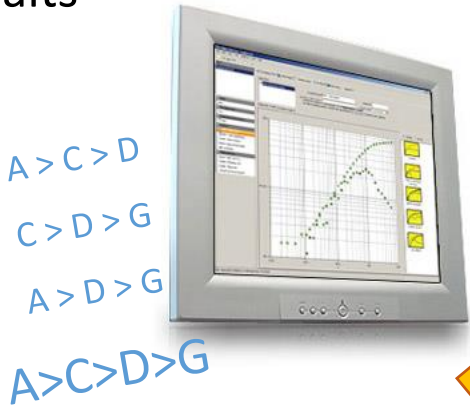# Farmers' generated data for climate adaptation: evidence from three continents

Bioversity International, Information Services and Seed Supplies

The cycle of tricot research

1. A broad set of varieties (10-25) is evaluated
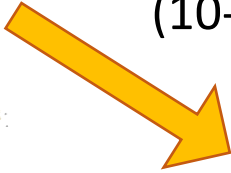
2. Each farmer gets a combination of 3 varieties

3. Farmer plants a trial and makes observations

4. Project managers collect farmers' observations by phone

5. Data are used to evaluate varieties and to detect demand for new varieties and traits

A > C > D
C > D > G
A > D > G
A>C>D>G

6. Farmers receive variety recommendations and can order seeds

van Etten et al. (2016) *Expl. Agric.*
Beza et al. (2017) *PloS ONE* **12**(5):e0175700
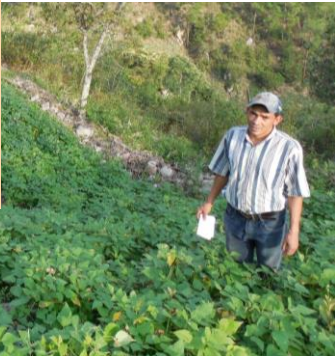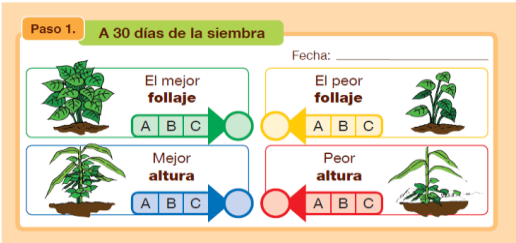
> 22k on-farm trails

> 170 varieties

3 continents

Bioversity
International

What we learned

Farmers' generated data are reliable
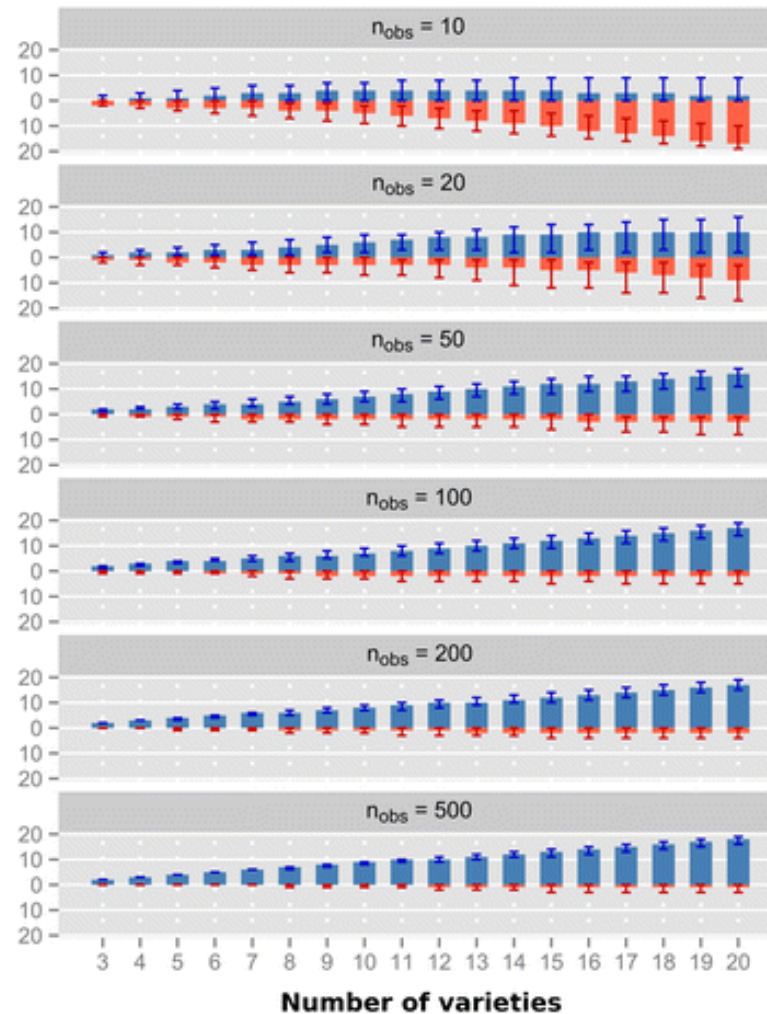
Steinke et al. (2017) *Agron. Sustain. Dev*. (2017)37:32
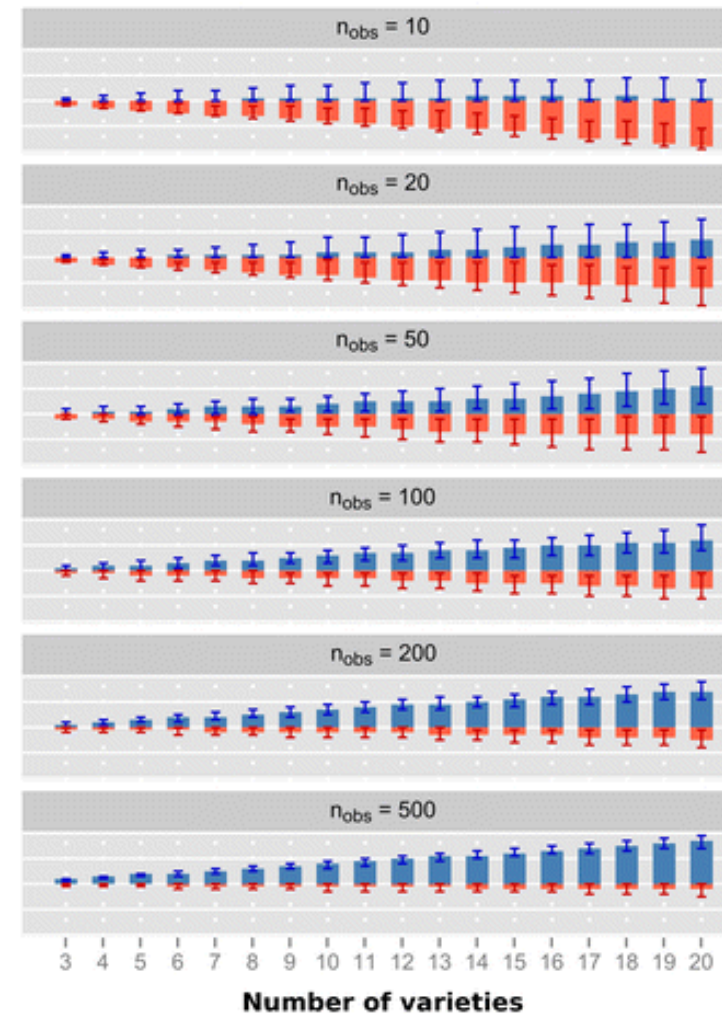
Farmers supports plant breeding initiatives

Mancini et al. (2017) *Sci. Rep.* 7: 9120
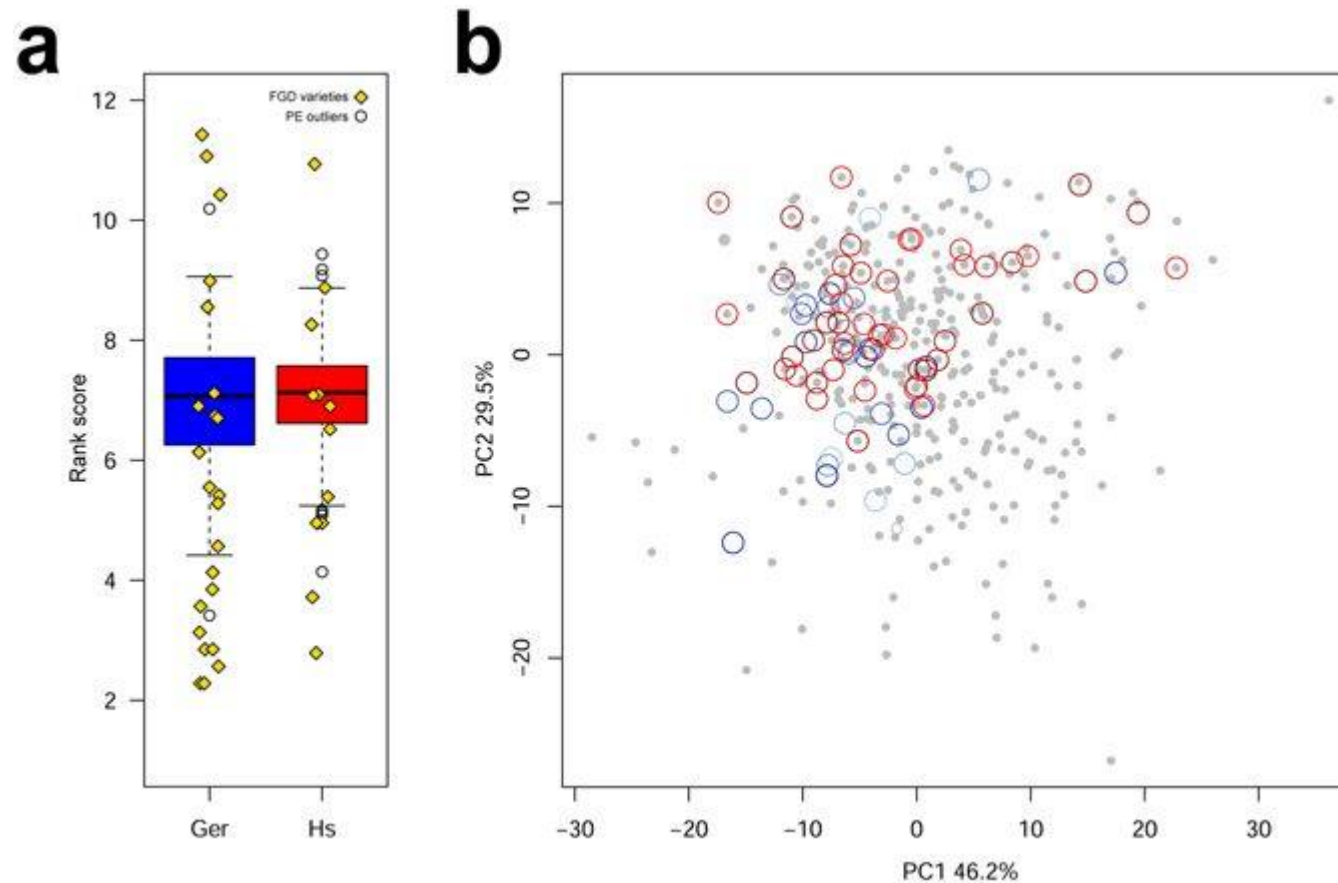
Register the effects of climate on crop performance

van Etten et al. (2019) PNAS **116**(10):4194-4199
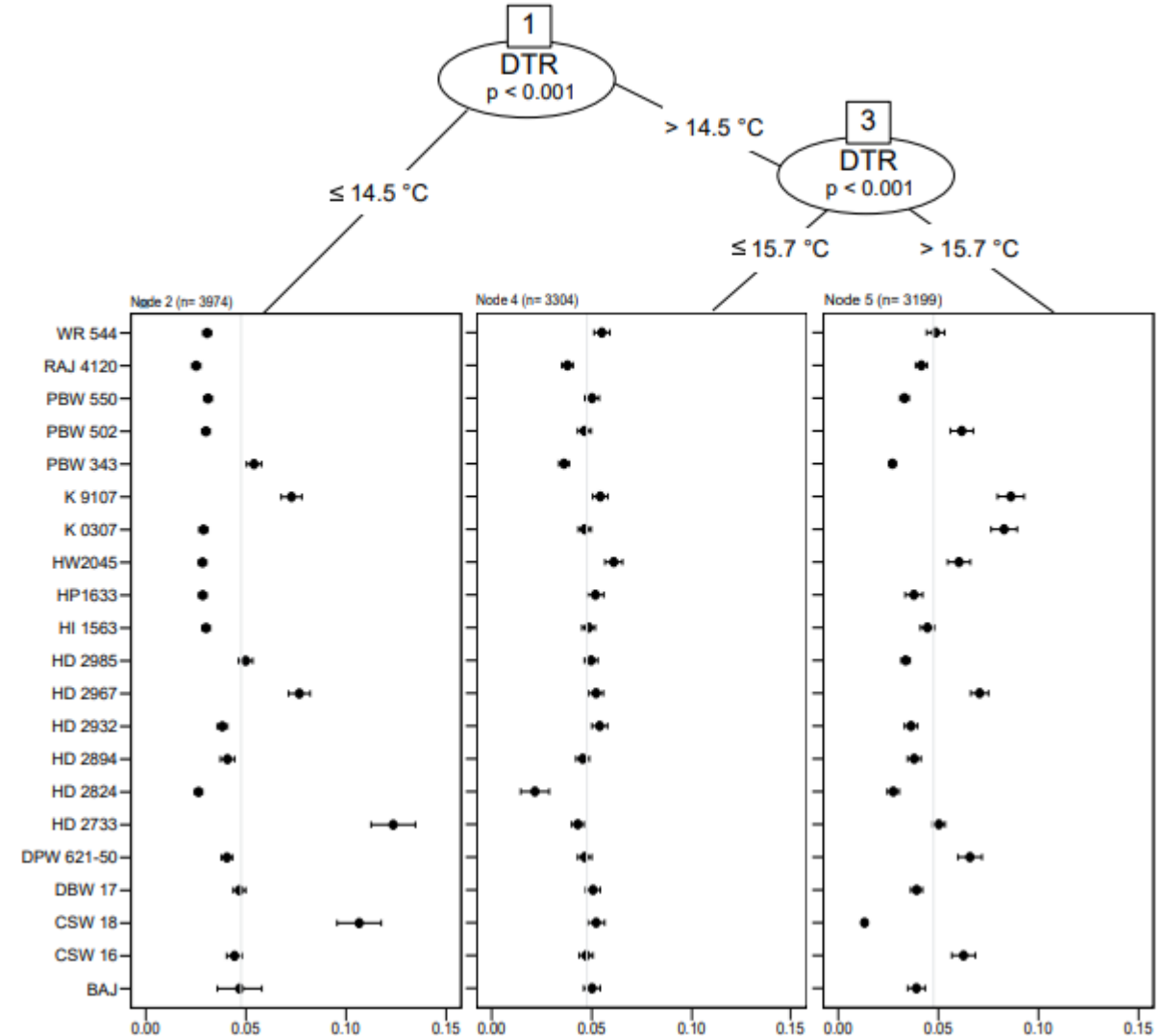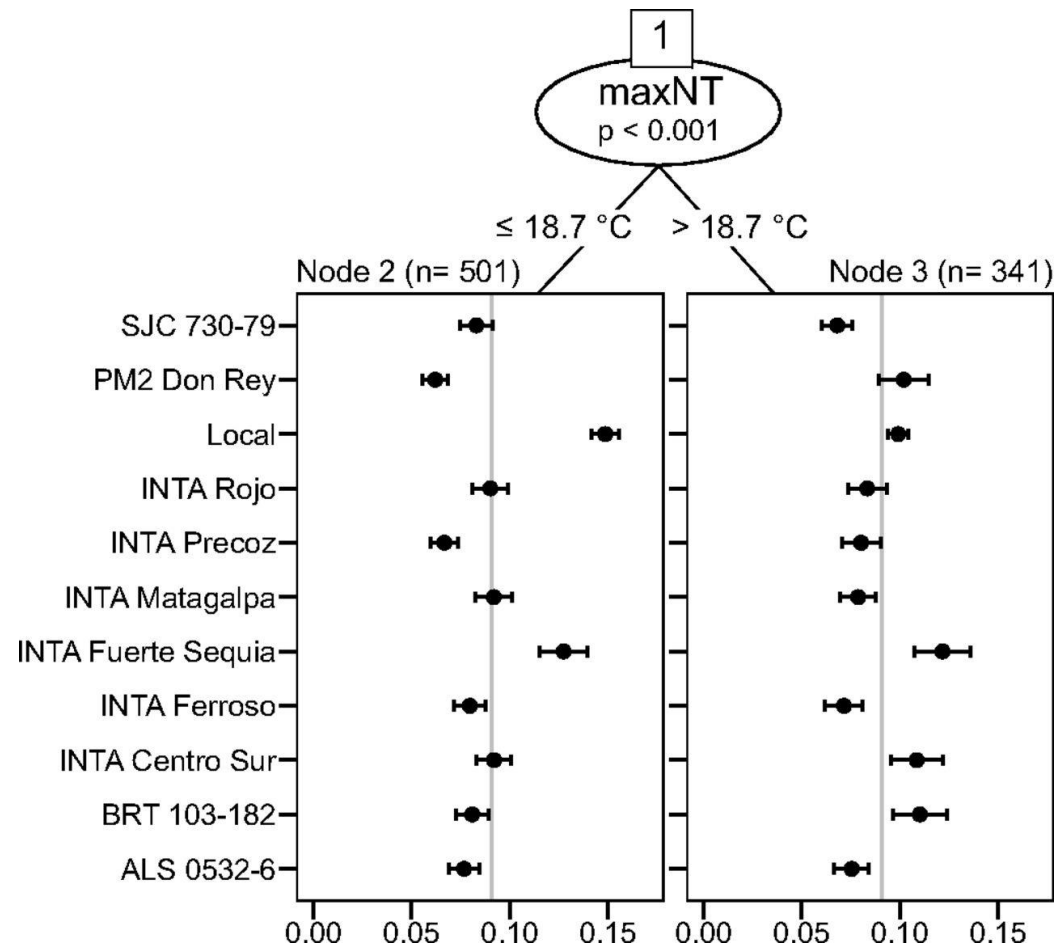
Variety replacement for climate adaptation

van Etten et al. (2019) PNAS **116**(10):4194-4199
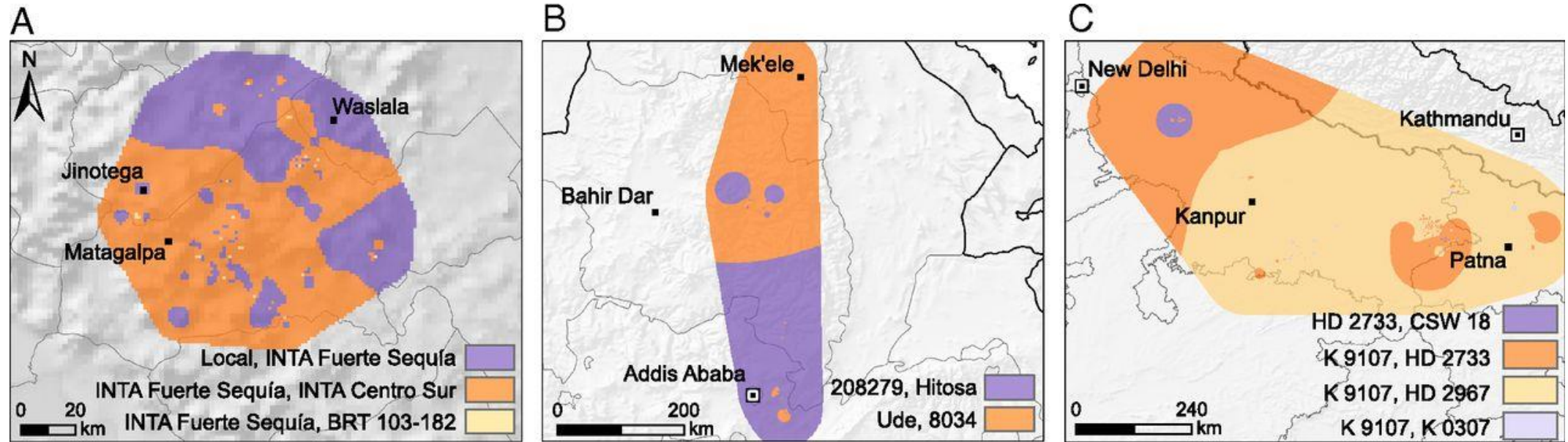
Farmers keep crop diversity

Vaishali (486 farmers)

- Gotra Bidhan 1
- Pusa Sugandh 5
- IR 64
- Sarju 52
- Sahabhagi dhan
- Prabhat
- MTU1010
- Malaviya dhan 2

Samastipur (250 farmers)

- Gotra bidhan1
- Sahbhagi dhan
- Pusa sugandh5
- Annada
- Malviya dhan-2
- Sarju-52
- MTU-1010
- IR-64
- Prabhat
- Rajshree
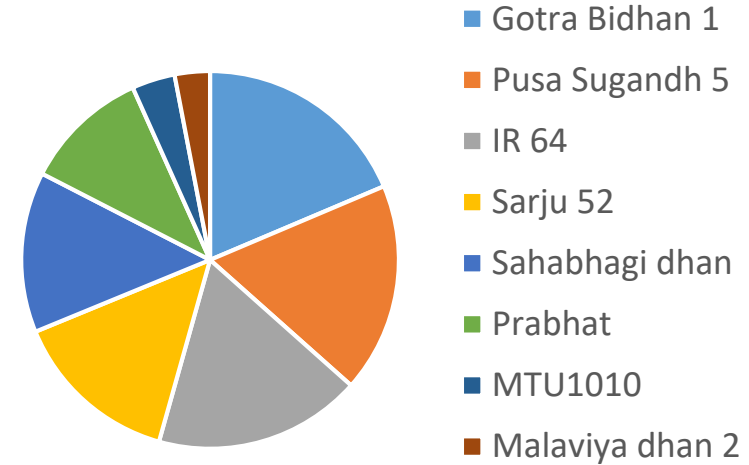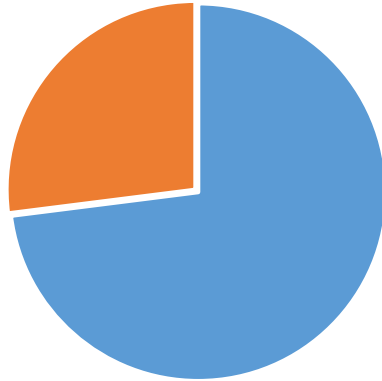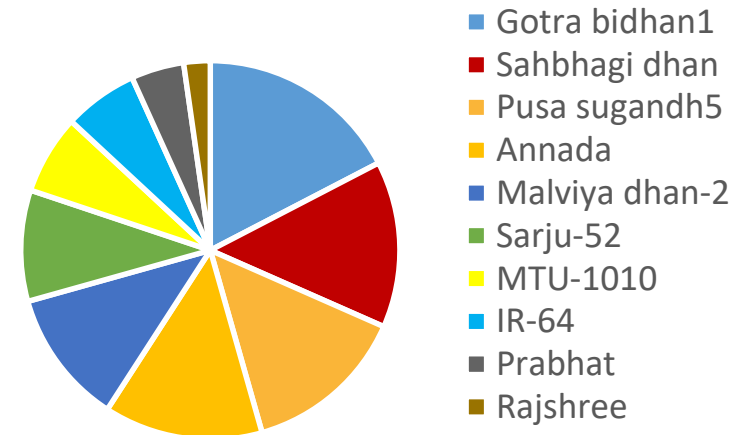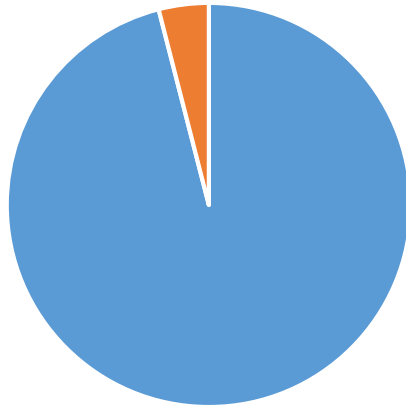
■ Want to save seeds   ■ Don't want to save seeds

Effects: Up-scaled diverse seed production in Honduras

- Many more farmers want to participate in crowdsourcing

  - Local NGO sells tricot packages as "diversity test kits"

  - "Local farmer research committees" now produce seed of many varieties commercially

- National seed law recently changed – CIAL-produced seed can be sold

- First official release of common bean variety after multiple seasons of tricot trialling

Is a cost-effective approach

Cost (USD)

Categories (top to bottom): Admin costs 15%, Coordination, Printed materials, Personnel and transport, Telephone calls, Seeds

Legend: ■ PVS ■ Tricot
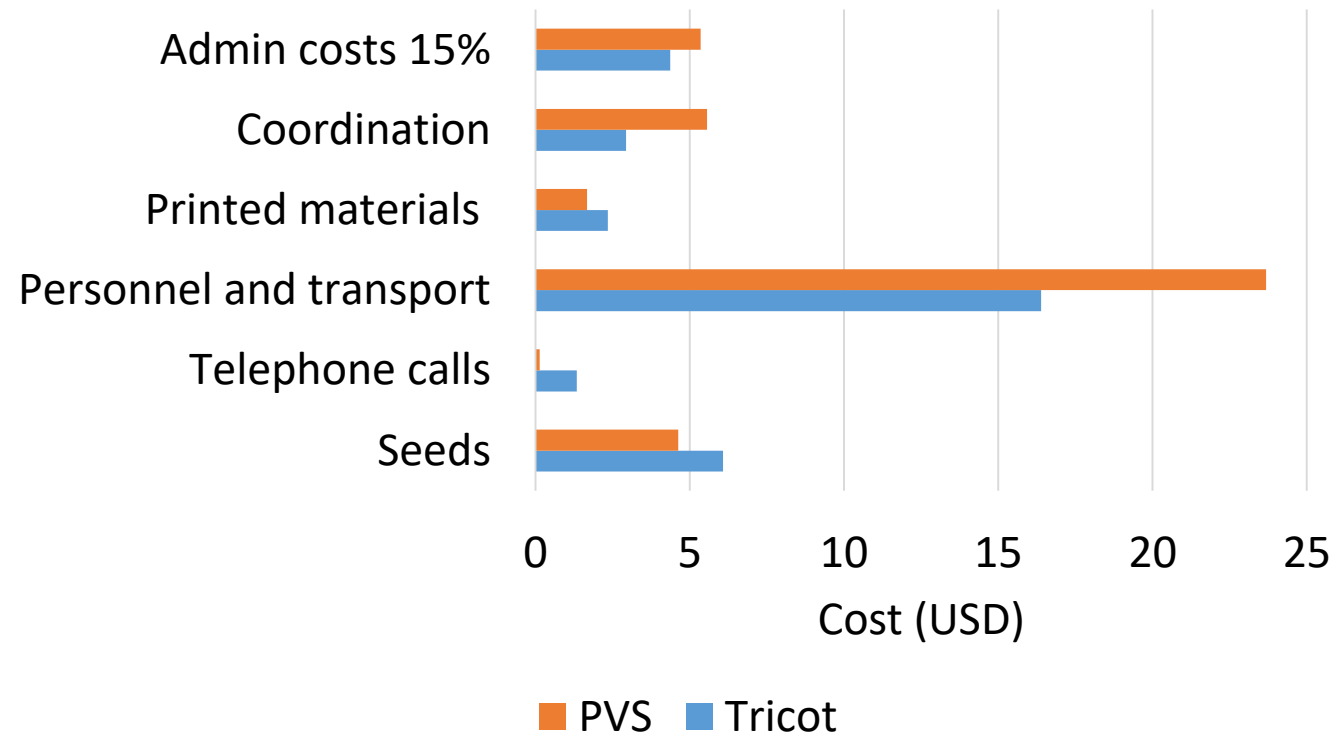
41.01 USD   33.43 USD

Thank you!

This is a compilation of several presentations of the members of Bioversity International's "Information Services and Seed Supplies" Team. If you intend to cite it please do it as:

de Sousa, K; Steinke, J.; van Etten, J. (2019) Farmers' generated data for climate adaptation: evidence from three continents

Other materials used in this training course are available at:

https://github.com/kauedesousa/ClimMobTools

For the editable .ppt files, please send a request to
k.desousa@cgiar.org

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