Intellectual property rights, agricultural innovation, and developing countries

Sara Boettiger
UC Davis & UC Berkeley
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PIPRA

public intellectual property resource for agriculture

Supporting public sector agricultural innovation for poverty alleviation.

www.pipra.org

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The public sector has a long and venerable history of providing the world with important agricultural innovations…

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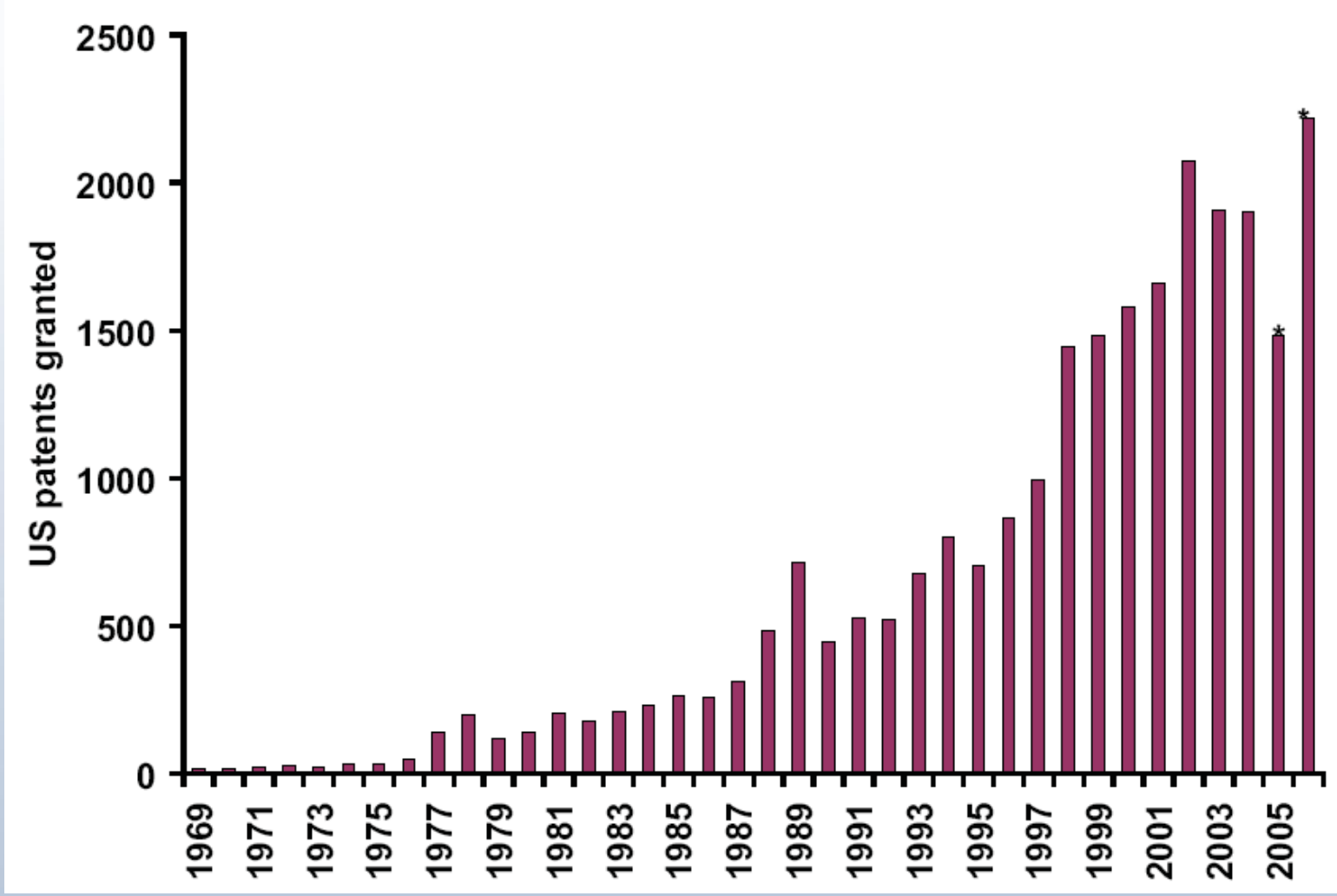
Agricultural research – increasingly a private asset…



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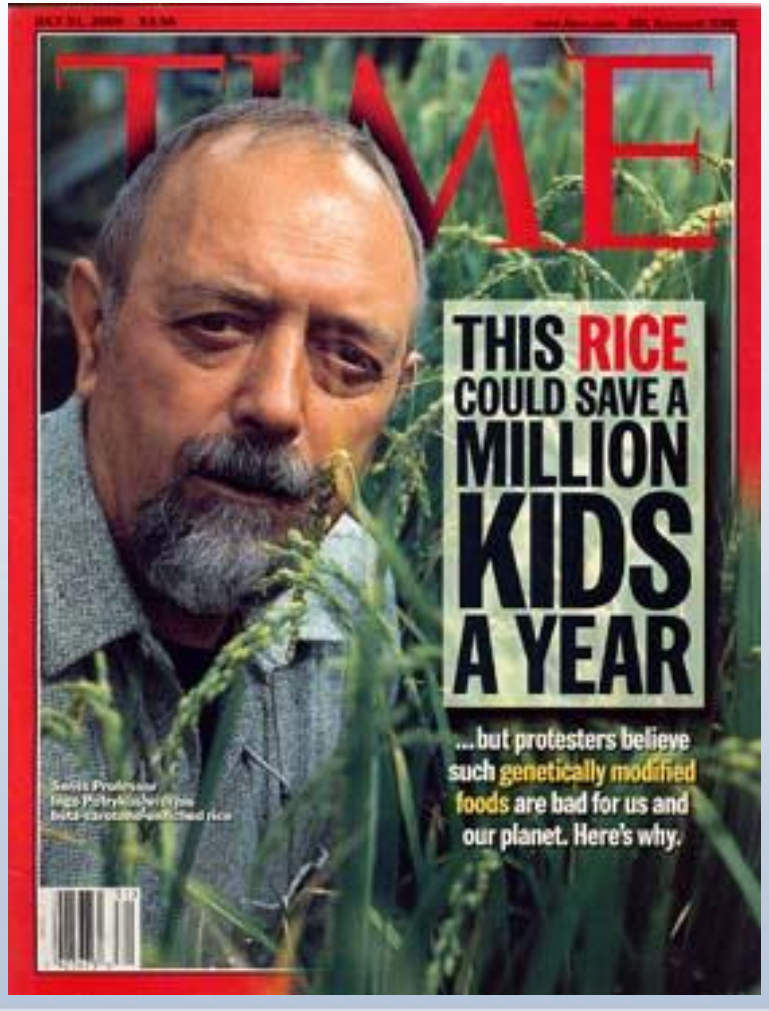
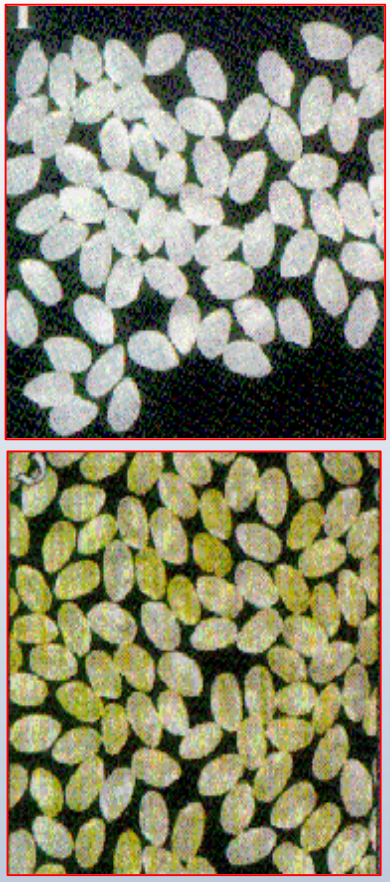
… which creates IP challenges for public research and missed opportunities for crop development.





"Golden" rice

70 proprietary technologies (40 US patents)

- *IP uncertainty*
- *High transaction costs*

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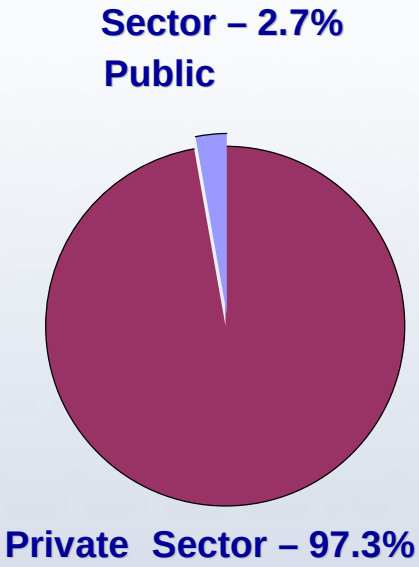
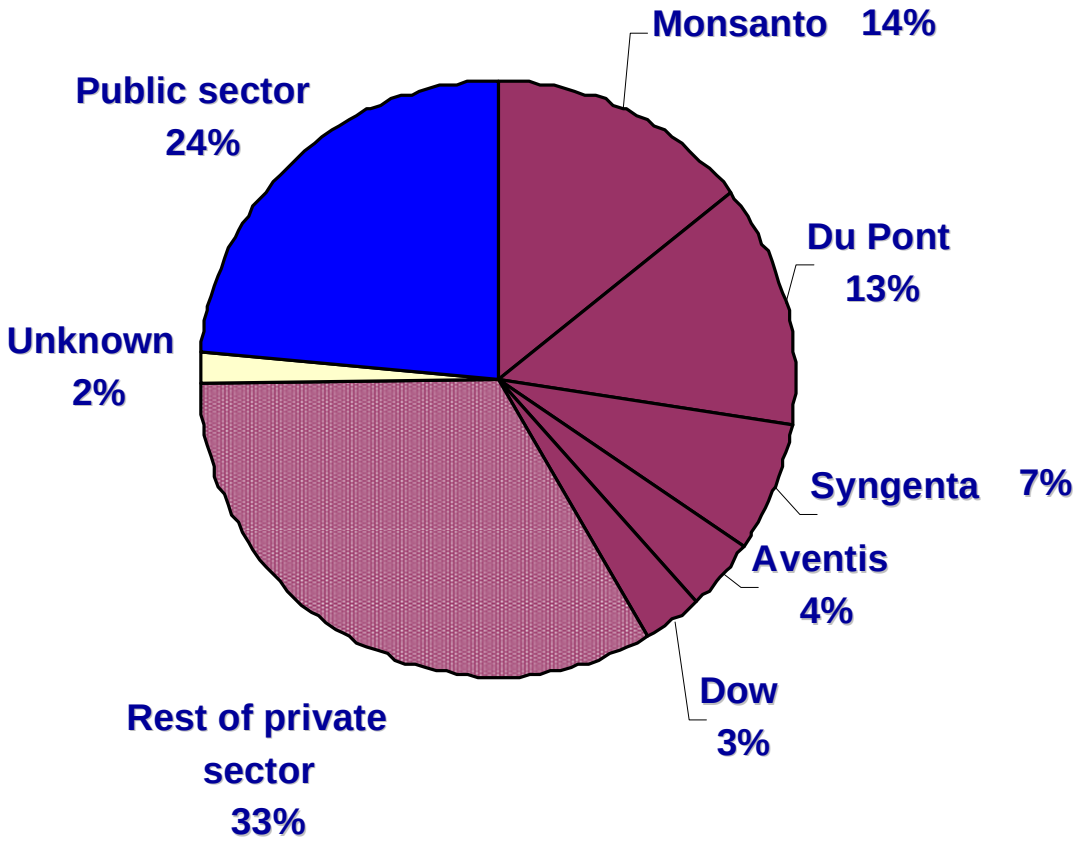
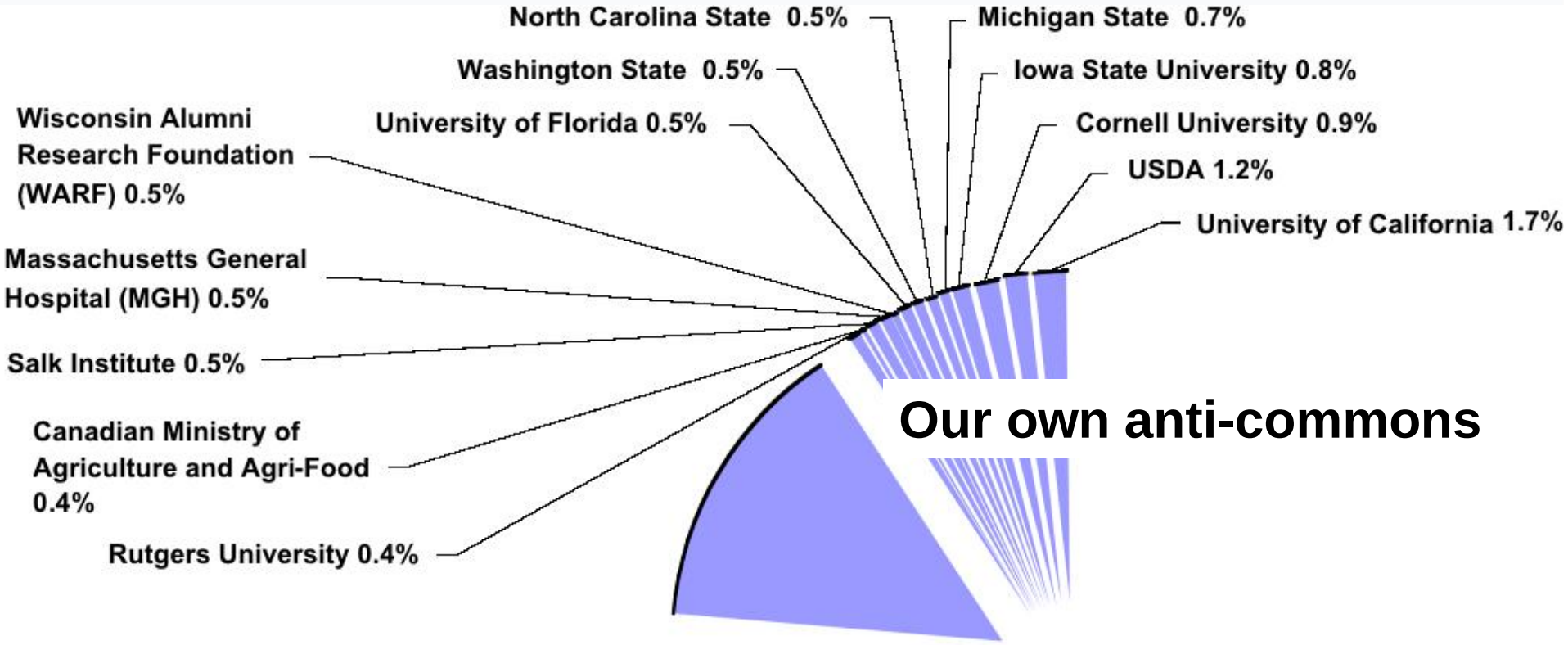
All technology areas - USPTO



Agricultural biotechnology



THE PUBLIC SECTOR IP PORTFOLIO IS HIGHLY FRAGMENTED



Source: Graff et al., *Nature Biotech*, 2003

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Support the public sector in managing their agricultural intellectual assets so as to promote innovation for increased global food security.

THE ROCKEFELLER FOUNDATION

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PIPRA works for the public sector to:

(1) ***enable access*** to agricultural technologies

(2)***develop IP strategies*** that will promote the highest impact on poverty.

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Collaboration with industry is *critical.*

If we are to:

- *accelerate* and *broaden* the pipeline of technologies that can impact poverty
- make them accessible and affordable
- make their delivery sustainable over time

…**we need *both* public and private sectors.**

BUT the public sector often lacks the resources and/or the capacity to manage IP in a strategic way to support product development.

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50 institutional members in 15 countries

IP analysis staff
Molecular biology labs
Network of top IP attorneys

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A Public Sector Patent Pool in Agricultural Biotechnology

Traits

Disease/Stress resistance
Nutritional enhancement
Stress (salt/drought) tolerance

Enabling Technologies

Vectors
Promoters
Selectable markers
Transformation Methods

Germplasm

Cultivars

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A Public Sector Patent Pool in Agricultural Biotechnology

Goal: Enable research on a wide array of agricultural applications and facilitate the transfer of research results from the lab bench to the field

Approach: Integrate biological, legal and regulatory considerations to develop, test, and distribute effective *plant transformation vectors* with maximum FTO to meet range of research needs

Freedom-to-Operate FTO: Ability of using a technology without infringing someone else's intellectual property rights.

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GALVmed: commercialization strategies for livestock vaccines in sub-Saharan Africa

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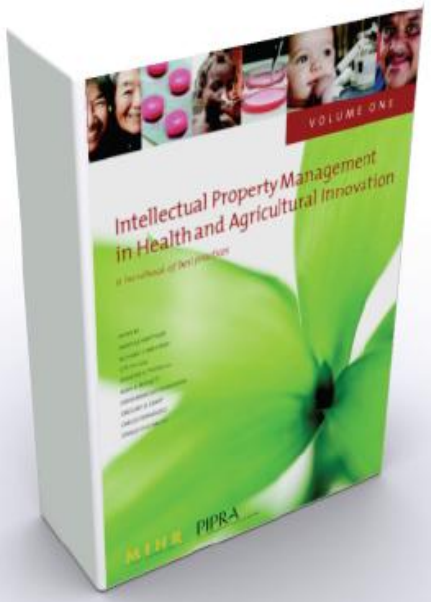
> This Handbook... is a valuable guide in helping to navigate the complex—but rewarding—world of an increasingly global innovation system.
>
> — Norman Borlaug
> Nobel Peace Prize Laureate



www.IPHANDBOOK.org

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Supporting the public sector in PPPs

- Water Efficient Maize for Africa
- Monsanto + African Agricultural Technology Foundation + CIMMYT
- Funded by the Bill & Melinda Gates Foundation
- PIPRA worked with Morrison and Foerster, LLP to support CIMMYT in negotiating the R & D agreement

Thank you

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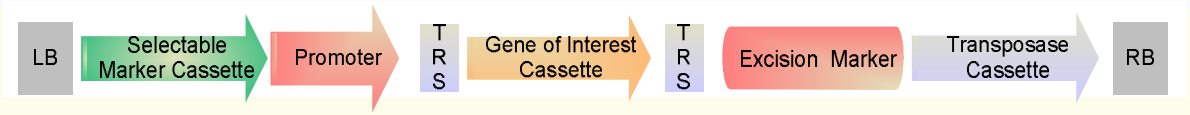
A Public Sector Patent Pool in Agricultural Biotechnology

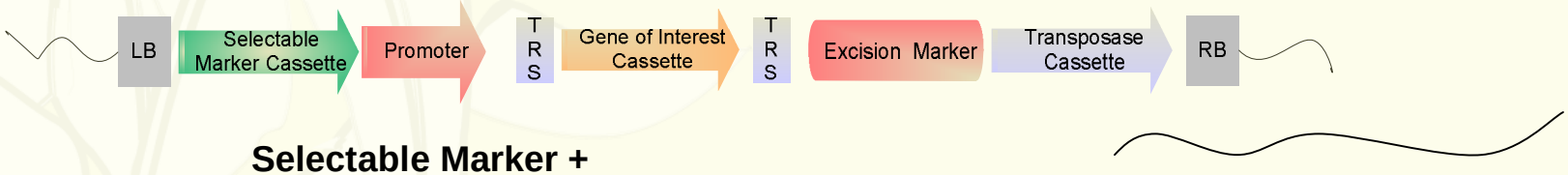
Transposon Module



Transformation

Primary T_o Transformants:
Selectable Marker +
Excision Marker –

2nd Generation



Selectable Marker +
Excision Marker +

3rd Generation

Selectable Marker -
Excision Marker -