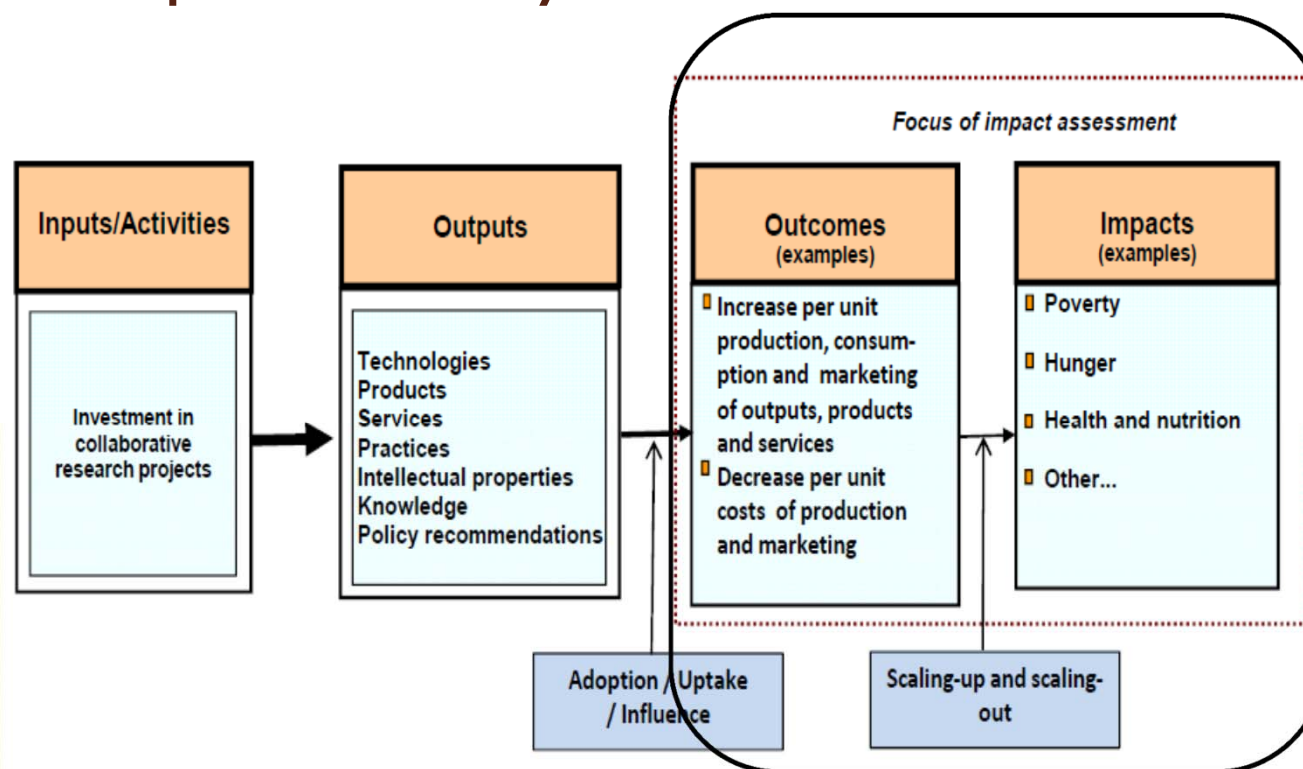


## Seed Systems as a Basis for Achieving Impacts from Research Investments in Bean and Cowpea Breeding



*Byron Reyes, Rick Bernsten, Mywish Maredia, and Eric Crawford*  
*Prepared for the DGP CRSP Global Meeting 7-12-20*  
*Rwanda, Feb. 13-17, 2012*

## Impact Pathways Recalled



Arrows in the impact chain indicate the direction of influence and its thickness indicates level/degree of influence on an effect

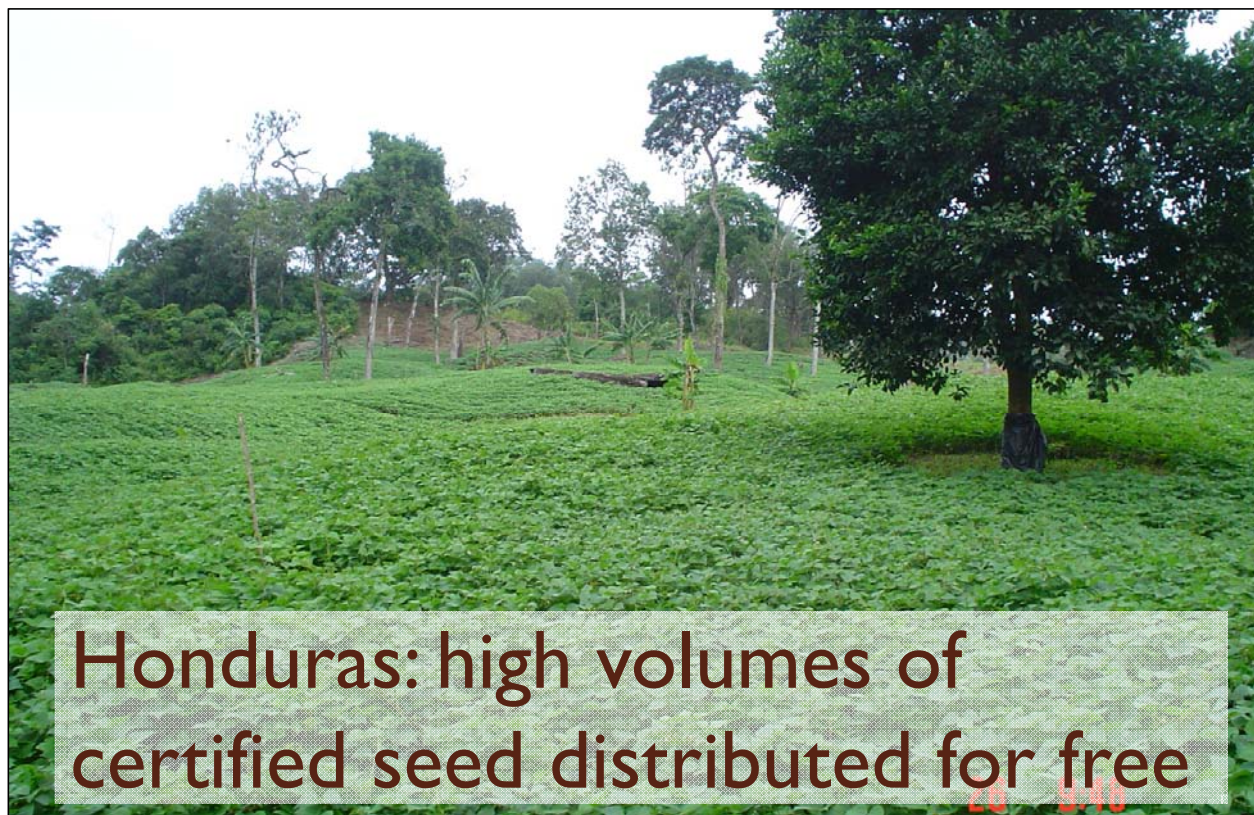
## Going from Outcomes to Impact

- Outputs need to be delivered to ‘end users’
- There are different alternatives to do this, each involving different stakeholders but related to seed systems
- The question we want to answer is:  
Why are seed systems important in order to achieve impact?

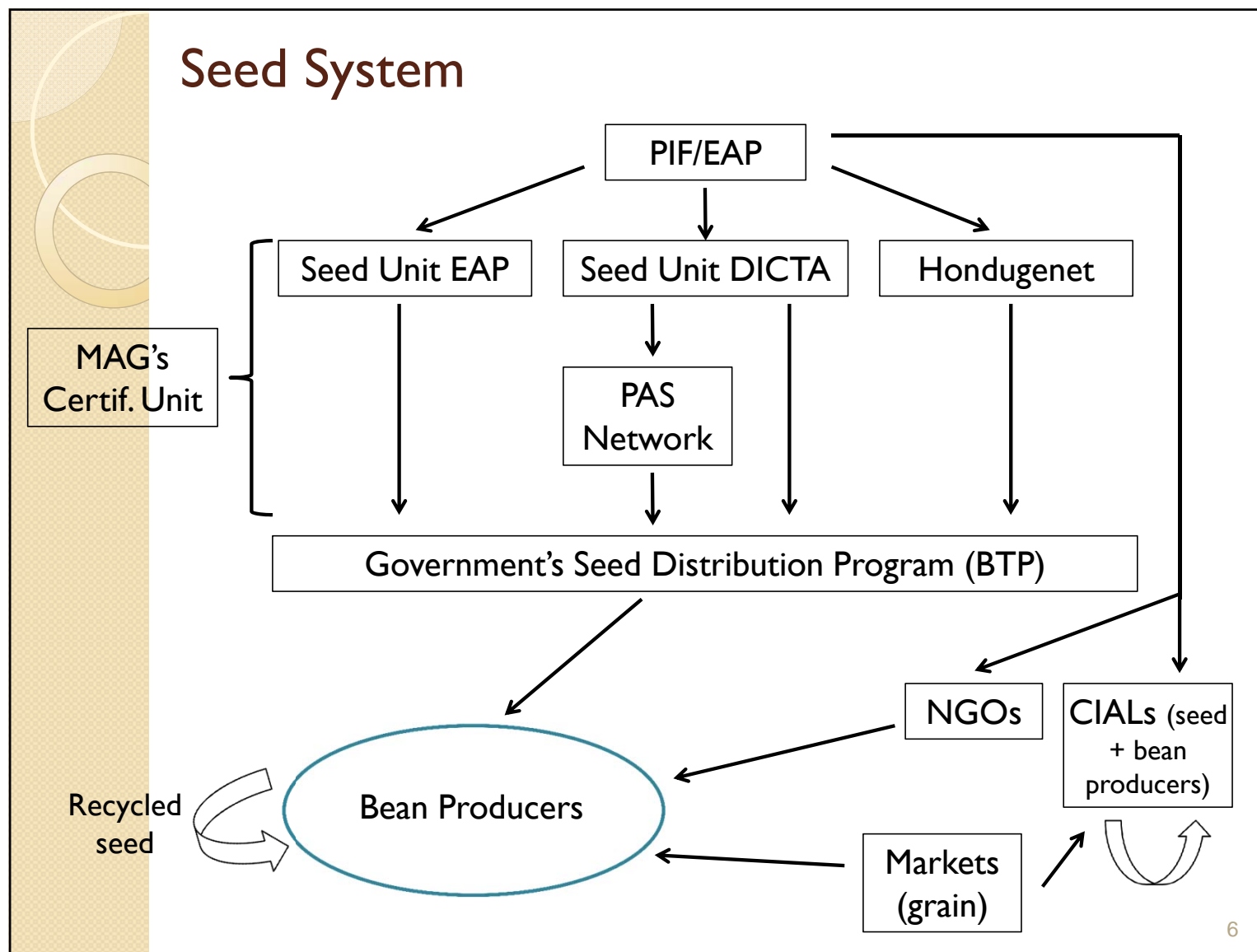
## Outline

- ✓ Will present three case studies:
  - Honduras: high volumes of certified seed distributed for free
  - Ecuador: low volumes of non-conventional seed sold
  - Senegal: certified seed produced
- ✓ Additional considerations
- ✓ Discussion





**Honduras: high volumes of certified seed distributed for free**



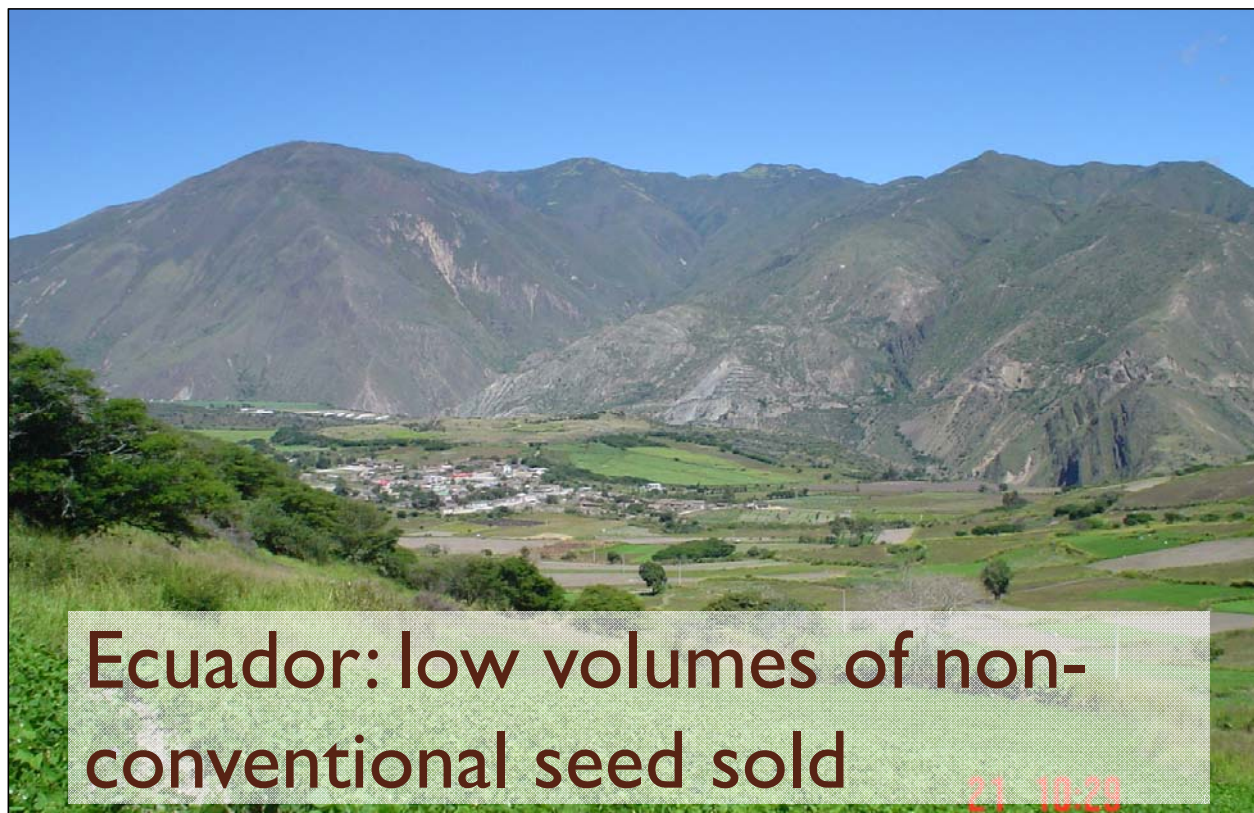
## Impact on producers

- Government's seed program initiated in 2006/2007
- In four years, it distributed for free 3,152 MT of certified seed
- Rough total cost of certified seed => US\$6.9 million (@ \$100/cwt or 45kg-sack)
- On average, 34,672 small-to-medium farmers received certified seed each year

## Impact on producers (continued)

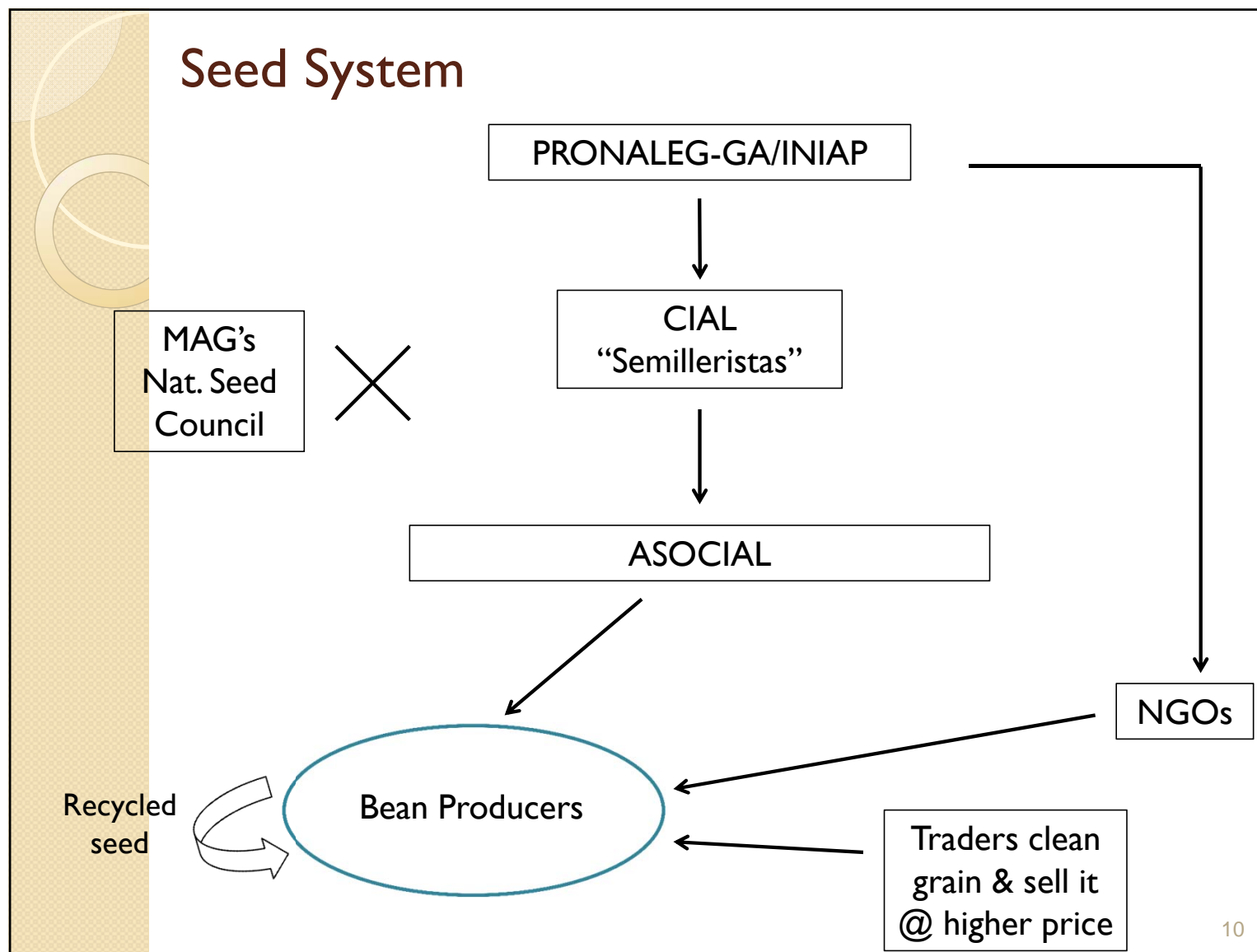
- Certified seed data suggests average (4 yrs.) adoption rates of 18%
- Experts estimate adoption rates of 45% for the same period (certified + recycled)
- Yield gains of new IVs = 12 kg/ha/yr
- Using expert estimations (1991-2015):  
NPV = US\$ 36.6 million  
IRR = 26%





**Ecuador: low volumes of non-conventional seed sold**

21 10:29



## Impact on producers

- ASOCIAL started producing seed in 2007/2008 in Northern Ecuador
- In three years, it sold 38 MT of 'non-conventional' seed
- Rough total cost of seed => US\$79,420 (@ \$95/cwt or 45kg sack)
- Farmers (many CIAL members) purchase this seed (no free seed)

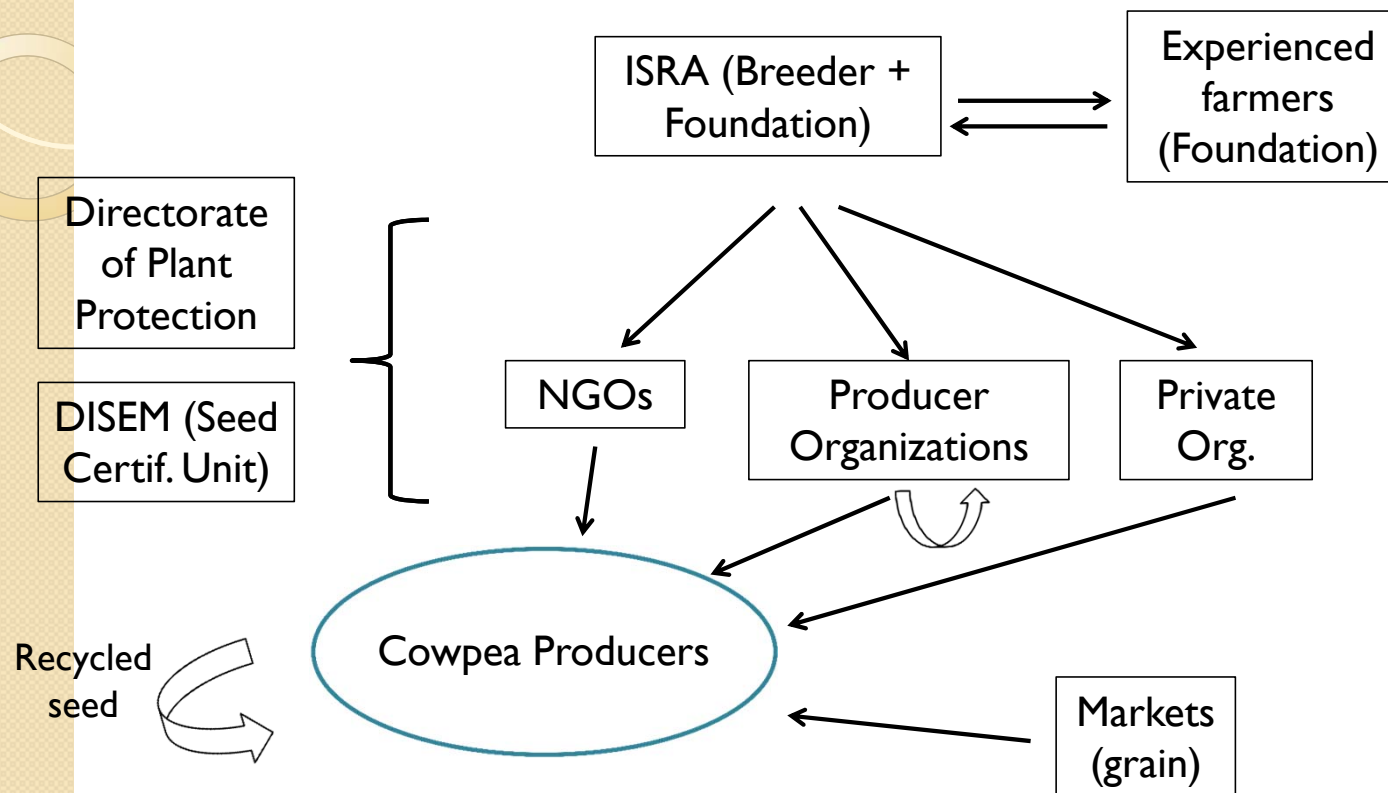
## Impact on producers (continued)

- Non-conventional seed data suggests average (3 yrs.) adoption rates of 2%
- Experts estimate average adoption rates of 49% for the same period (non-conventional + recycled)
- Yield gains of new IVs = 21 kg/ha/yr
- Using expert estimations (1991-2015):  
NPV = US\$ 7.2 million  
IRR = 35%





## Seed System



## Preliminary results on Impact

- In 2010, approx. 2.5 MT of breeder seed of two IVs were produced by ISRA
- Preliminary results suggest that in 2010:
  1. 45% of sampled HH plant at least one cowpea IV & 38% of the sampled cowpea area was planted to IVs
  2. Melakh (1993) and Yacine (2004) are the most widely planted IVs across the sampled farmers
  3. Most adopters of IVs planted recycled seed or seed purchased in the market (grain)
  4. Average yields in the sample are 244 kg/ha (IVs) vs. 104 kg/ha (TVs) (\*\*\*)

## Additional considerations

- Aware of issues regarding seed quality and timely deliver (Honduras, Senegal)
- Demand for 'non-conventional' seed is mainly from CIAL members (Ecuador)
- Sustainable seed systems (avoid bubble market--free seed problem)
- Farmers need technical assistance in addition to receiving seed
- New varieties need to have traits demanded by farmers and consumers



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**Thanks for your attention!**