

Demand led plant variety design

ACIAR

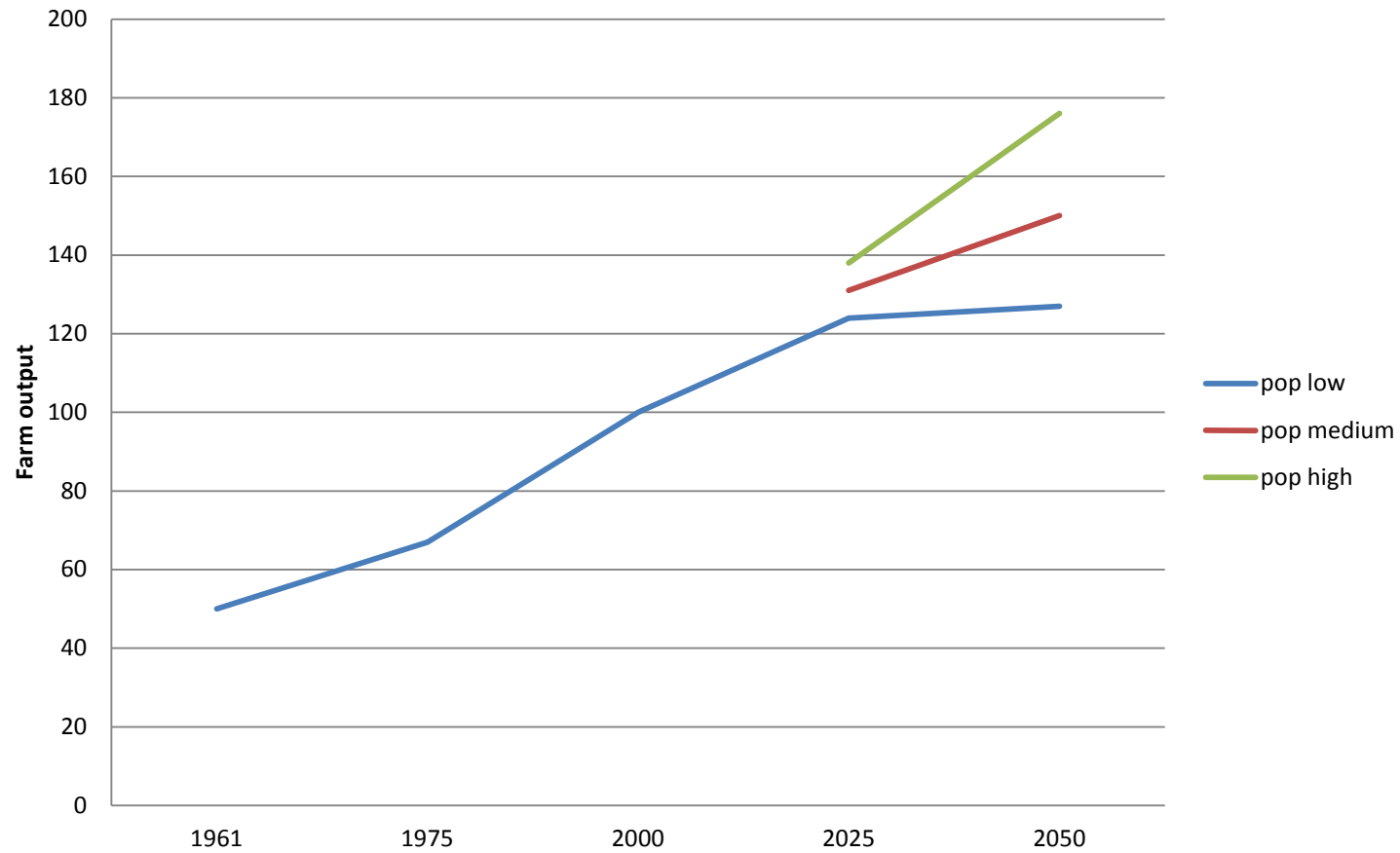
Eric Huttner RPM for Crop
Improvement and Management

AUSTRALIAN CENTRE FOR INTERNATIONAL AGRICULTURAL RESEARCH

An ongoing role for plant variety design to improve livelihoods

- Non genetic contributions to food security
 - Agronomy
 - Infrastructure
 - Markets
- But we still need to produce more food per unit of input
- We now have better genetic tools

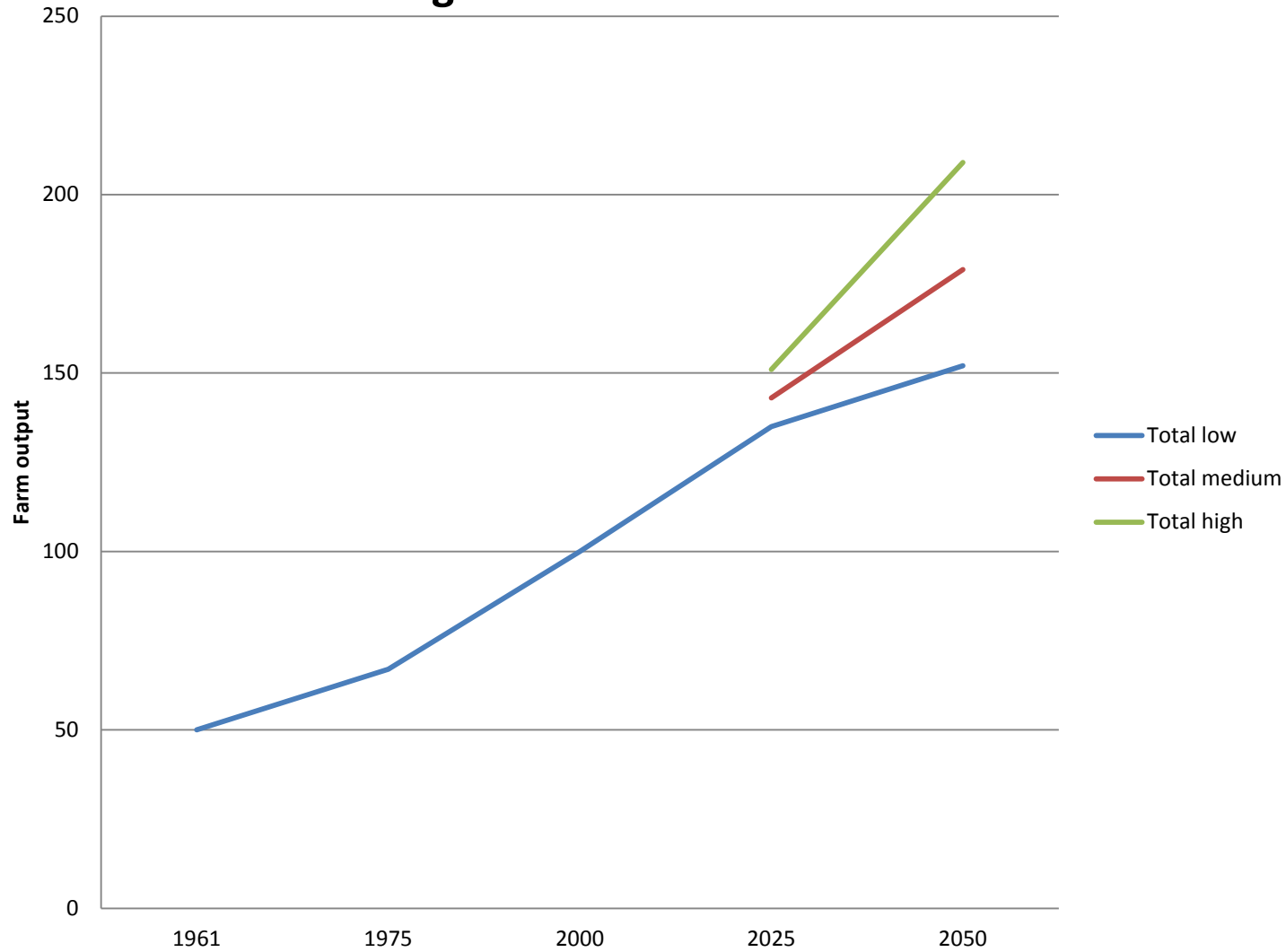
Global demand for farm output (year 2000= 100) Population growth only



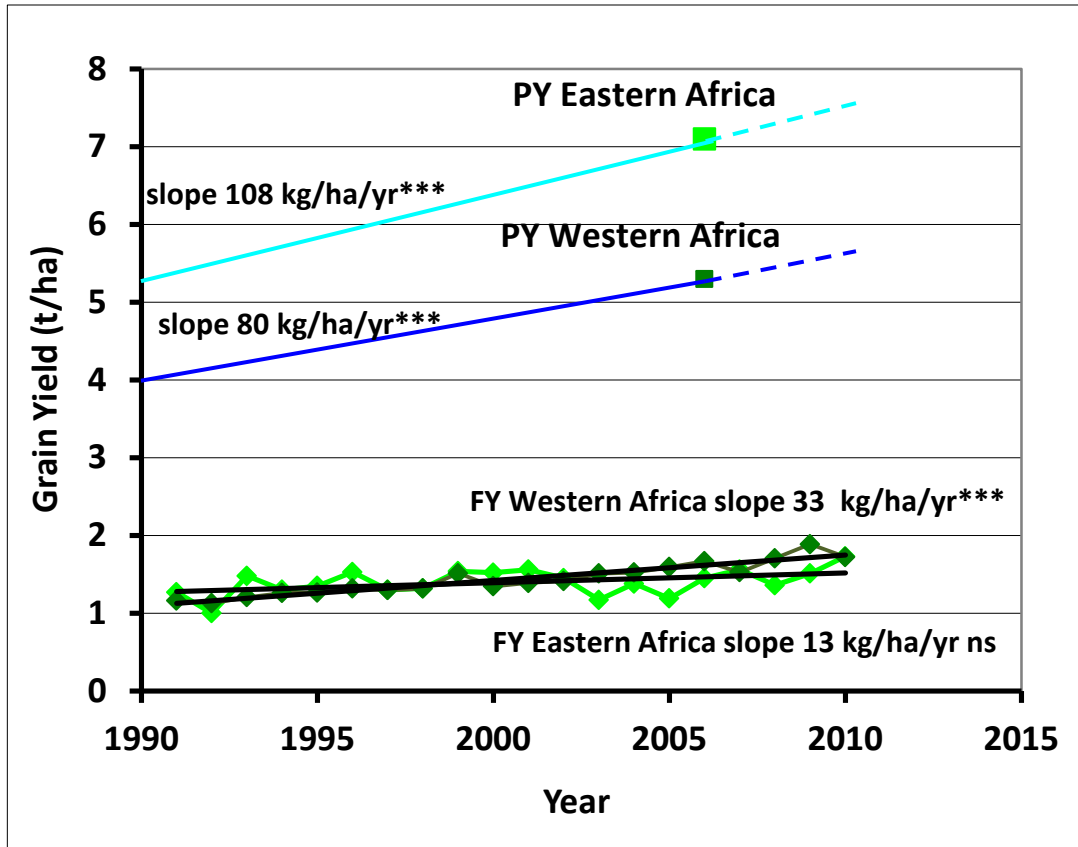
(Tweeten and Thompson 2009, *Farm Policy J* 6, 1–15)

Global demand for farm output (year 2000= 100)

Total agricultural demand: includes new demands, diet, biofuels



Maize in Africa



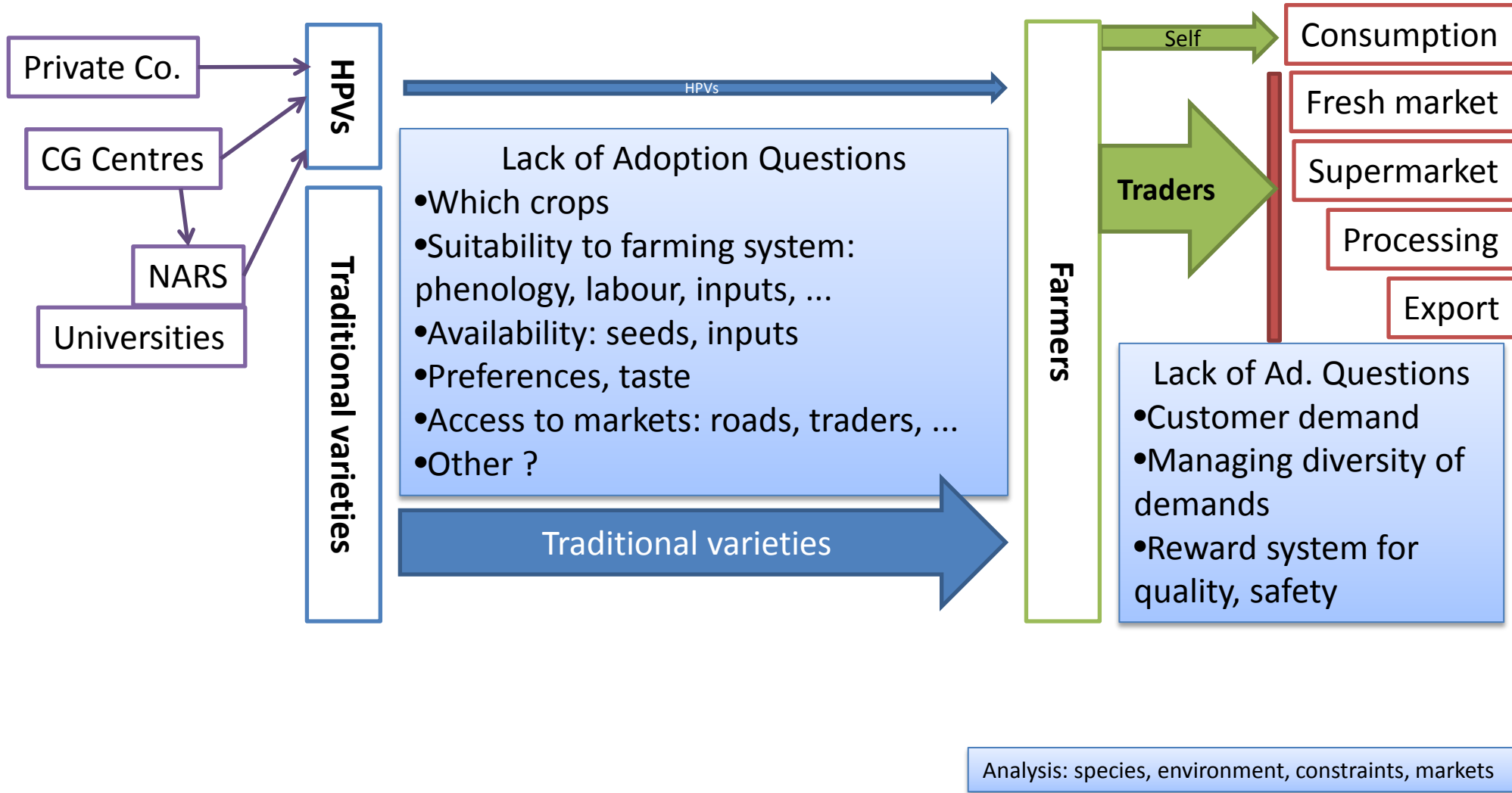
- Agronomy: conservation farming, fertiliser, rotation, intercropping (goes both ways !)
- Genetics for rapid return: stress tolerance, low N, striga^R, ...
- Genetics for longer term: Potential Yield

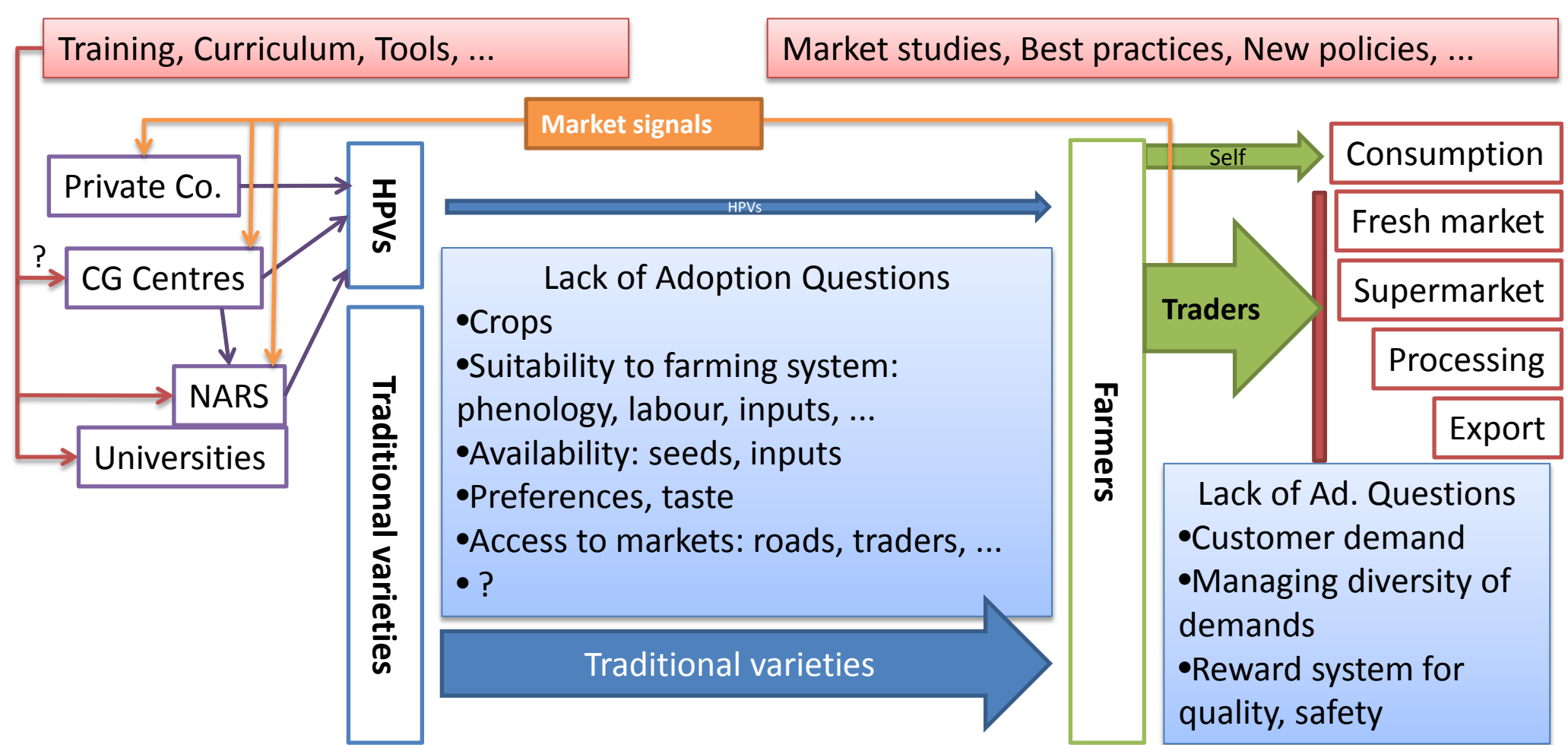
Farm yield (FY) for maize in Africa plotted against year, and potential yield (PY) plotted against year of release for 1991 to 2010.

PY progress based on a 1.5% p.a. increase determined in 2006 vintage hybrids in eastern African mid-altitude zones and western Africa lowland tropics

Fischer et al., 2014, Crop yields and global food security, ACIAR Monograph 158

The project context





FSC-2013-019 Demand-led plant breeding

Intervention: tools, training and policy

Analysis: species, environment, constraints, markets

What will the project do ?

1. Review of existing information:
 - For which crops, environments and farming systems are HPV not adopted ?
 - Reasons for limited adoption
 - > Criteria for **selecting case studies**.
2. Identify methods to do things better. **Balance** market signals with market and production constraints.
3. Teach these methods and present the policy case.

Example of activities: Desktop, Interviews, Surveys, ... ?

How to test relevance (in the timeframe) ?

Global total demand for farm output: growth from population only and from all sources

(Tweeten and Thompson 2009, *Farm Policy J* 6, 1–15) (Year 2000 = 100)

	1961	1975	2000	Variant	2025	2050
Population only	50	67	100	low	124	127
				medium	131	150
				high	138	176
Total agricultural demand				low	135	152
				medium	143	179
				high	151	209