Towards social impact in breeding: tricot, processing diagnostics and the G+ tools

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Introduction

Breeding has often focused on indisputable traits such as yield dry matter and disease resistance with less eye for crop user's diversity and preferences that determine the use of new varieties. Extensive research by cassava breeding in Nigeria has shown the relevance of social / gender diversity among crop users in identifying crucial traits that would create social impact especially with regards to gender.
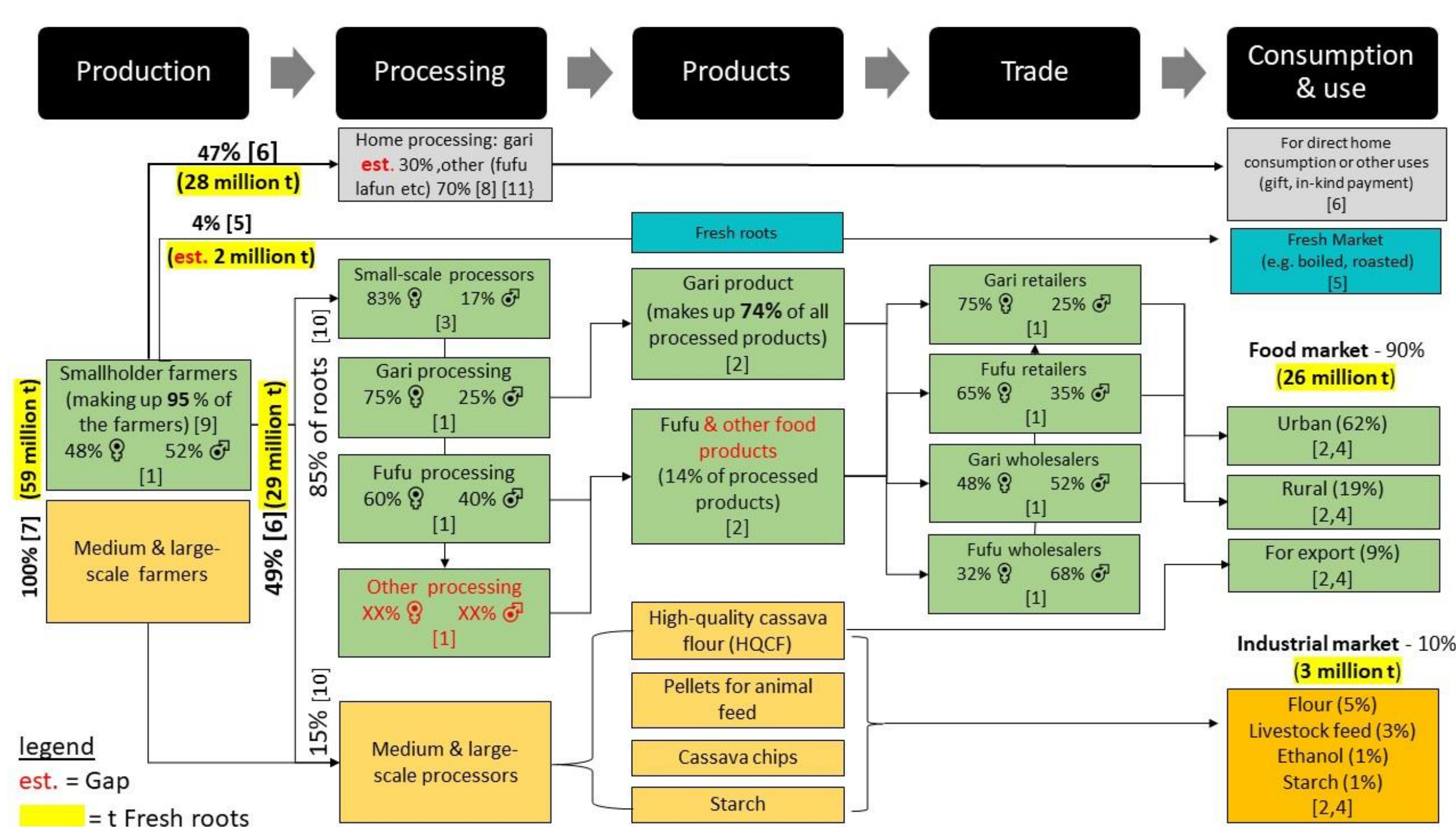
Three approaches have been identified to effectively inform market intelligence and breeding investment cases aimed at social impact.
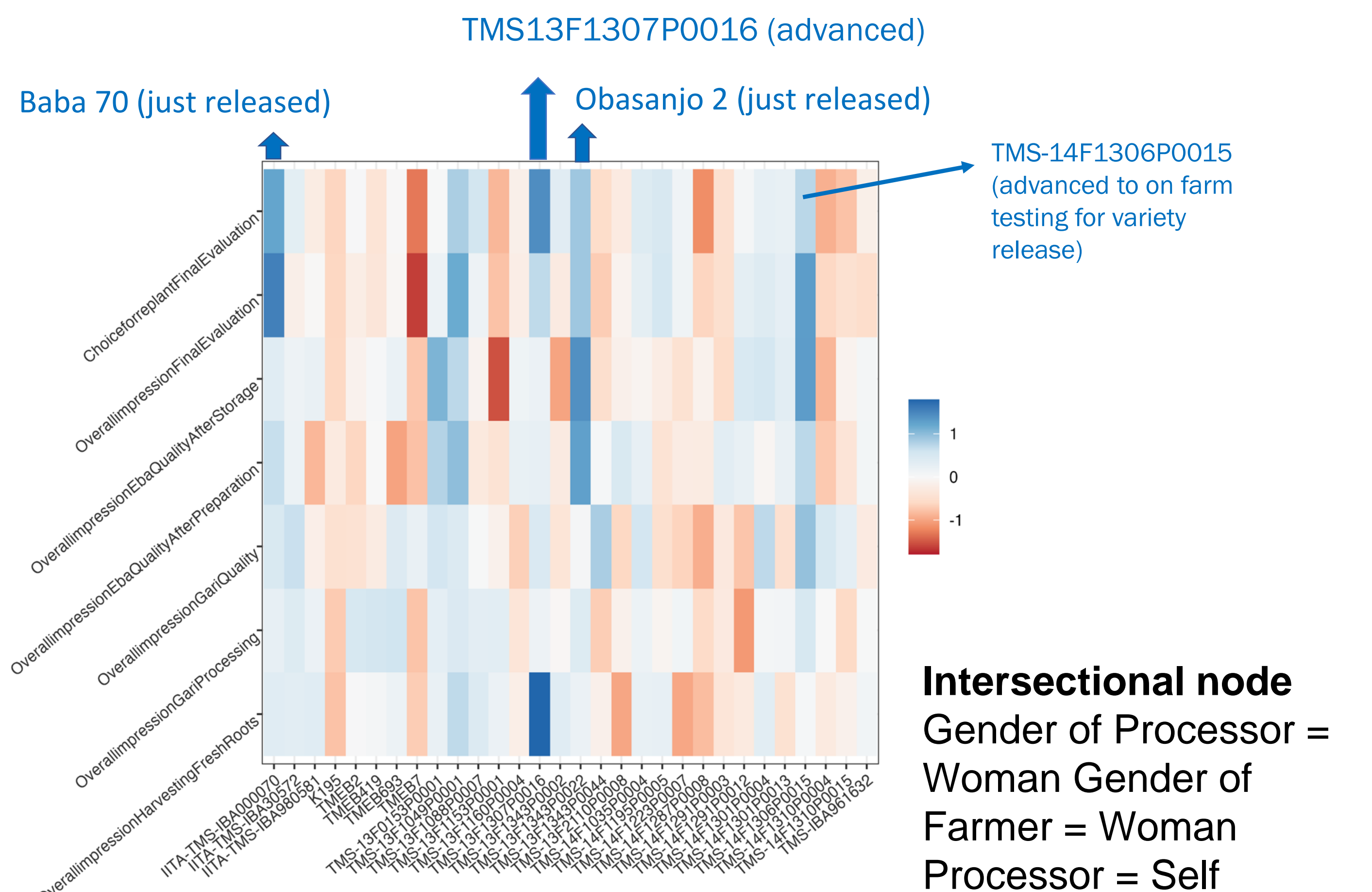
Approaches

1. **G+ tools** have been able to identify gender roles carried out by food chain actors and anticipate benefits and constraints with regards to trait preferences to inform breeding investment cases for social impact. Processing and food product quality traits appear to be crucial for women within the food chain.

2. **The tricot scaled participatory variety selection citizen science** approach has been able to systemize on-farm testing and integrate socially / gender inclusive data with particular eye for specific intersections and gendered task division. In Nigeria, the evaluation included postharvest processing and food product evaluation by the study participants. The method has informed the release of three cassava varieties and is now piloted as an improved method for on-farm testing for variety release. The method is a concrete comparative method to tacitly assess variety and trait preferences to inform breeding investment cases and work towards estimation of genetic gain in farmers' fields.

3. **Processing diagnostics** with women processors within their communities has identified the varietal effect on processing drudgery and food product quality as evaluated by the processors.

Next steps

- Integrate tricot data (https://ClimMob.net) with breeding data (https://breedbase.org). Five use cases have been identified and currently being worked on. One is the integration of social co-variates.

- Linking tricot and processing diagnostic data with the Market Intelligence Initiative to inform breeding investment decisions to optimize social impact.

TMS13F1307P0016 (advanced)
Baba 70 (just released)
Obasanjo 2 (just released)
TMS-14F1306P0015 (advanced to on farm testing for variety release)

Intersectional node
Gender of Processor = Woman Gender of Farmer = Woman Processor = Self

Approach 2: Performance of new cassava clones at different postharvest moments as evaluated by a particular intersection of women tricot trial participants has informed variety release.
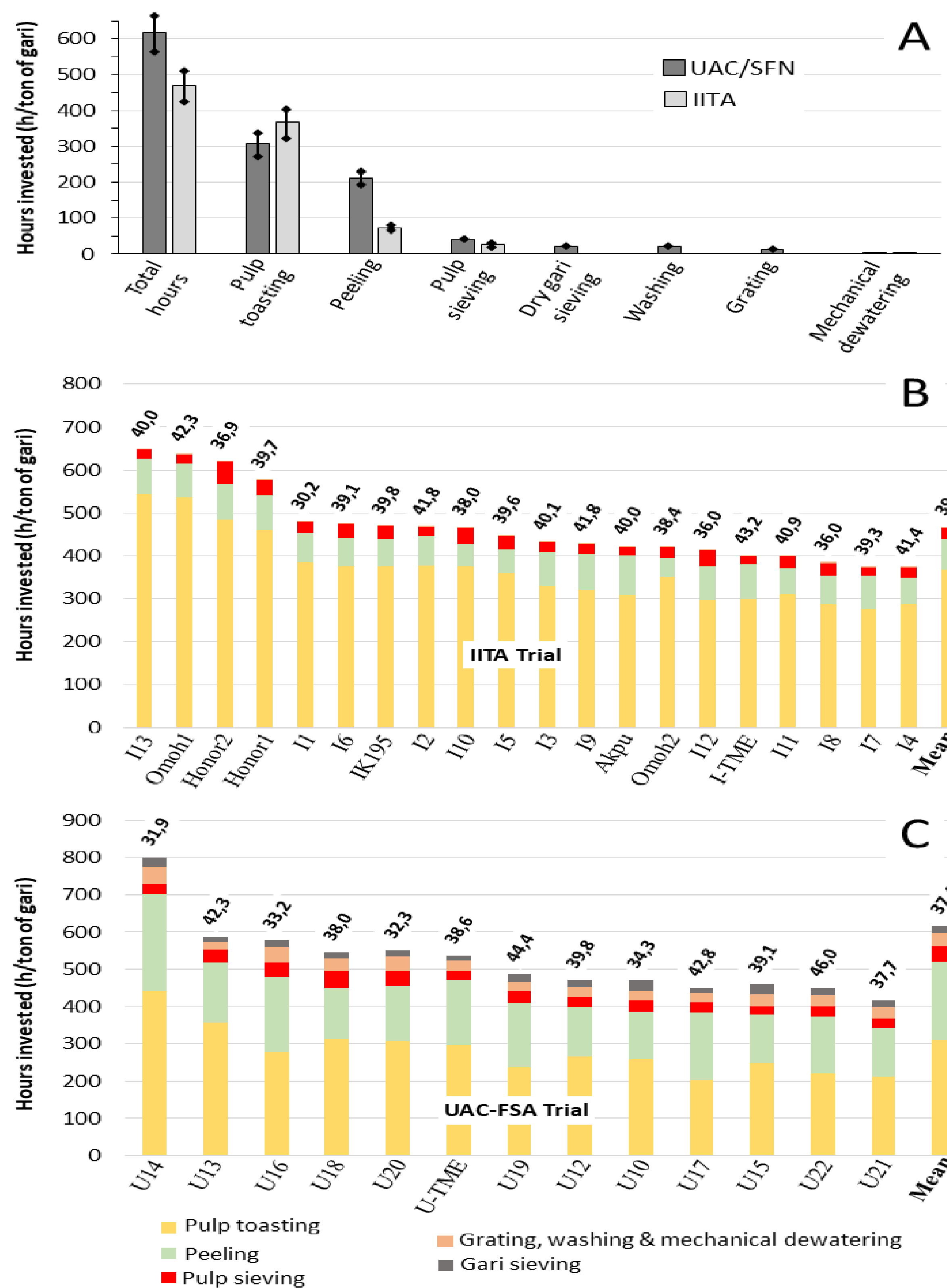
Approach 3: Time needed by processors to carry out different processing operations (A) and process different varieties to gari (B&C) within their communities. Data are from processing diagnostics in Nigeria and Benin.

Approach 1: Gendered product map showing the major importance of home use (gray boxes) by cassava farmers and the clear gendered division of labor within the largest product profile: granulated and paste products (green boxes) where women are overrepresented in processing and marketing.

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