Study #3934

**Contributing Projects:**
- P1963 - 4. Going to scale with production technology: seed and crop management

**Part I: Public communications**

**Type:** OICR: Outcome Impact Case Report

**Status:** Completed

**Year:** 2020

**Title:** Wide dissemination of high yielding, climate-resilient varieties revives bean production in Zimbabwe, enabling adopters to consume 3.6 kg more beans per person per year

**Short outcome/impact statement:**
The fast-track land reforms of 2000 in Zimbabwe ignited a reduction in bean production as large-scale commercial farming gave way to small scale cropping. In 2015, researchers launched a project aimed at reviving bean production and productivity through dissemination of four high yielding resilient varieties. These had reached 36% additional farming households by 2019. The adopting households now harvest 347 kilograms more beans per hectare, enabling people to consume 3.6 kilograms more beans per person per year.

**Outcome story for communications use:**
Beans are a staple crop in Zimbabwe, where they provide an important source of protein and can improve income and food security. Yet between 2010 and 2015, bean production dropped by 67%, so low that the food industry began relying on imports while many consumers were no longer able to afford beans. With factors including drought, disease and lack of technology, this drop in production was also reflective of a wider agricultural slump, the unintended result of the 2000 national land reform policy that initiated a rocky transition from large to smaller farms.
Since 2015, a flagship project co-launched by the Alliance of Bioversity International and CIAT, has sought to kick-start production and empower smallholder farmers with public-private partnerships that increase access to high quality seeds. With the goal of improving food security, nutrition, incomes, natural resources and gender equity, this project focused on supplying farmers with four high-yielding bean varieties that have traits such as drought-resistance and fortified nutrient content. Less than five years on, over 1 million smallholder farmers have received seeds, and production of preferred bean varieties has increased from 520 tons to 1,840 tons. This has promising ramifications for the future of farming in Zimbabwe, as the 60-70% of the population who rely on agriculture now have the ability to produce and profit from beans, while also providing nutritious food to their families.

InfoGraphic
Improving Food Security and Kickstarting Business in Zimbabwe
https://cgspace.cgiar.org/bitstream/handle/10568/109121/Zimbabwe%20Infog_WEB.pdf?sequence=1 &isAllowed=y
Links to any communications materials relating to this outcome:
  ● https://tinyurl.com/yhgjfwxh
  ● https://www.herald.co.zw
  ● https://www.pabra-africa.org/posters-and-infographics/

Part II: CGIAR system level reporting
Link to Common Results Reporting Indicator of Policies: No
Level of maturity of change reported: Level 3

Links to the Strategic Results Framework:
Sub-IDOs:
  ● Increased availability of diverse nutrient-rich foods
  ● Reduced market barriers
  ● Increase capacity of beneficiaries to adopt research outputs

Is this OICR linked to some SRF 2022/2030 target?: Yes
SRF 2022/2030 targets:
  ● Increased rate of yield for major food staples from current 1%/year
  ● # of more farm households have adopted improved varieties, breeds or trees

Comment: <Not Defined>

Geographic scope:
  ● National

Country(ies):
  ● Zimbabwe

Comments: <Not Defined>

Key Contributors:
Contributing CRPs/Platforms: <Not Defined>
Contributing Flagships:
  ● FP6: Common Beans for nutrition and markets
Contributing Regional programs: <Not Defined>
Contributing external partners:
  ● AGRITEX - Department of Agricultural, Technical and Extension Services (Zimbabwe)
  ● DR&SS - Department of Research and Specialist Services (Zimbabwe)
  ● HarvestPlus

CGIAR innovation(s) or findings that have resulted in this outcome or impact:
- INNOVATION TO BE ADDED -

Innovations: <Not Defined>
Elaboration of Outcome/Impact Statement:

Agriculture used to be at the center of Zimbabwe's economy, but following fast-track land reforms implemented in 2000, its contribution declined as large-scale commercial farming gave way to small scale cropping. The bean subsector suffered a drop of 67% in production between 2010 and 2015, forcing the bean canning industry to rely on imports to run at partial capacity (1). The consumer price of all beans shot up, negatively affecting the quantities consumed.

In 2015, the Alliance of Bioversity International and CIAT together with the Department of Research & Specialist Services (DR&SS) launched a flagship project that stepped-up dissemination of four high-yielding climate resilient bean varieties, including bio-fortified beans, to farmers. The project also integrated the agricultural extension department to strengthen managerial capacity of farmers, raise awareness and stimulate demand for the new varieties while linking the converted farmers to major bean processing industries. Collaborating with about 11 seed companies was a key milestone in the project that grew the supply of certified seed from 520 tons in 2015 to 1,840 tons in 2019 (1), while at the same time moving the agro dealers’ networks closer to farmers. One result was a 60% drop in the average distance from the farm to a seed dealer by 2018 (2, 3).

The adoption of improved varieties jumped five-fold, from 9% in 2016 to 47% in 2018, enabling the adopting farmers to harvest 347 kilograms per hectare more beans than was possible using traditional varieties (2). The increased yield has boosted bean consumption by an additional 3.6 kilograms per person per year. The last five years have also shown a positive recovery in the agro-industry and import substitution for canning beans: the number of farmers selling to processors increased from 250,000 in 2016 to 540,000 in 2019, while the number of consumers accessing processed bean-based food products increased from 3,000 in 2015 to 91,000 in 2019 (1).

This progress is however, threatened by the growing risks of climatic variability as many farmers use little technology to combat disease and drought. The Pan-Africa Bean Research Alliance (PABRA) is expanding climate services piloted in Rwanda to curb the risks associated with climate change in Zimbabwe in order to ensure sustainability of the results (4).
References cited:
Quantification:

**Type of quantification:** a) Actual counts or estimates from a particular study (please provide reference)

**Number:** 12768.00

**Unit:** been farming households

**Comments:** The survey was implemented in 15 districts that account for 18,059 ha of bean area. A sample surveyed was selected to the 15 districts and hence can be extrapolated. The average number of bean field cultivated in this sample was 1.1 of 0.36ha in size meaning that the average bean area per grower is 0.396Ha. Using the average bean area from the survey is 0.396Ha and district total bean area of 18059 Ha (computed from National production survey data of 2015), we divide the total bean area in the study area by the bean area per household to estimate the number of bean growing households in the study area as 45,603. Then, since the adoption rate of the promoted varieties increased from 9 to 47% bean growing households, the additional 12,768 growers benefited from the new varieties under the project is computed as (0.47-0.09)*45,603.

**Type of quantification:** a) Actual counts or estimates from a particular study (please provide reference)

**Number:** 74060.00

**Unit:** people

**Comments:** To compute the additional number of people benefiting from increased bean consumption, we used the average household size of 5.8 people (3) multiplied by the number of additional adopters.

**Type of quantification:** a) Actual counts or estimates from a particular study (please provide reference)

**Number:** 266616.00

**Unit:** Kilograms of bean

**Comments:** To compute additional consumption demand, we multiplied additional consumption per person per year of 3.6 kg multiplied by the number of additional consumers 74060 people to get 266,616 kg of bean consumed as additional

**Gender, Youth, Capacity Development and Climate Change:**

**Gender relevance:** 0 - Not Targeted

**Youth relevance:** 0 - Not Targeted

**CapDev relevance:** 1 - Significant

Main achievements with specific CapDev relevance: The project collaborated with agricultural extension for training of farmers in good agricultural practices (3, 6).

**Climate Change relevance:** 1 - Significant

Describe main achievements with specific Climate Change relevance: Research component evaluated suitability of some varieties under changing climate condition thereby informing developing climate smart varieties (5)

**Other cross-cutting dimensions:** No

**Other cross-cutting dimensions description:** <Not Defined>

**Outcome Impact Case Report link:** Study #3934
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