

## Rwandan beans

- Beans (*Phaseolus vulgaris*) are the most important pulse crop for food, nutritional and income security in Rwanda. They are consumed by nearly all the population as cooked or processed green vegetables, or fresh or dry grain, to complement starchy diets with quality proteins, minerals and micronutrients.
- The Rwandan Agriculture Board (RAB) breeding program supports bean farmers in diverse environments: warm and semi-dry, cool and wet, in the low (800 masl) to high (>2300 masl) altitudes.
- Previous farmer participatory research and variety selection approaches (FPR, PVS and PPB) produced some popular varieties, e.g. MAC 44, with others like MAC 42 being less adopted or rejected by clients.

## Market-led variety design study

- Demand-led breeding (DLB) was introduced to involve farmers and all their value chain customers at the earliest stage of new variety design to ensure enhanced adoption.
- RAB conducted an investigative study during 2016 to identify the priority traits preferences of the different clients in the bean value chain (Figure 1).

## Study method

A sample of bean farmers and their value chain customers (N=82) across Rwanda were consulted in focused group discussions with a range of grain samples on display. They were required to address the question:

## What is it that you like most in a bean variety? - Why?

Key preferred characteristics were listed, weighted and ranked. The results were grouped by gender and by customer type (Figures 2-6).



Figure 1. Key steps in the bean value chain

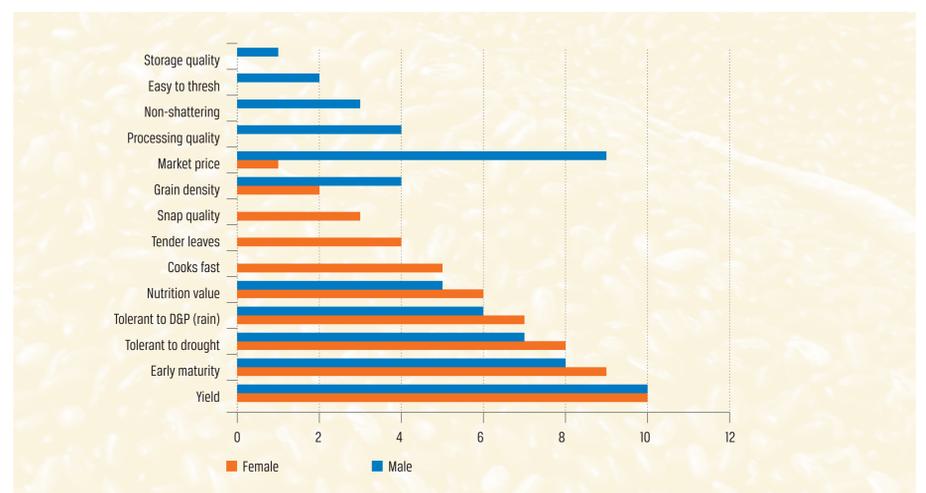


Figure 4. Farmers' preferences by gender 2016



Figure 2. Women participants and group presentation (right)

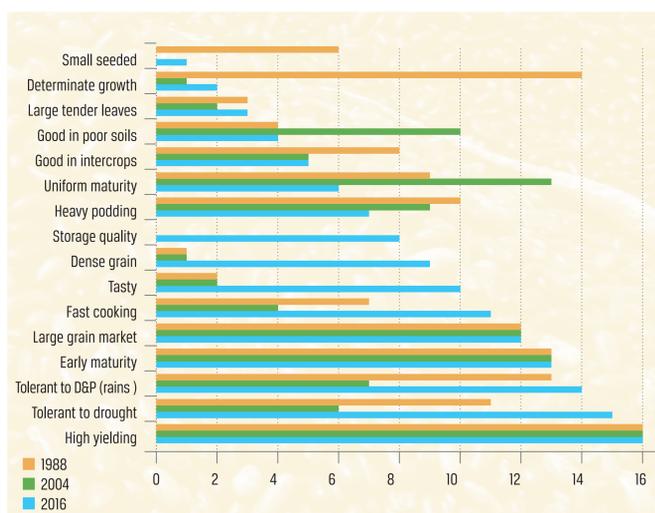


Figure 3. Farmers' preferences 1989, 2004 and 2016



Figure 5. Group discussions

## Recommendation

**High yield, drought, diseases, cooking quality and marketable grain types should be prioritized in designing new bean varieties for Rwandan clients today.**

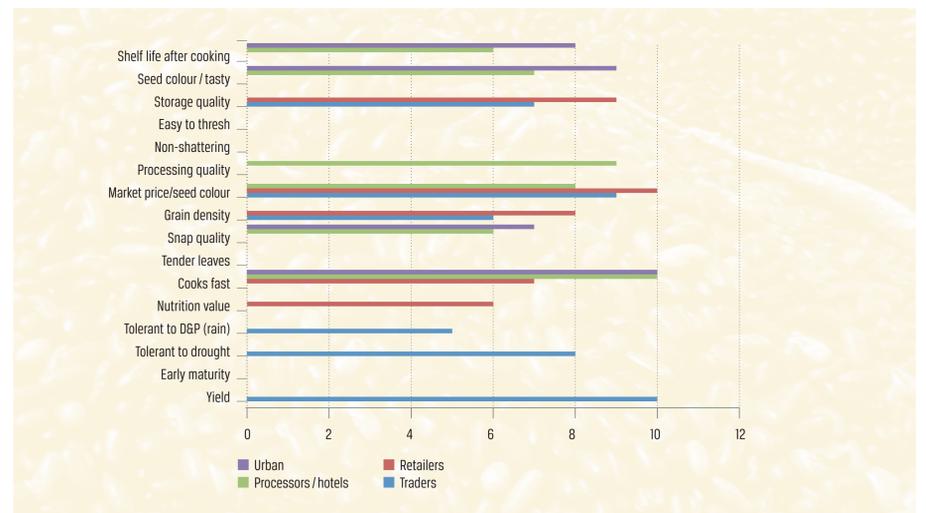


Figure 6. Traders, processors and urban customers' preferences

## Results

- High yield, markets and early maturity remained priority traits over the years (1989 - 2016).
- Fast cooking, drought and disease resistance were emerging as important traits.
- Old known traits were declining in importance (e.g. leaves as vegetables, intercrop and small seeded).
- Gender preferences largely converged but also diverged e.g. grain density (men) and fast-cooking (women).
- Traders, urban dwellers and/or processor customers leaned more to culinary, shelf life and grain density.

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