



CRP 2020 Reviews: Wheat



Advisory
Services

3 July 2020

Evaluation Brief Number 03

Background

WHEAT targets a sustained increase in yield of 1.4 percent a year with equal contributions from breeding and agronomy, the two pillars of the program, further supported by R&D efforts to enable adoption and subsequent scaling, of which policy is a significant part.

Purpose

The primary purpose of the review is to assess the extent to which the WHEAT is delivering quality of science and demonstrating effectiveness in relation to its theories of change (ToCs), with a view to identifying lessons for future research modalities.

Review Questions & Methods

- (1) To what extent does the CRP deliver quality of science, based on its work from 2017 through 2019?
- (2) What outputs and outcomes have been achieved and what is their importance?
- (3) What is the evidence for future effectiveness within the life of the program (through 2021) considering the comparative advantages of the CRP and its FPs and drawing on the CRP and FPs progression according to their ToC?

The review used a combination of methods. For Quality of science, a subsample of publications was read and analyzed in detail to complement the quantitative analysis, as well as data from surveys, interviews and documents focusing on technological outputs, policy and capacity building. To assess effectiveness, data were gathered using desk review and interviews.

Selected Findings & Conclusions

With approximately 80 scientists, WHEAT is subcritical. Over decades, WHEAT has catalyzed a global network of R&D that has delivered and continues to deliver a disproportionate wealth of outputs in relation to investment. Partnerships, and WHEAT reputation as a reliable partner, are vulnerable to funding volatility.

The network of partners might be scale free – i.e., driven by preferential attachment or the rich-get-richer, with implications for (1) inclusiveness, and (2) resilience – the system is resilient to random perturbation, but vulnerable to disruption of large nodes such as the centralized breeding system.

Almost 4 in 5 (79%) of the scientific publications were in top 50% of journals; 21% of the publications in the bottom half is a symptom that needs attention. Publications in Quartile 1 journals (Q1, top 25%) were world-class and some pushed scientific boundaries; publications in Q2 journals were sound but often routine work; publications in Q3Q4 journals commonly featured flaws.

In 2017- 2019, WHEAT mainly achieved its planned outputs and outcomes, and unplanned outcomes. WHEAT did not drop any research line, and added research priorities on mechanization (FP4) and soil-borne diseases (FP3) in 2017.

WHEAT's roles, responsibilities and accountabilities are clearly defined and exercised, and governance is sufficiently independent. Slight challenges related to funding exist. M&E has adequately supported the CRP, but redundant reporting and frequently changing requirements are burdensome.

“Gender” is used as a research focus, and to identify a research or capacity development beneficiary; gender achievements in research, while often notable, were often siloed. The CGIAR approved WHEAT’s approach to Youth (along with gender) and results on youth reflect that agreement, with a notable achievement in 2017 that informs youth oriented R4D.

The ToC provides an explicit shared thinking about how change comes about in a larger context, and is useful for (1) priority setting, (2) assessing contribution of scientific outputs, (3) seeking and justifying funding, (4) mapping trajectory to impact and (5) reporting, but is unsuitable for (6) assessing WHEAT or its Flagships effectiveness by judging progress towards the SLOs.

Wheat as a crop is bound to be central to global food security in the foreseeable future. WHEAT as a R&D agent has a track record of delivering local solutions with a global perspective and is well positioned to continue this trajectory in the next decade. Opportunities and challenges for the way ahead include: the risk of fragmenting the global breeding program; restrictions to exchange germplasm and ideas; the opportunity to integrate R&D in agronomy; misguided emphasis on minor crops; and CGIAR’s focus on process at the expense of results.

Recommendations

- Recommendation 1: Support strategic investment in network development and maintenance.
- Recommendation 2: Investigate the nature of the network using larger samples and complementary metrics beyond authorship, to ensure network resilience in response to both random and targeted disruptions. Consider opportunities for expanding networks beyond current nodes.
- Recommendation 3: Set targets (time frame, rates) to shift a proportion of Q2 papers to Q1; and to phase out Q3 and Q4 papers. Set up mentoring systems to pre-empt lower quality papers in the first place. Revise evaluation and reward system to improve the quality-to-volume ratio of scientific output.
- Recommendation 4: Establish how WHEAT, or any CRP, will be assessed for effectiveness, when the proposal is submitted and approved, and set clear criteria for judging that effectiveness. Consider alternative suggestions for assessing WHEAT’s effectiveness, which can also be used for improving the intervention, management decisions, and judgement.
- Recommendation 5: Continue but reduce the focus on using indicators and other approaches that use quantitative data, as they are necessary to most donors. Increasing the use of case studies that focus on countries or themes (e.g. Ethiopia or mechanization) will likely bring broader perspectives and a more informed (deeper) understanding of WHEAT’s outcomes, and its effectiveness.
- Recommendation 6: Select and integrate a few key gender findings that are useful to specific FP interventions or research, and include these gender aspects in effectiveness assessments. Require collection and reporting of gender statistics for all training, workshops, and conferences; use statistics to better understand and improve participation levels.
- Recommendation 7: Use the 2017 research paper to consider how to bundle youth-relevant R4D across CRPs and provide a core budget.
- Recommendation 8: Continue to refine the ToC, and recognize its five uses, in its current form. Do not assess the CRP’s progress towards the identified SLOs to judge WHEAT’s effectiveness. Explore what WHEAT accomplished within their selected areas of the ToC, how these areas were selected, how results contributed to the global effort, and why it’s important.
- Recommendation 9: Ensure support to both modernization of breeding process and integrated approaches to sustainable intensification, including mechanization. For management, monitoring and evaluation with purpose, consider integrating elements based on well-known social and scientific theories.
- Recommendation 10: Given that the CRP phase will end in 2021, little time remains for any shifts in CRP management, governance, or resources/budgets. Any shifts should be done to align with the One CGIAR.

Team

- Victor Sadras (Team Leader)
- Donna Podems

The full WHEAT Report is provided at the following link: <https://bit.ly/WHEAT-CRP2020-Review>

