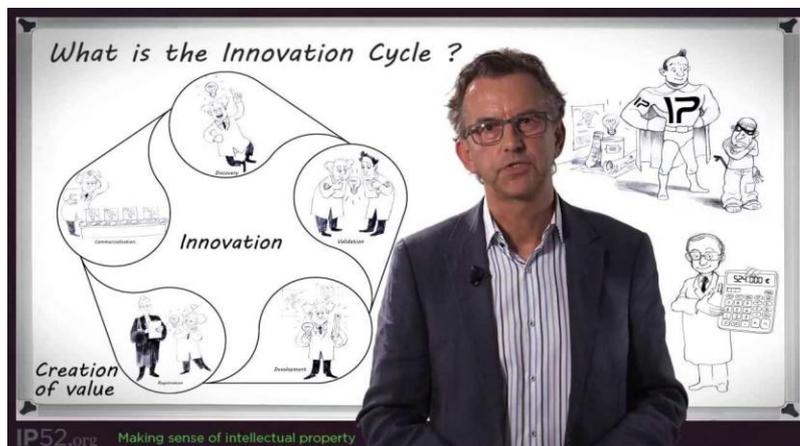
Balanced patent system

- No EU patents claiming individual plant varieties;
 - Plant related inventions are only patentable if they rigorously meet the patentability criteria;
 - Initiatives to enhance transparency;
 - Bilateral and multilateral licensing;
 - Limited breeder's exemption – extended breeder's exemption;
 - No opening of the Biotech Patent Directive.
- > Without an effective patent system, no reasonable break-even point;
- > Patents and plant breeder's rights are synergetic.

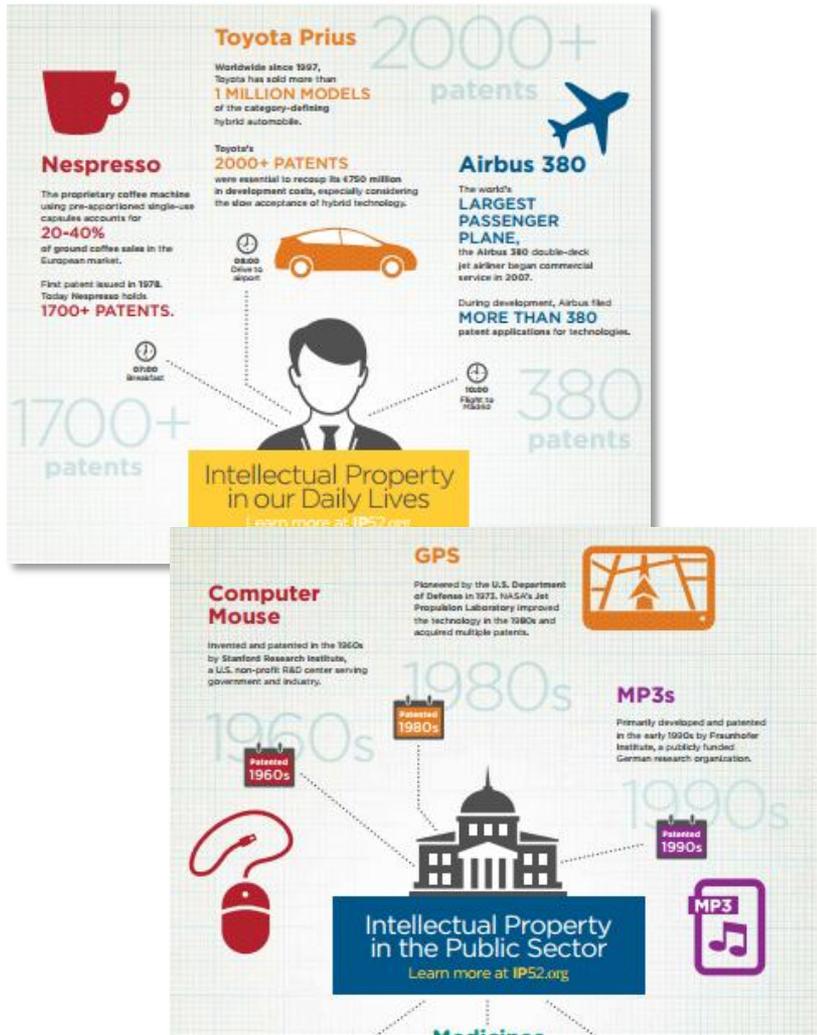
Video Materials



- Basics of IP
 - How is IP all around us?
 - What is IP? Why is it important?
 - What are patents? What are PVP rights?
- IP and Growth
 - What is the innovation cycle?
 - How does IP drive economy growth?
 - How would weaker IP hurt the public & private sectors?
- IP Myths
 - IP is unethical?
 - IP is just for the private sector?
 - IP is just for large companies?



Print Materials



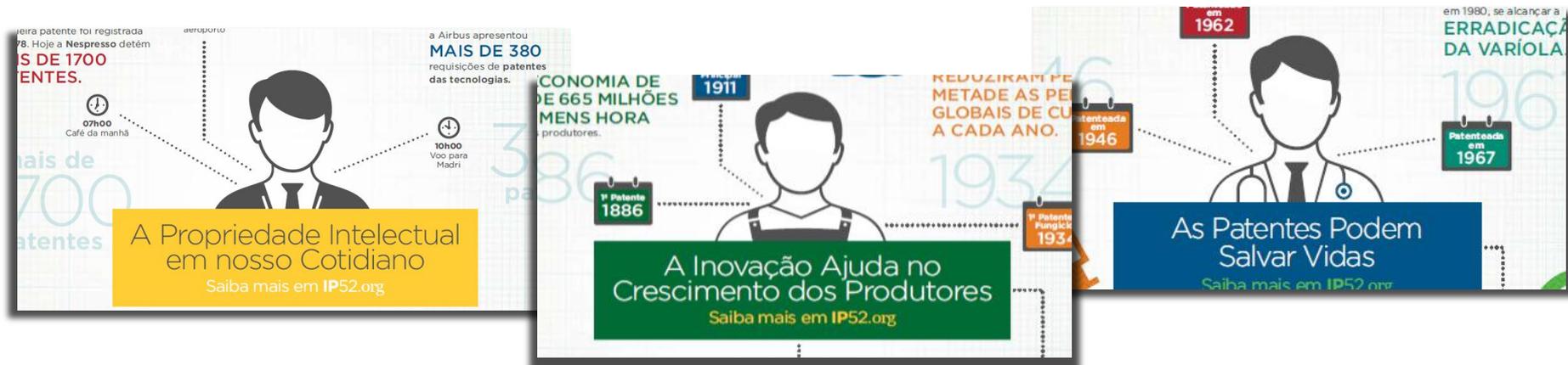
20+ Infographics showcasing the role of IP in our world

- Profiles of ag innovations made possible through IP
- Role of IP in boosting production of staple and specialty crops
- The IP all around us
- Uses of IP by the public sector

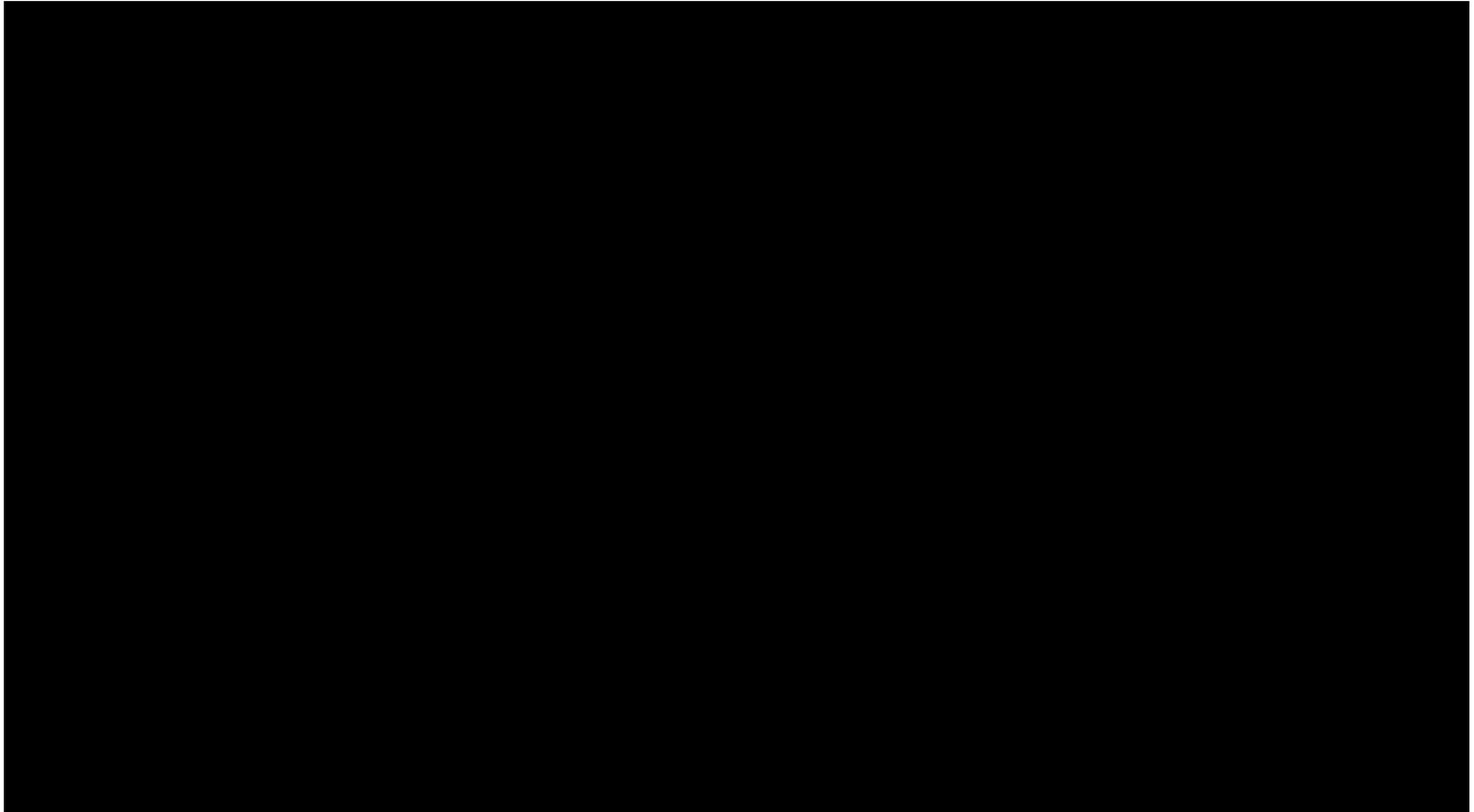
Translations

Mandarin, French, Spanish & Portuguese

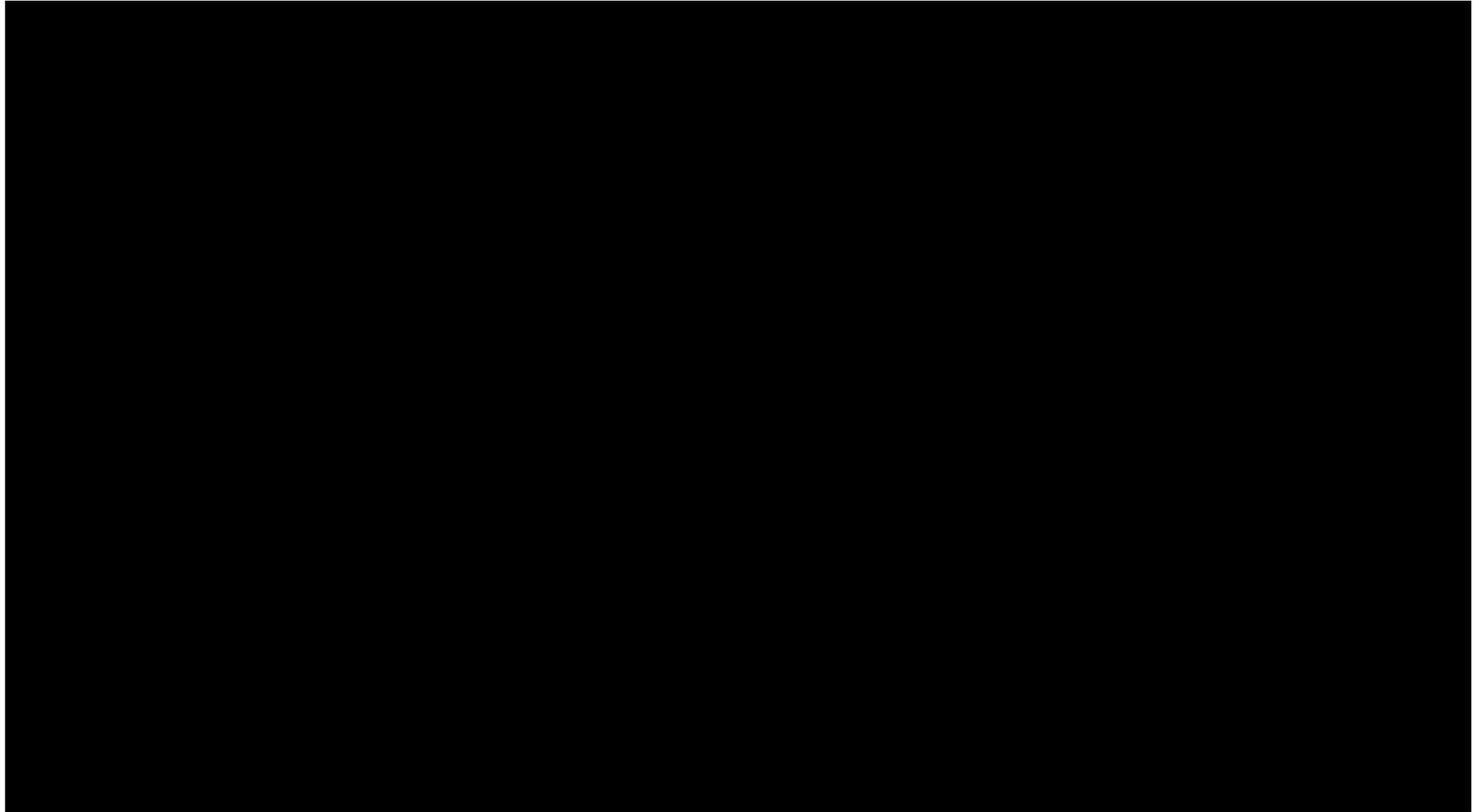
- Five key infographics and six videos
- Covers basics of IP: What is it, why is it important and where can we find it in our lives?
- In use by CropLife Global Network



A World Without Intellectual Property



Why is Intellectual Property Important?



General lessons of the Ogura case

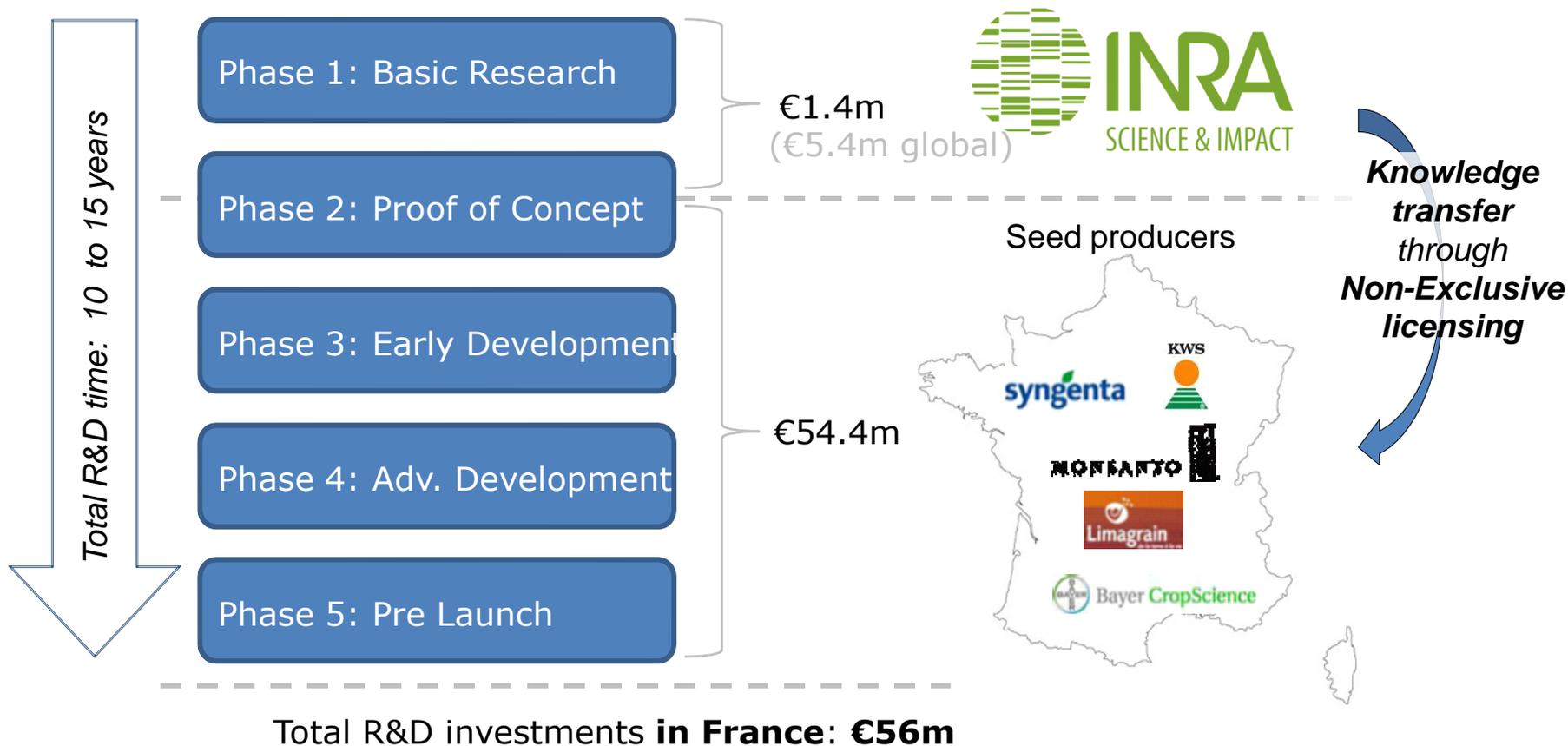
- 1 Of all benefits, 50% accrue to farmers while 25% most likely trickle down to the end-consumer
- 2 IPR is essential to enable innovation as it provides the ability to recoup R&D investments

IPR substantially increases the probability of innovations happening
- 3

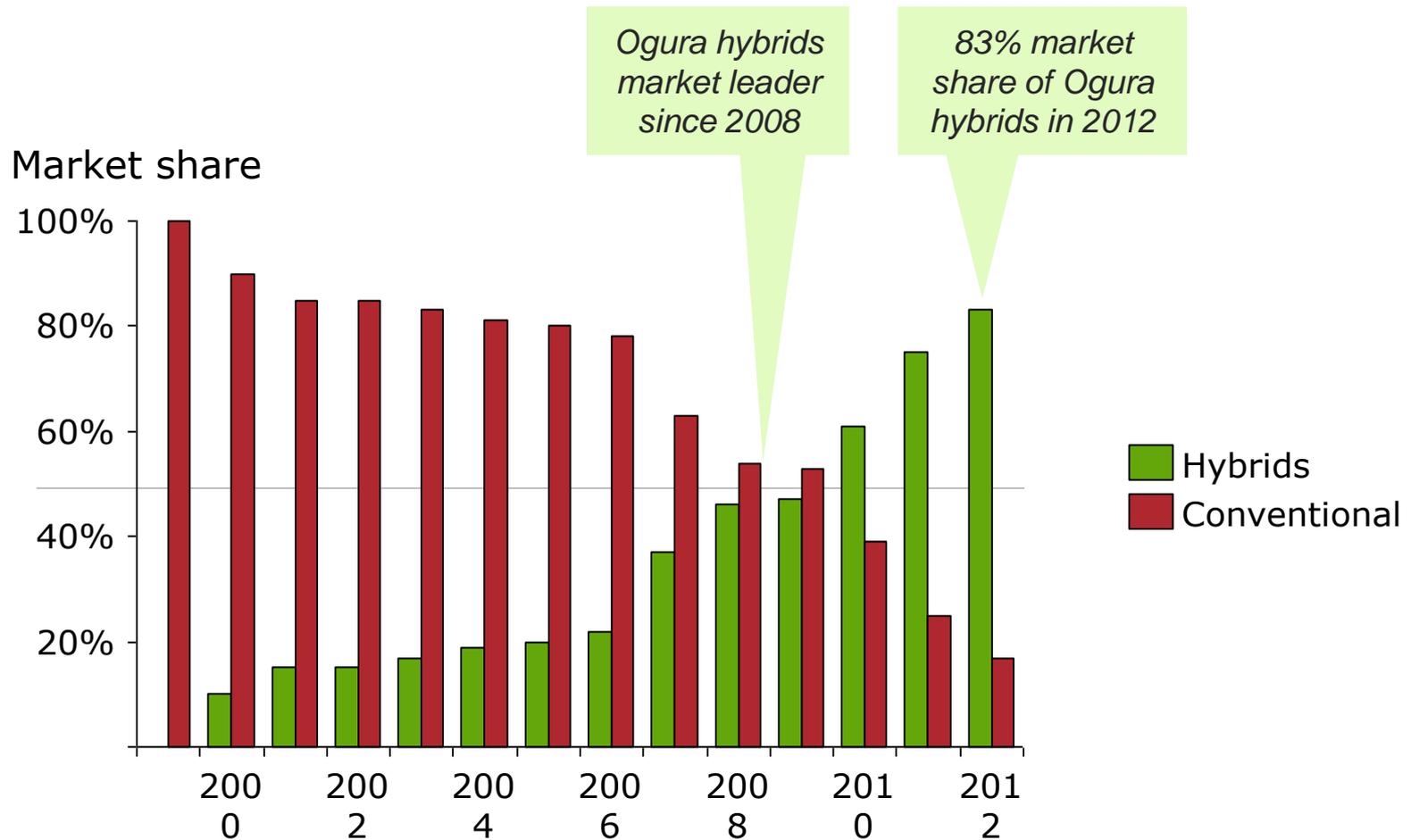
Even under exclusive use, pricing power of the innovator is limited
- 4

Ogura is a technology used to produce Oilseed Rape hybrids with 6-10% higher yields

Research & Development of Ogura technology: phases and costs in France



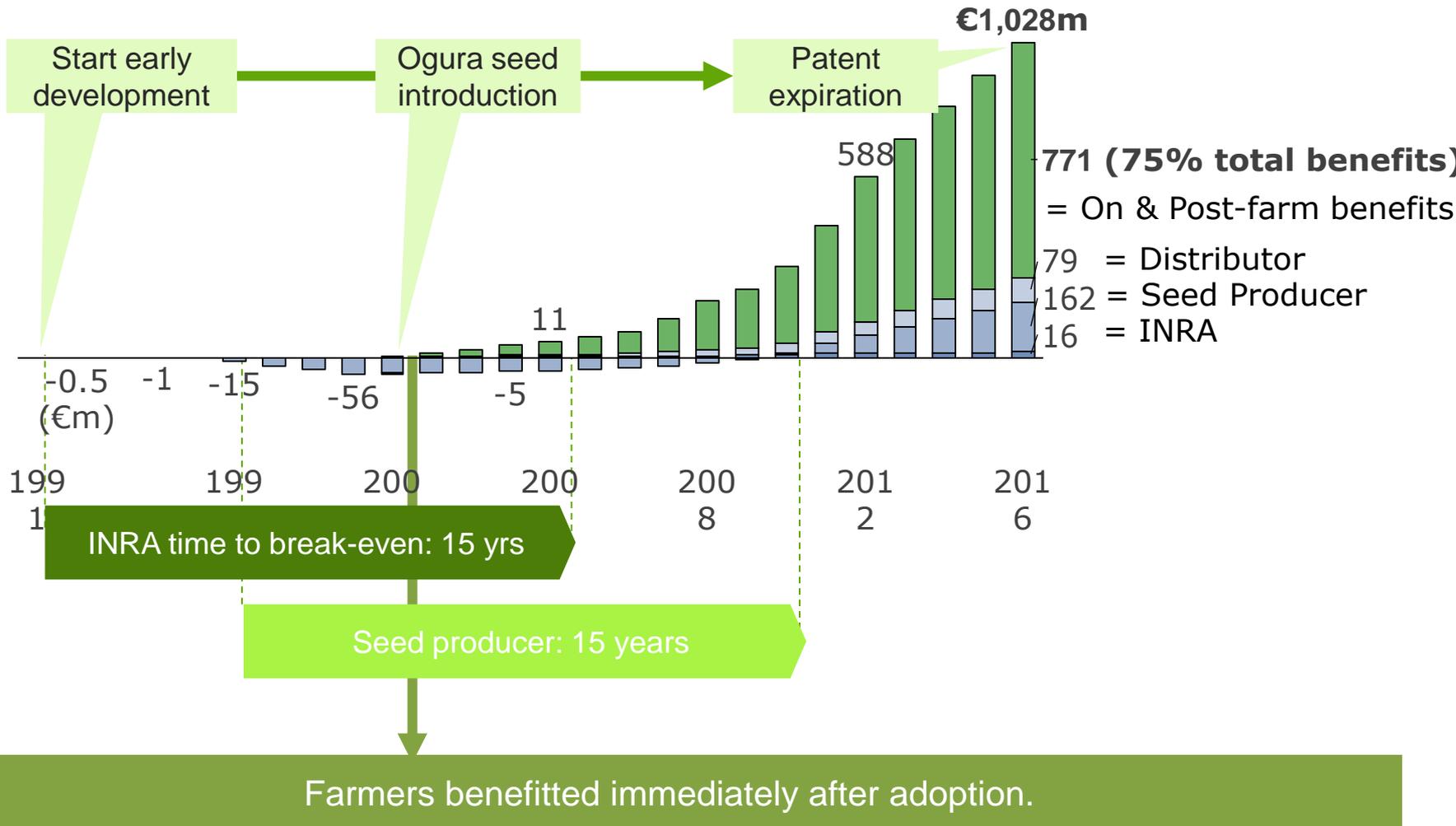
Ogura hybrids obtained 83% market share in 2012 in France



Market conditions have been favourable for the uptake of Ogura because Oilseed Rape prices more than doubled over the last decade

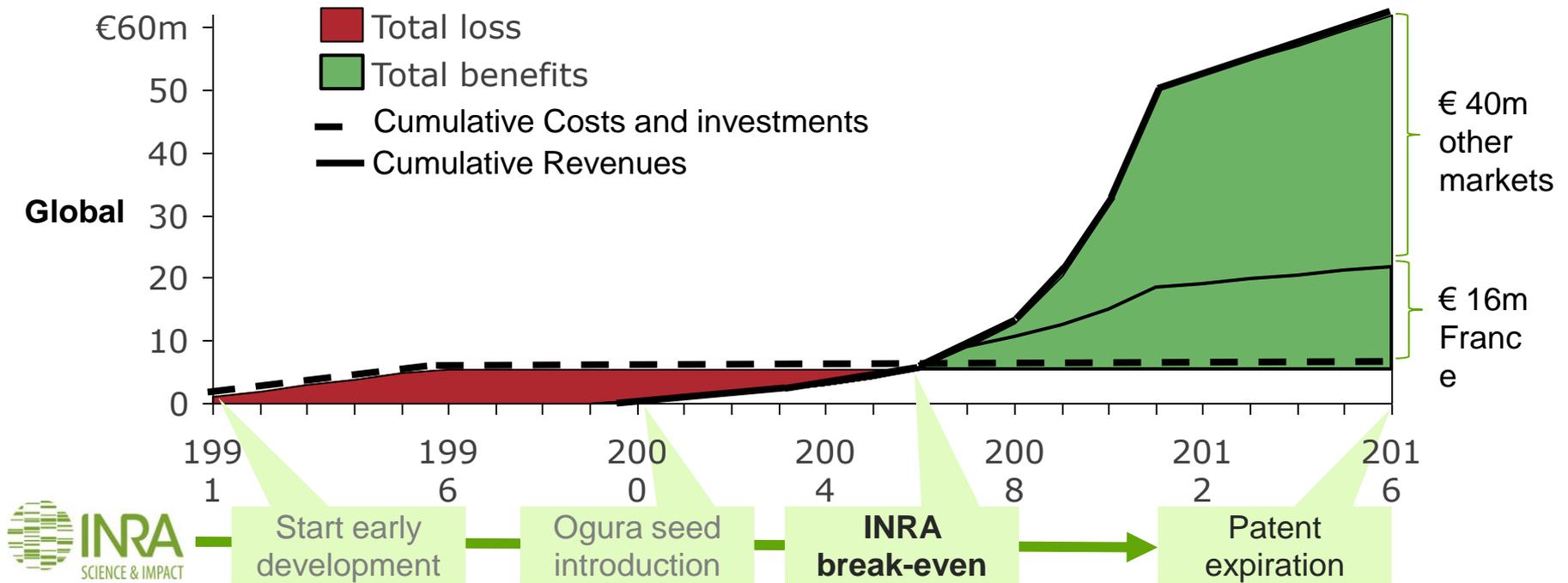
75% of benefits related to Ogura accrue to farmers and consumers

Breakdown of economic benefits related to Ogura in France (1991-2016)



IPR is essential to enable innovation as it provides the ability to recoup R&D investments

Break-even of INRA

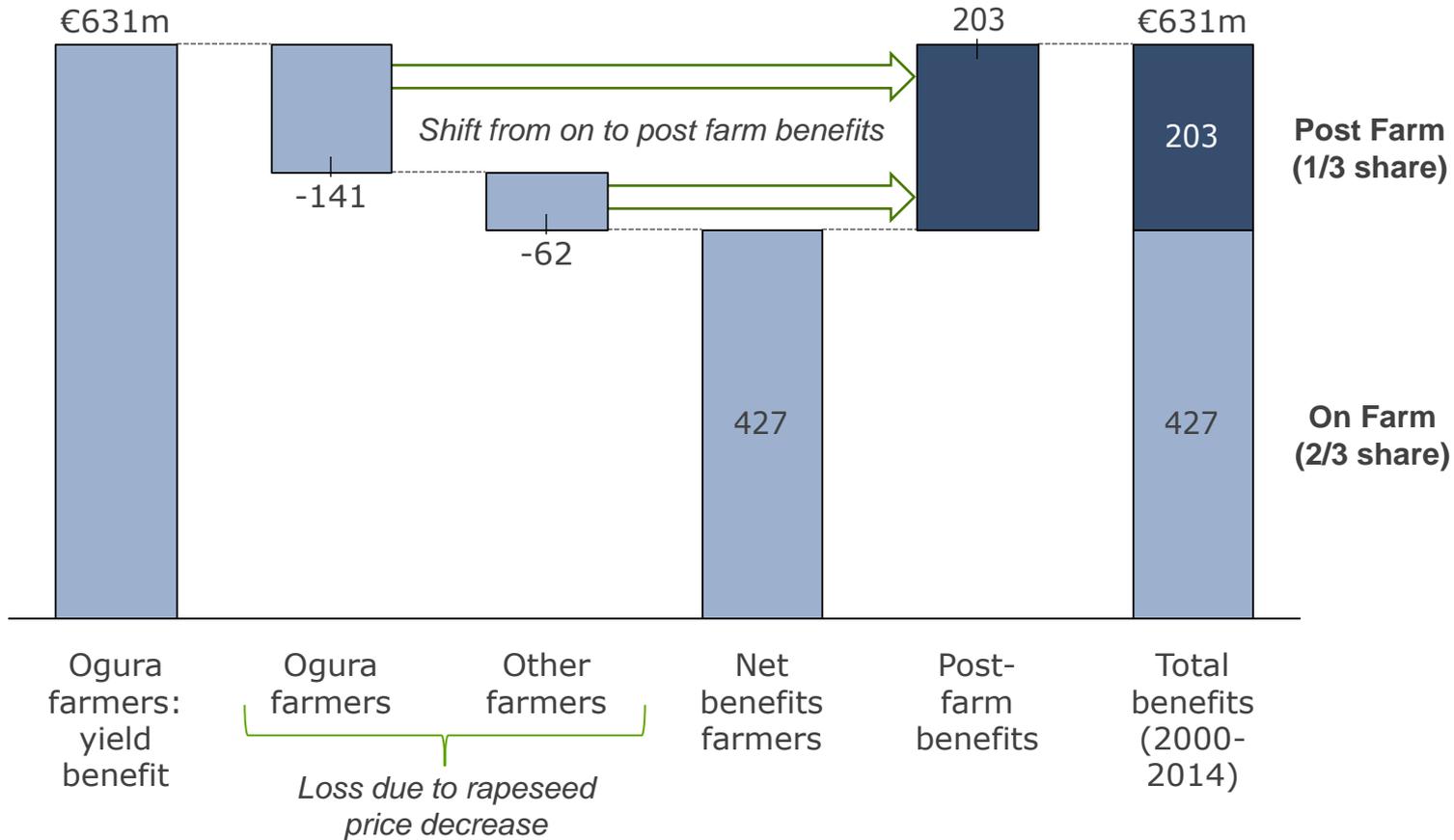


IPR enabled to INRA to recoup its investments after 15 years

These are about 1/3 of the benefits created on-farm and most likely trickle down to the consumer

1

On- and post-farm benefits related to Ogura in France (1991-2016)



The EC food price monitoring reports indicate that a change in (processed) crop and feed prices typically travel down to the consumer with delay.

1. Also analyses from CEREOPA and LEI-Wageningen University indicate that a change in protein-rich feed cost will most likely result in a change in consumer prices for milk and meat.

General lessons of the Ogura case

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