Bean varieties Bred, released and market opportunities for Seed Companies in the East and Central African region

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Introduction
Beans (Phaseolus vulgaris L.) form a major staple food and are the most important grain legume in Kenya where consumption of the crop exceeds 60 kg per person per year (FAO, 2013). Production of beans in medium and high altitudes zones is constrained by bean root rot (BRR) disease especially Pythium spp that causes up to 100% yield loss (Otsyula 2010). Host resistance is the cost effective strategy for managing BRR, particularly for smallholder farmers. Seven resistant varieties to BRR, KK8, KK22, KK15, KK-Rose coco 194 and KK-Red bean16, KK-Red13 and KK-Rosecoco33 have been bred and released for cultivation by farmers. The varieties are however not fully accessed by due lack of seed system to scale improved varieties to enable an elaborate access in a sustainable manner. This resulted in delayed use of newly released varieties and/or shortage of improved bean seed on the market. (Figure 1) This poster presents possible solutions to this challenge.

Methods: Scaling Seed and Other Technical
A number of varieties were evaluated in yield trials every year to identify superior varieties for National performance trials (NPT). Superior varieties identified were discussed in National performance trial committee (NPTC) and recommended for release by National varietal release committee (NVRC). Released varieties were scaled through formal and informal seed system (Figure 2).

Results
Of the 10 varieties entered in NPT in the last 8 years 7 varieties were released and used in scaling up through demonstration and farmer training. The varieties are visibly being grown by farmers indicating their suitability and preferences for farmer needs. Early generation seed (EGS) of the released varieties was produced resulting in a tremendous increase in certified seed production (Figure 3), a clear indication that EGS production is constrained by lack of information, limited interaction between the breeding institutions and commercialization entities.

Through linkages, about 50 acres of EGS is produced every year (Figure 4) for the last 3 years in collaboration with Bubayi seed company. Publicity and promotion of the new varieties has stimulated seed companies and farmers to develop bean seed entrepreneurship exhibited by high request from seed companies for licenses to commercialize new varieties. A record 5 request from seed companies (Elgon seeds company, Bubayi seed, Crops Africa, Freshco and Olerai seeds) in 2015. There is high potential for the new varieties being commercialized in Neighboring countries of Rwanda, Uganda, Burundi, DRC where root rot is a major constraint in bean production.

Conclusions
• Informal and formal seed production and marketing increasingly become a business opportunity for small farmers, local economy and seed companies.
• Established seed systems informal and formal create opportunity to sustain linkages between KALRO and seed entrepreneurs.

References
2. FAO production (2013). Food and Agricultural Organization statistics division

Figure 1: Farmers seed source

Figure 2: Interactive Module for seed systems

Figure 3 EGS and Certified seed production for 5 years

Figure 4: Bean varieties commercialized

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