

Genetic Resources, who benefits? Plant Breeding Perspective

Frank Michiels, 7 March 2019

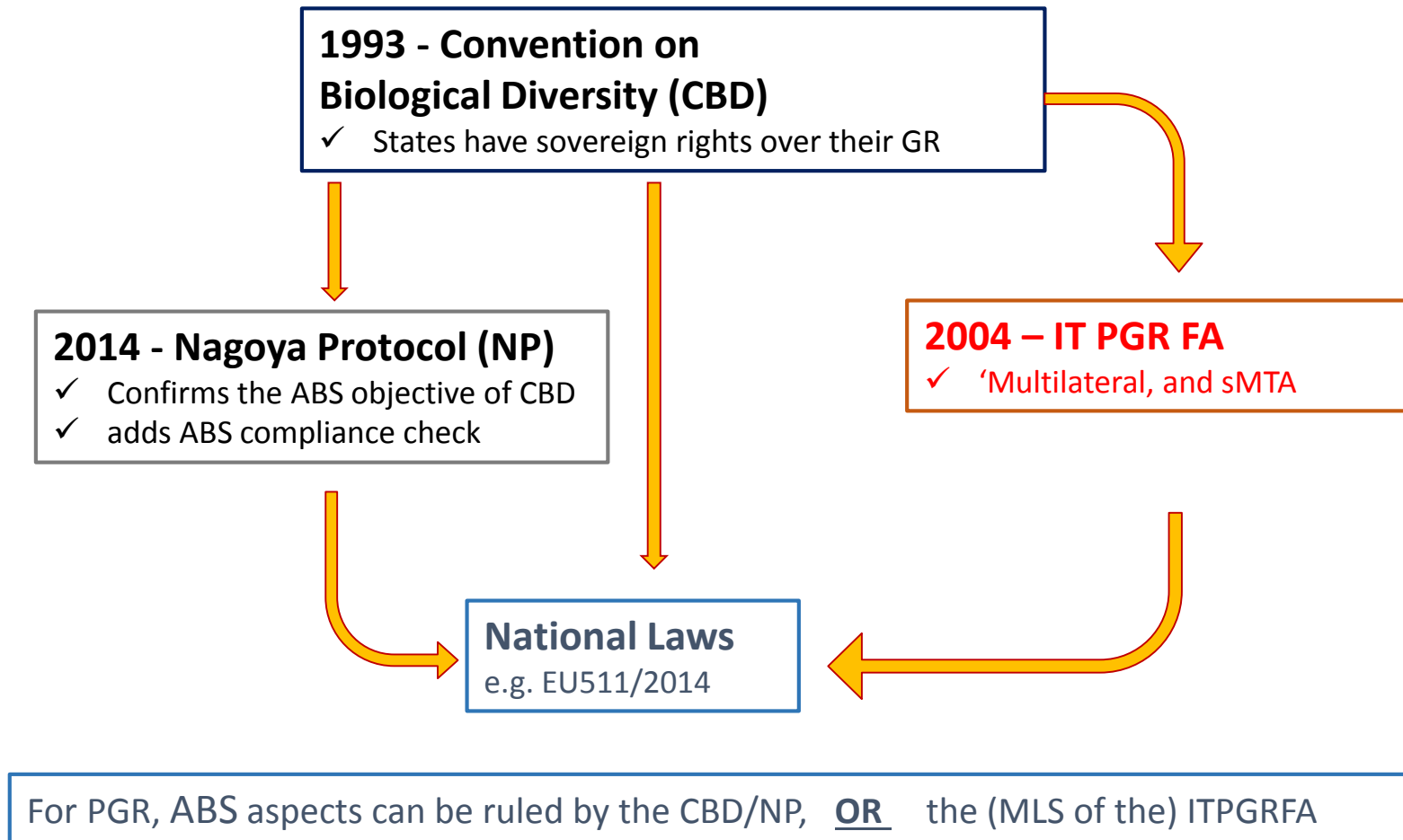
Chapters

- Introduction
- CBD/NP and ITPGRFA for Plant Breeding Sector
- Compliance systems
- Are the objectives of ABS achievable?
- IP challenges
- How to move forward

This ppt has ideas for further discussion.

It should not be quoted as the official position of a company, or an association

ABS : International Treaties, national laws



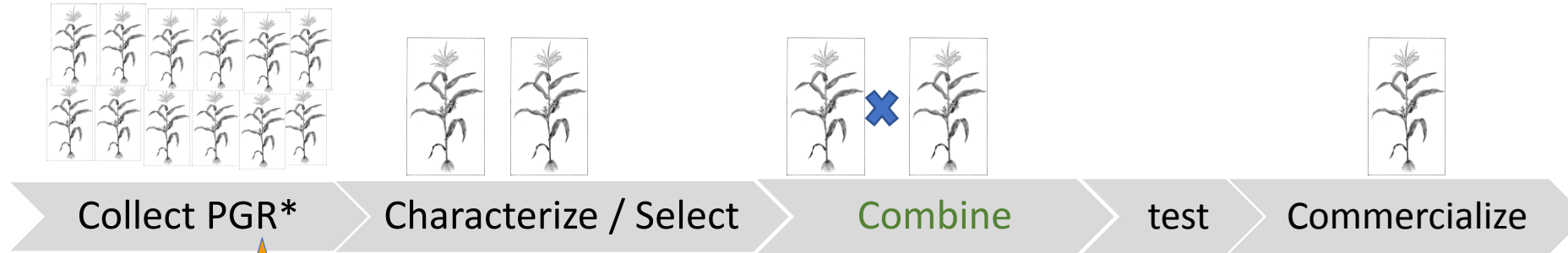
ISSUES

For Breeders

Primarily for
PGR under CBD/NP

Impact of CBD/NP for plant Breeding and R&D

1. Getting PIC/MAT at access



Breeders need **lots of** PGR

- ✓ to start a breeding program,
- ✓ and to regularly address new breeding objectives

Need pathogens for testing disease resistance

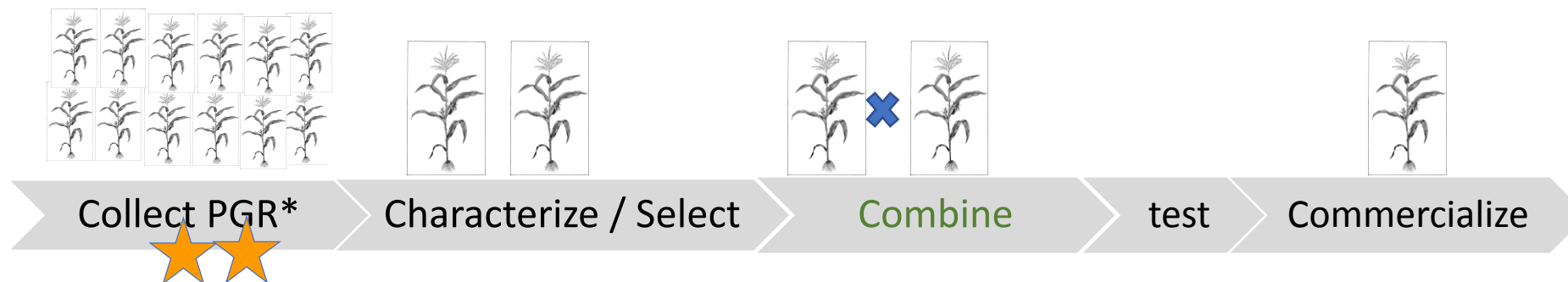
PGR, 'Traits', 'Information', from

- ✓ own collection,
- ✓ germplasm collections,
- ✓ technology providers , competitors

From diverse countries

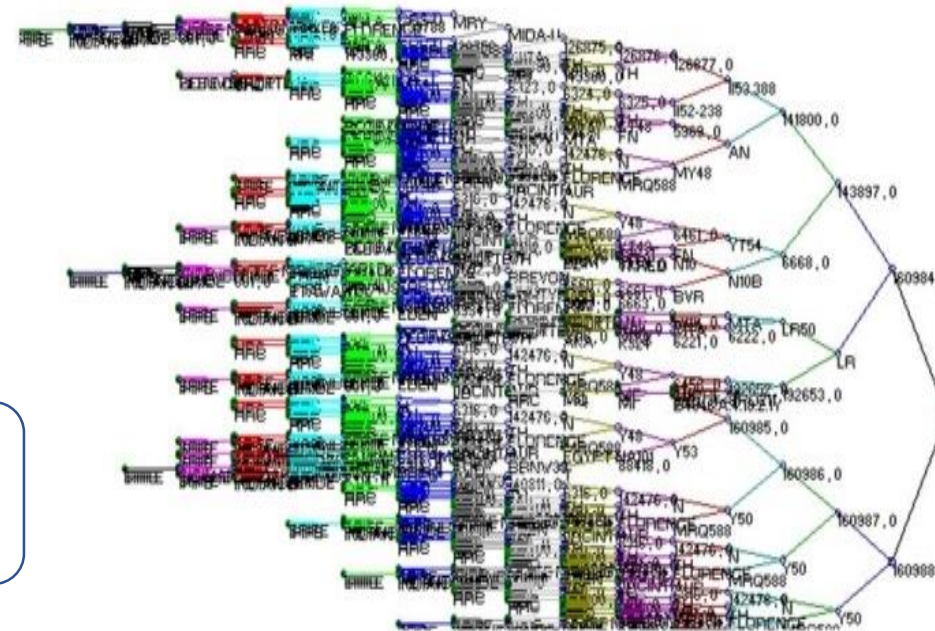
It is not easy to negotiate PIC/MAT

2. Who is the right Provider?



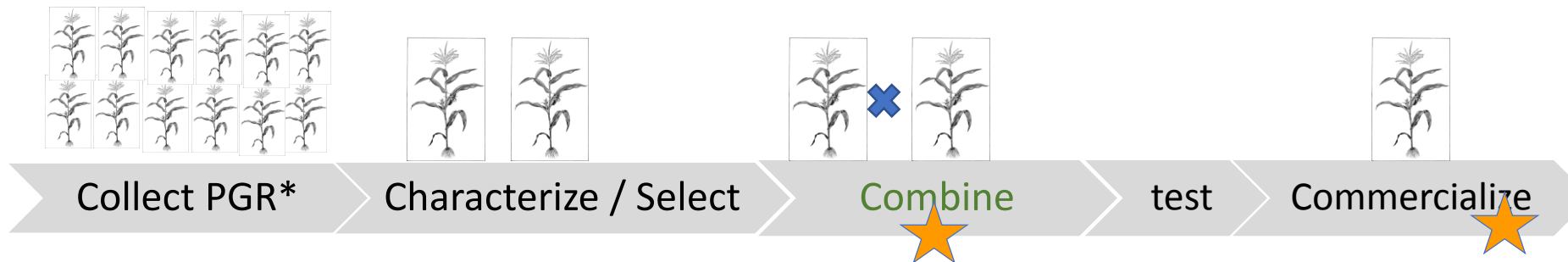
Origin of a PGR is very complex.
Most PGR have been collected / transferred /
combined/ sold / traded internationally
since a very long time.

What if we agree on PIC/MAT with one Provider,
and others also claim to be Provider?



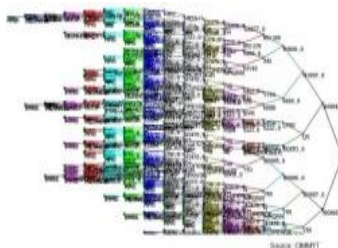
Source: CIMMYT

3. Our Product is a COMBINATION of GR

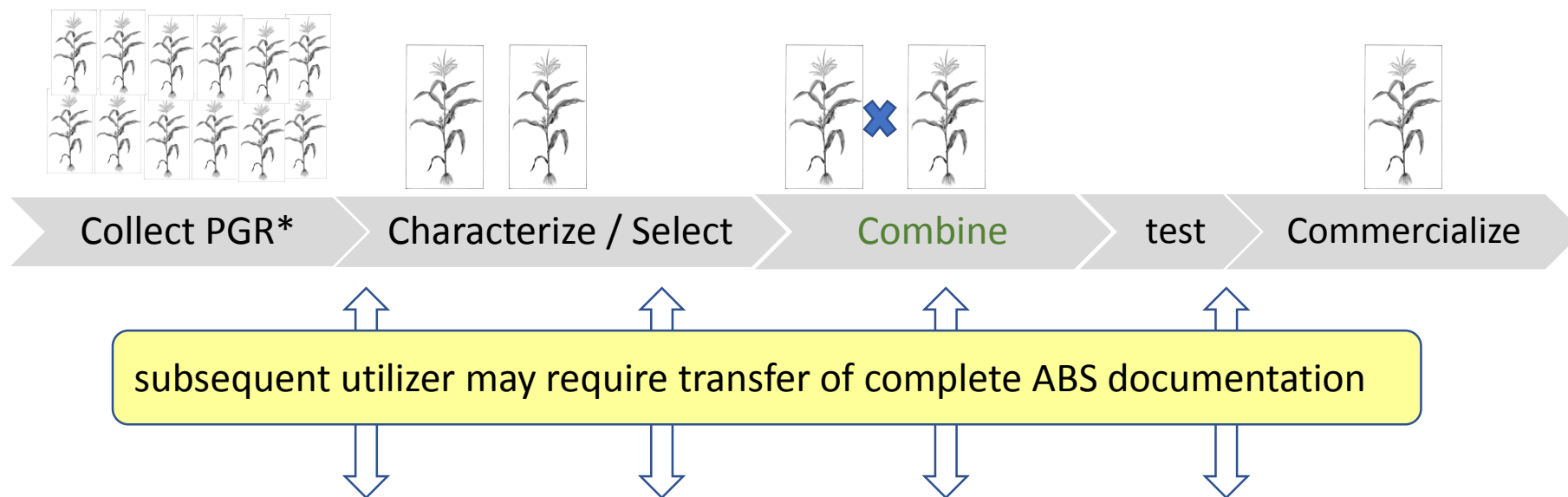


Breeders make crosses
At each cross, the number of providers (and contracts) doubles

Even if we know the value of a Product,
what is **'FAIR' sharing of benefits?**

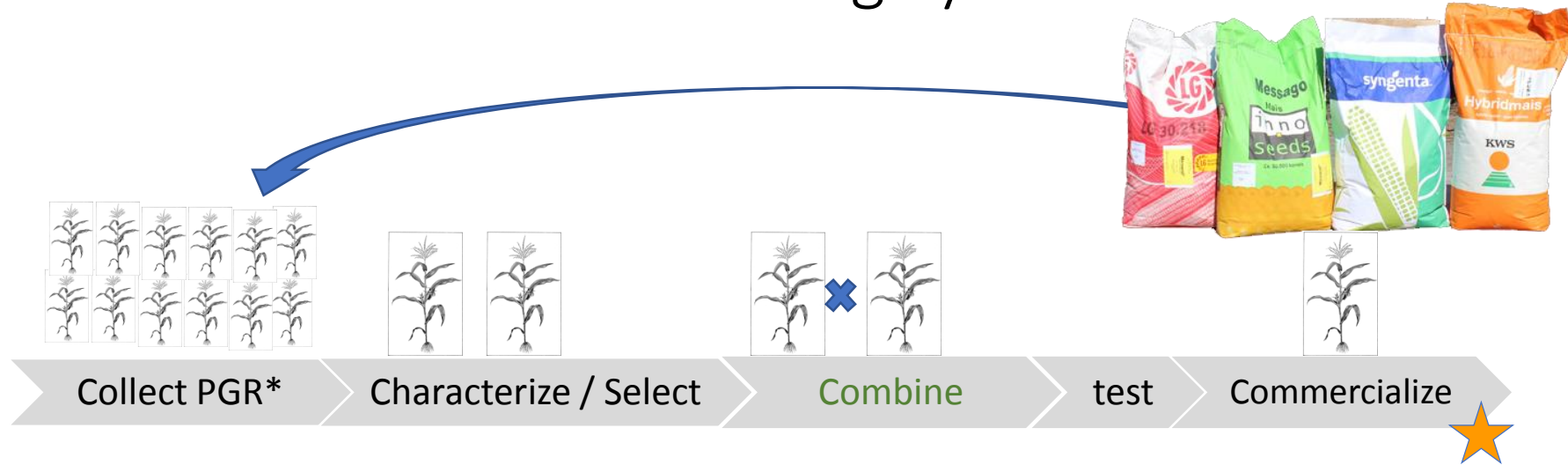


4. Breeders interact with multiple stakeholders



- ✓ License in / out, pre-competitive research,
 - ✓ with **germplasm banks, universities, institutes, public&private sector**
- ✓ Multiple **subcontractors**, for trials, for genetic diagnostics
- ✓ **Outsource** seed production
- ✓ Sell via **distributors**

5. Breeders purchase commercial seed and use it for the next breeding cycle.



This is essential for breeding progress.

UPOV and MLS of ITPGRFA have avoided requirements on use of purchased commercial seed for further breeding.

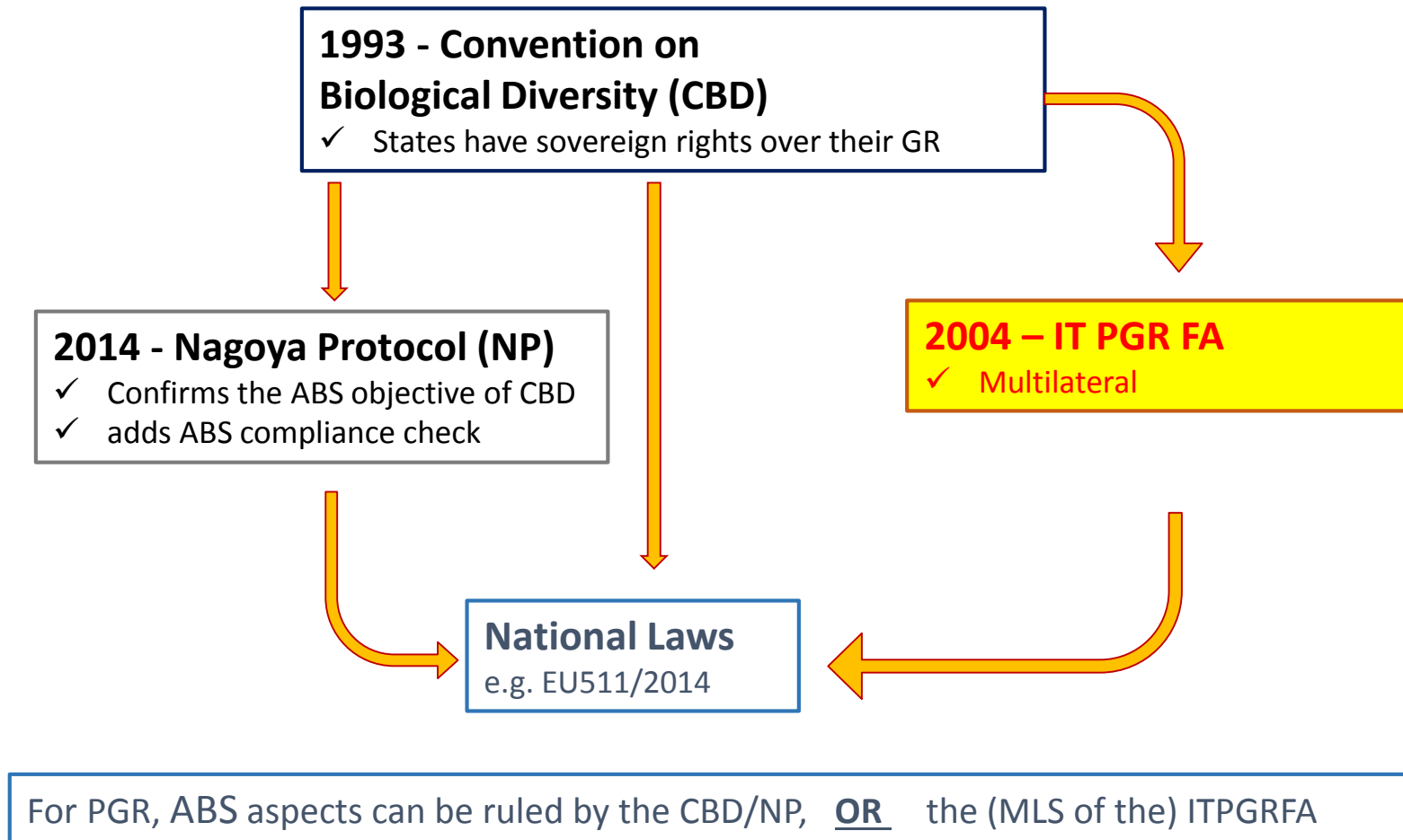
Will ABS requirements apply when using purchased commercial seed/commodities for further breeding?

- ✓ If yes, what are the requirements?
- ✓ How can the breeder know the requirements?

6. Other impact of CBD/NP for plant Breeding and R&D

- EU511/2014:
 - Transfer ABS documentation to subsequent user
 - If it is not possible to get PIC&MAT, discontinue use, . .
 - Due Diligence Declaration at research funding
 - Keep ABS documentation until 20 years after last Utilization

ABS : International Treaties, national laws



ITPGRFA

International Treaty on Plant Genetic Resources in Food and Agriculture

Special Instrument = exception to CBD/NP.

MLS = Multi-Lateral System with

GR collections

Standard contract (sMTA)

Non-cumulative royalties

Pay only at sales*

* 0.7% of turnover if product is not available for further R&D

No bureaucracy during R&D phase

Easy co-operation (among MLS users)

No royalty obligations on purchased commercial seed

Perferred ABS
mechanism



MLS of ITPGRFA

International Treaty on Plant Genetic Resources in Food and Agriculture



- Incomplete scope in terms of countries, crops, GR coverage.
- sMTA is perpetual, no termination
- Requires track and trace (albeit less complex than CBD/NP)
- Started in 2004, but user-based payments are slow to materialize

<http://www.fao.org/plant-treaty/news/news-detail/en/c/1143273/>



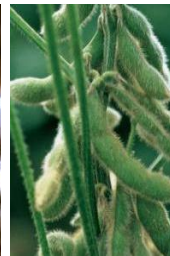
27/06/2018

Dutch Plant Breeding Company Pays Into Benefit-sharing Fund

Future direction

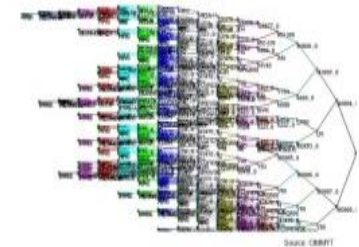
Make ITPGRFA more attractive for PGR users and providers

- Broader scope: Countries / crops / % coverage / offer solution for DSI, CWR
- Providers have financial expectations
- Subscription system
 - Simplify
 - Reduce transaction costs, eliminate track&trace, reduce free-riding
 - Option to terminate
 - Less lag time in income for providers



User compliance systems to ABS

- Nominate a responsible (Genetic Resource Coordinator)
- Monitor the ABS laws
 - Also: Associations help to compile and explain ABS requirements
- Standard Procedures
- PGR database
 - Traceability of GR (and their ABS contracts) throughout value chain
 - At access :
 - Record GR, and its access conditions and GR source
 - Ensure compliance
 - At control points: Verify compliance
 - E.g. Stage of final development, research funding (EU511/2014)



Are the objectives of ABS achievable? For (plant) breeders

- CBD (and ITPGRFA) objectives

- Conservation – Sustainable use – Benefit sharing
- Capacity building, technology transfer, . .

**=> GR users support,
and already contribute**

<https://www.euroseeds.eu/voluntary-benefit-sharing-activities-european-seed-industry>.

- CBD Article 15, and its further implementation

- Multiple national laws entering into force
- Not harmonized, but often
- Focus on monetary benefit sharing from private sector
- ABS requirements in R&D, on multiple actions and transactions, per GR
- Tendency to broader scope (DSI, aTK, derivatives)

=> major challenge for plant breeders

Fair Planet: This non-profit organization is aimed at improving farmers' livelihoods in Ethiopia. Inter alia, this is done via facilitating access of smallholder farmers to seed of the highest-quality varieties suitable for their needs and training them to use these seeds with minimal changes to their traditional production practices.



IP challenges (personal view)

- Complexity of requirements
- Definitions
- IP aims to be an incentive to innovation. How about ABS?
- Messages contradicting IP
- Requirements on IP, e.g. disclosure of GR source.

IP challenges

- **Complexity of requirements**
 - ABS is essentially a (large number of complex) contract(s)
 - Every contract can have IP clauses
- Definitions
- IP aims to be an incentive to innovation. How about ABS?
- Messages contradicting IP
- Requirements on IP, e.g. disclosure of GR source.

IP challenges

- Complexity of requirements

- **Definitions**

- aTK
- DSI
- Derivatives
- Utilization
- Provider country / country of origin

Suitable in some context, but unclear to describe contract obligations (payment, publication, progress report, compliance, sublicensing, confidentiality, IP rights)

- IP aims to be an incentive to innovation. How about ABS?
- Messages contradicting IP
- Requirements on IP, e.g. disclosure of GR source.

IP challenges

- Complexity of requirements
- Definitions
- **IP aims to be an incentive to innovation.**
 - Balance the rights of the inventor versus the rights of the public and the future inventor
 - Expiry, exhaustion
 - Rights limited by scope of claims, geography
 - Exemption for research / breeders' exemption in PVP.
 - Harmonization of IP laws
 -

CBD / NP have a 'Sustainable use' objective
but a lot of ABS national laws and PIC/MAT are not tuned to be an incentive to innovation /utilization

- Messages contradicting IP
- Requirements on IP, e.g. disclosure of GR source.

IP challenges

- Complexity of requirements
- Definitions
- IP aims to be an incentive to innovation. How about ABS?
- Messages contradicting IP, e.g.
 - 2004; ITPGRFA art 9.3.: . . . Nothing in this Article shall be interpreted to limit any **rights that farmers have to save, use, exchange and sell farm-saved seed**/propagating material, subject to national law and as appropriate,
 - 2018: UN peasants rights art 19.d.: ‘peasants have the right to seeds, including the right to save, use, exchange and sell their farm-saved seed or propagating material.’
- Requirements on IP, e.g. disclosure of GR source.

How to move forward (personal view)

- REACT (to text proposals)
- ACT (to achieve objectives of CBD (or SDG))
- COMMUNICATE
- WHO/WHEN

How to move forward (personal view)

- **REACT (to text proposals, laws, requirements, PIC/MAT, ABS contracts)**
 - Simplify, harmonize
 - exempt
 - Subcontracting, large scale screening, re-Utilization of GR (e.g. commercial plant varieties)
 - Regulatory trials
 - Quality control
 - Studies of plant/animal/human disease, Ecological surveys and studies, human microbiome
 - the use of GR as a tool (pathogens in screening)
 - Request expiry, exhaustion, research exemption, cut-off points
 - R&D without entry barrier and bureaucratic burden (like MLS)
 - user-friendly transfer to subsequent user
 - In ITPGRFA
 - Subscription, termination, . . .
- ACT (to achieve objectives of CBD (or SDG))
- COMMUNICATE
- WHO/WHEN

How to move forward (personal view)

- REACT (to text proposals)
- ACT (to achieve objectives of CBD (or SDG))
- COMMUNICATE

- WHO
 - Ideally, all GR users speak a similar message
 - public and private sector
 - All the value chain, include farmers/WFO, food producers

- WHEN
 - In CBD/NP: Contribute to CBD post-2020 global biodiversity framework
Discussion on DSI, GMBSM
 - In ITPGRFA: Prepare for GB8 (11-16 Nov 2019)

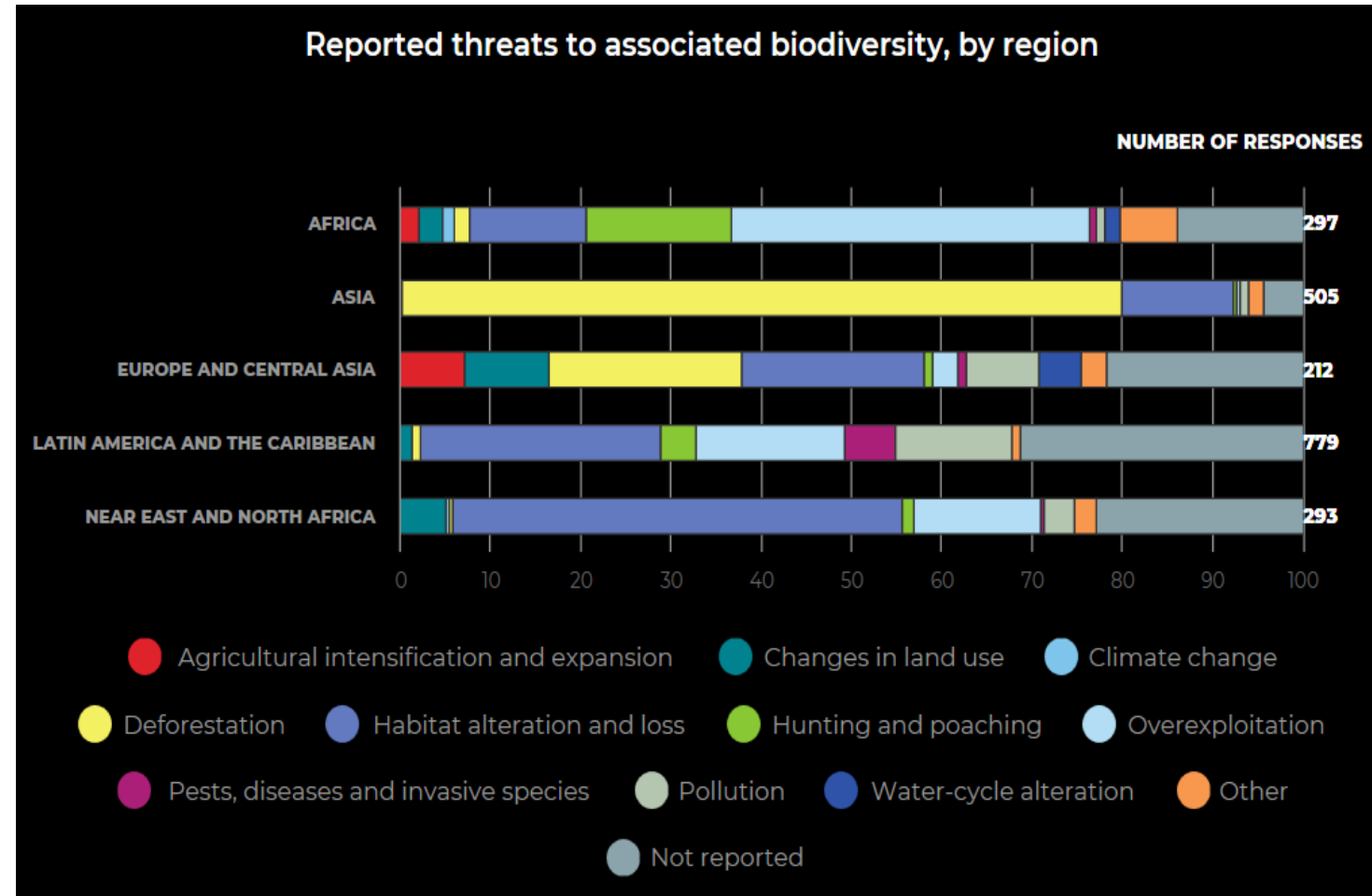
How to move forward (personal view)

- REACT (to text proposals)
- ACT

To achieve objectives of CBD/NP (or SDG)

- GR users can help
- (sustainable) Utilization is part of the solution, not cause of the problem

- EXPLAIN
- WHO/WHEN



<http://www.fao.org/state-of-biodiversity-for-food-agriculture/en/>

How to move forward (personal view)

- REACT (to text proposals)
- ACT (to achieve objectives of CBD (or SDG))
- **COMMUNICATE**
 - To:
 - Providers, regulators, general public opinion
 - About
 - Innovation,
 - use types of GR, (and DSI),
 - How to achieve CBD / SDG objectives
 - science-based prioritizations
 - Find ways to
 - have impact
 - Be acceptable to all stakeholders
- WHO/WHEN

THANKS !

Questions?

Comments?

Suggestions?

NP objective

- . . . the fair and equitable sharing of the benefits arising from the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding, thereby contributing to the conservation of biological diversity and the sustainable use of its components.

UN Sustainable Development Goals

2. Zero hunger

2.3. Double agricultural productivity

2.4. ensure sustainable food production systems and implement resilient agricultural practices

2.5. By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed <.> and their related wild species, including through <.> seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of GR and aTK, as internationally agreed

15.6. Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed

17. Tech transfer, capacity building, partnerships, knowledge sharing

<https://sustainabledevelopment.un.org/content/documents/11803Official-List-of-Proposed-SDG-Indicators.pdf>