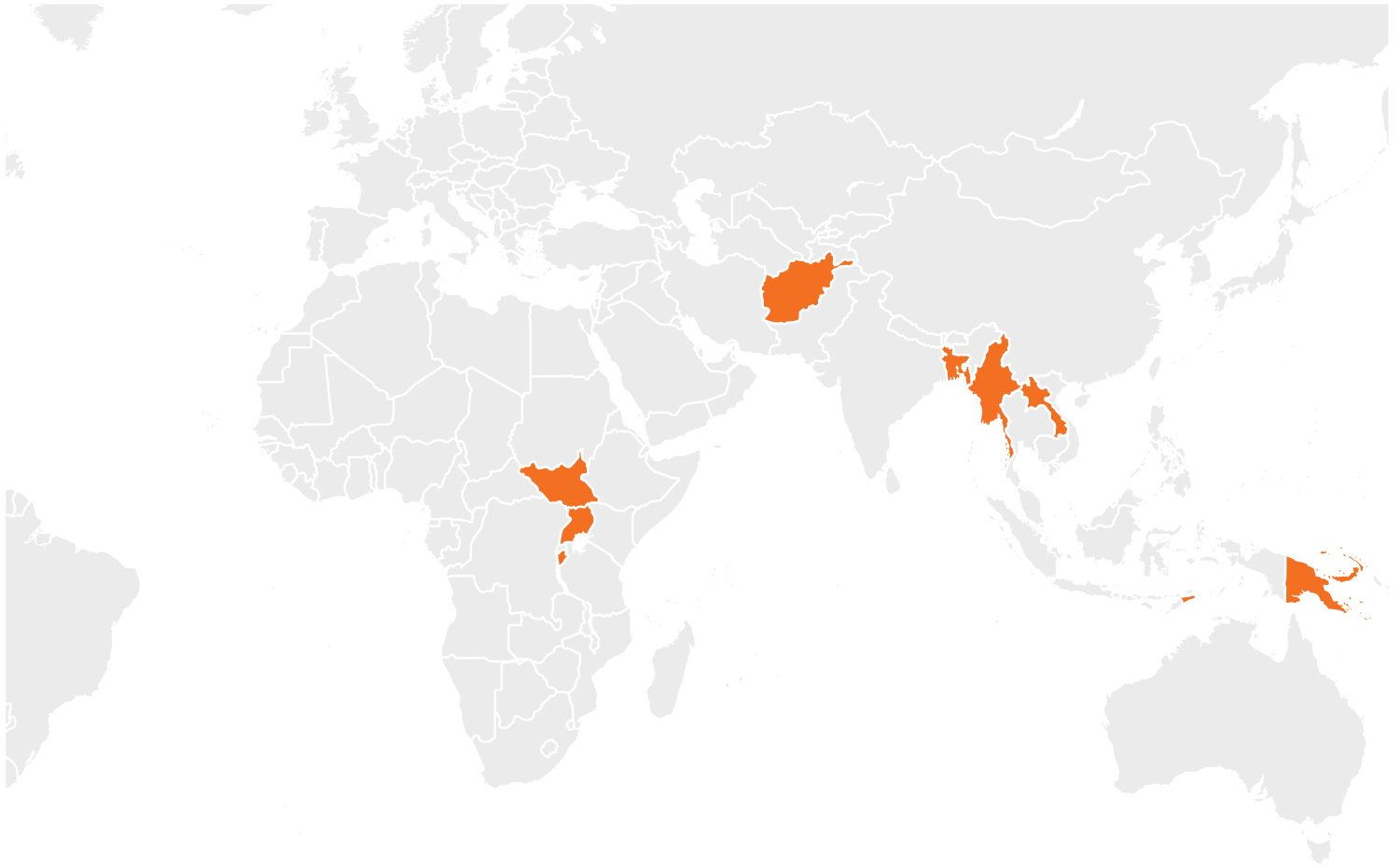




META REVIEW: NUTRITION- SENSITIVE AGRICULTURE



Acknowledgments

This evidence brief summarises the results from a nutrition-sensitive agriculture meta review, conducted from August to November 2023.

World Vision Australia (WVA) commissioned independent consultant Dr. Charlotte Lane from Food Security Evidence Brokerage to conduct the review. Technical support from WVA was provided by Dr. Karen Mejos, Evidence Building Advisor; Dr. Rob Kelly, Senior Food Security and Resilience Advisor; and Dr. Saba Mebrahtu Habte, Impact Evidence Building Manager. The final report has benefited from reviews by Rivika Bisht, Evidence Building Advisor; Diana Johannis, Inclusive Economic Development Advisor; Cashelle Dunn, Disability Advisor; and Katie Chalk, ANCP Manager, WVA.

This secondary data analysis was only made possible through the impressive work of the research teams who conducted the evaluations in this report. We also wish to acknowledge and thank the project implementation teams and the evaluation participants for their willingness to share their time and perspectives.

This meta review was supported by the Australian Government through the Australian NGO Cooperation Program (ANCP). The views expressed in this publication are the author's alone and are not necessarily the views of the Australian Government. The 13 evaluated projects included in this review were implemented in nine countries across the Pacific, Southeast Asia, South Asia, and East Africa, with funding from the Australian Government Department of Foreign Affairs and Trade (DFAT), ANCP, the European Union and the World Bank.

All photos © World Vision 2024

Front cover photo: Brothers Wani (left) and Joseph (right) love helping their mother during harvest season. Through the GREAN project in South Sudan, their parents learned about seed multiplication and handling practices, helping to improve communities' food security.



SUMMARY OF FINDINGS

World Vision is committed to building the global evidence base for nutrition-sensitive agriculture to inform lasting solutions to hunger and malnutrition¹. Climate change and environmental degradation pose significant threats to global food systems and nutrition. Agriculture, through more nutrition-sensitive programming, could address these threats to nutrition. However, evidence of the nutritional impact of agricultural interventions is scarce. In 2023, World Vision Australia commissioned an independent meta review of its nutrition-sensitive agriculture programming. A total of 13 projects across nine countries were reviewed to examine their contribution to the targeted outcomes. The key findings and recommendations are summarised in this evidence brief.

This portfolio-level analysis represents the foundational first phase of World Vision Australia's nutrition-sensitive agriculture research. Insights drawn from this study will inform the design of a second phase in 2026–2027 and future programming towards a more sustainable, equitable and nutritious agrifood system. The continued rollout and strengthening of World Vision Australia's pioneering Evidence Building Framework – introduced after many of the included projects had already



Women and men farmers who participated in Bangladesh's NSVC project are working alongside one another collaboratively in their fields, putting into action their new skills, knowledge and inclusive approaches to farming.

begun implementation – will further enrich the second research phase. Together, insights from both phases will grow the existing evidence base to inform future nutrition-sensitive agriculture programming.

KEY FINDINGS:

- **Food security improved** in all projects where it was measured.
- **Production and income increased**, as did the uptake of supported agricultural practices.
- **Dietary diversity generally increased.** Evidence suggested that by expanding the types of food that participants were growing to eat, their dietary diversity improved.
- **Collaboration facilitated successful implementation.** The closer implementers worked with community groups and government, as well as integrating educational initiatives and nutrition-specific programming, the better the outcomes.
- **Culturally and gender-sensitive activities were key to program success.** Targeting women as independent actors in the agrifood system promoted women's economic empowerment.
- Some projects were met by challenging contextual factors such as adverse environmental conditions or systemic external shocks. But **World Vision Australia's flexible programming was a key facilitator to overcoming those barriers to success that were within the projects' scope.**
- The contributions of interventions on **stunting, wasting and underweight among children under five were varied.** However, these mixed results align with other similar research².

1 World Vision's commitment is reflected by its membership in the global Scaling Up Nutrition (SUN) movement, and ongoing ENOUGH campaign. For more information, visit: [Scaling Up Nutrition | Our Partners | World Vision International \(wvi.org\)](#) and [ENOUGH | Campaign | World Vision International \(wvi.org\)](#).

2 Ruel MT, Qisumbing AR, Balagamwala M. *Nutrition-sensitive agriculture: What have we learned so far?* Global Food Security. (2018): <https://doi.org/10.1016/j.gfs.2018.01.002>

CONTEXT

Good nutrition is an essential foundation for the health and development of all people. But the world's predominant agrifood system prioritises the production of large amounts of food quickly over sustainability and nutrient density. A crisis has followed, with food insecurity, malnutrition and environmental degradation growing^{3 4}. Many of the world's poorest communities rely on agriculture as their primary source of food and income. Yet the very people producing food are often also the least able to access year-round sufficient nutritious and diverse foods. In response, **agricultural interventions are increasingly focused on supporting the balance of the nutritional quality of food, environmental sustainability and productivity.** This multi-sectoral approach to development is known as nutrition-sensitive agriculture.

Agriculture influences nutrition through pathways like food production, market systems, income, women's empowerment, and nutrition and hygiene knowledge and norms (see Figure 1)⁵. World Vision Australia's nutrition-sensitive agriculture interventions leverage technical approaches to improve income generation, regreening, financial inclusion, climate-smart agriculture and women's economic empowerment. A growing body of evidence shows that nutrition-sensitive agriculture interventions can address the root causes of malnutrition. However, evidence regarding their impacts on nutritional status are not yet established.⁶ World Vision Australia commissioned this foundational research, which will be followed by a second



A mother who participated in infant and child nutrition training through the NSVC project in Bangladesh is feeding her young child a balanced meal with diverse ingredients.

phase, to fill the existing evidence gap and to inform future programming.

World Vision Australia's substantial investments into nutrition-sensitive agriculture – most of which target challenging contexts with persistent nutrition issues – provide a unique opportunity to strengthen the evidence base on the impact of this approach. In addition, World Vision Australia's pioneering Evidence Building Framework defines priority indicators that can be systematically measured across multiple contexts – a method of monitoring and evaluation that enables rich cross-project learnings. Recognising this opportunity to build evidence and facilitate learning, **a meta review of 13 projects that employed nutrition-sensitive agriculture⁷ was undertaken in 2023** by independent consultant Dr. Charlotte Lane from Food Security Evidence Brokerage. The results of the meta review are summarised in this brief.

BOX 1 WHAT IS NUTRITION-SENSITIVE AGRICULTURE?

Nutrition-sensitive agriculture (NSA) is a food-based approach to agricultural development that puts nutritionally rich foods and dietary diversity at the focus of program design. The overall objective is to produce good nutritional outcomes for people over the long term, while minimising unintended negative nutrition consequences of agriculture interventions and policies⁸. As defined in World Vision Australia's Evidence Building Framework (Food Security, Health and Nutrition Evidence Pillar), nutrition-sensitive agriculture interventions aim to enhance year-round access to nutritious and diverse foods, increase income and empower individuals to meet their families' needs. In turn, a more sustainable, equitable and nutritious agrifood system is nurtured.

3 Global Panel on Agriculture and Food Systems for Nutrition. *2020 Future Food Systems: For people, our planet, and prosperity*. London, UK. [cited 2023 Oct 30]: <https://foresight.glopan.org/>

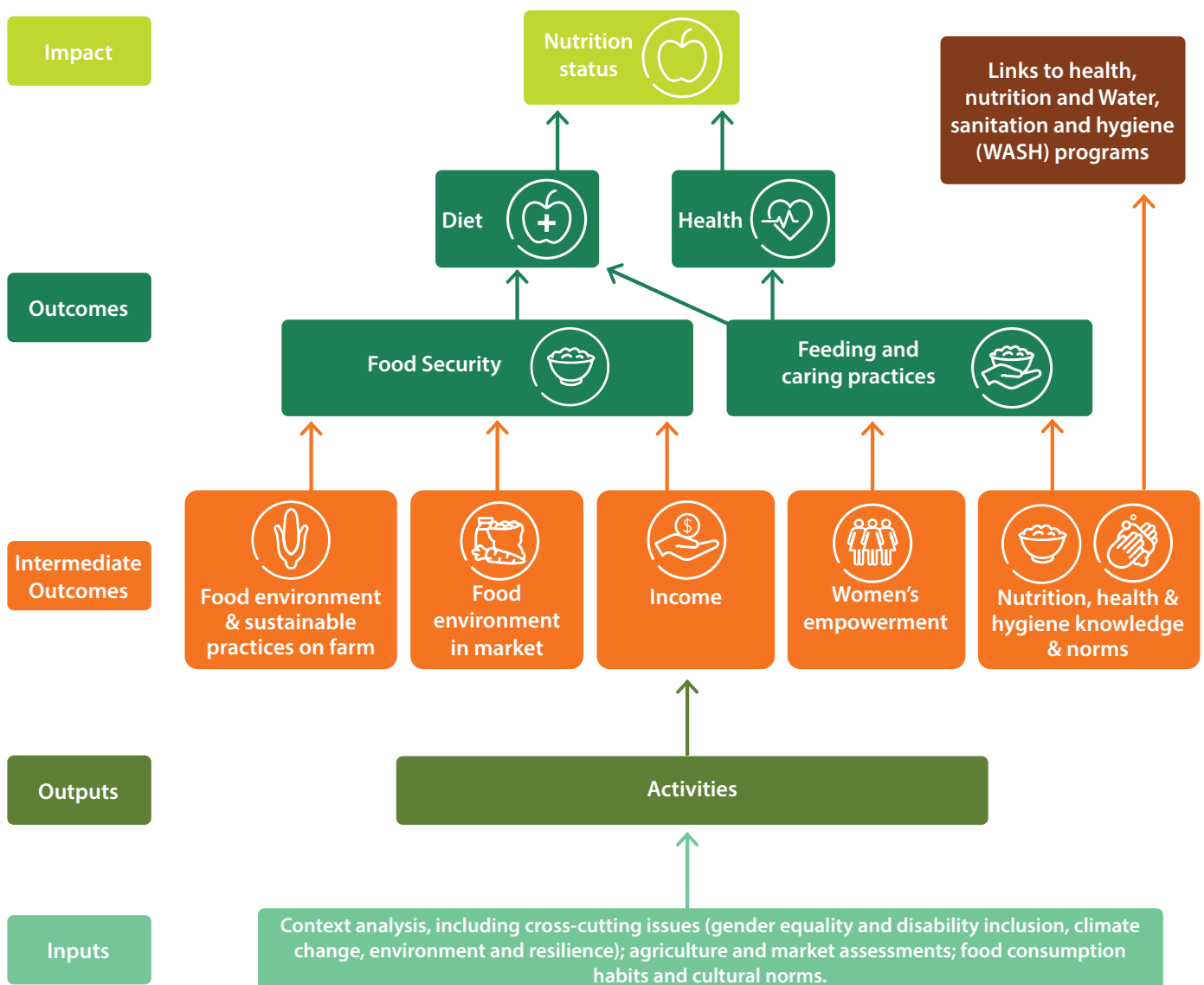
4 Ritchie H, Reay DS, Higgins P. *Beyond Calories: A holistic assessment of the global food system*. *Frontiers in Sustainable Food Systems*. (2018): <https://www.frontiersin.org/articles/10.3389/fsufs.2018.00057>

5 Herforth A, Ballard TJ. *Nutrition indicators in agriculture projects: Current measurement, priorities, and gaps*. *Global Food Security*. (2016): <https://doi.org/10.1016/j.gfs.2016.07.004>

6 Ruel MT, Quisumbing AR, Balagamwala M. *Nutrition-sensitive agriculture: What have we learned so far?* *Global Food Security*. (2018): <https://doi.org/10.1016/j.gfs.2018.01.002>

7 NSA projects are defined as those that integrate nutrition considerations into agriculture programs. But World Vision's health and nutrition projects often integrate agriculture interventions (such as home gardens and small animal raising) with the aim to better food security, dietary diversity and nutrition outcomes, thus have been included to explore the synergies.

8 Department of Foreign Affairs and Trade (DFAT). *Operational Guidance Note: Nutrition-Sensitive Agriculture*. (August 2015); *Nutrition-Sensitive Agriculture and Food Systems Guidance Note*. (August 2023)

Figure 1: How nutrition-sensitive agriculture achieves change⁹

OBJECTIVES

The review provides a portfolio-level synthesis of project outcomes, impact pathways, mechanisms of change and contextual factors that may affect where and how agrifood systems contribute to production, income, household food security, dietary diversity, anthropometric and diarrhoeal outcomes. It aims to inform existing and future programming, monitoring and evaluation designs to strengthen nutrition outcomes for families and communities. The review will also greatly enrich the global evidence base by offering valuable insights into past experiences, challenges and learnings for nutrition-sensitive agriculture.

The focus questions guiding the research were:

1. How have World Vision Australia's nutrition-sensitive agriculture programs contributed to targeted outcomes?
2. To what extent has World Vision Australia's nutrition-sensitive agriculture programming been adapted for local contexts?
3. How have nutrition-sensitive agriculture outcomes been measured and what are the gaps in evidence?

⁹ Adapted from Herforth and Ballard. (2016): <https://doi.org/10.1016/j.gfs.2016.07.004>

METHODOLOGY

World Vision Australia provided midline and endline reports for 13 nutrition-sensitive agriculture programs across nine countries in Africa, Asia and the Pacific, and the Middle East (see Table 1). Data was systematically extracted using a data extraction tool established before document review to ensure the consistent and unbiased extraction of relevant effects and qualitative comparison. This information was then summarised graphically and in tabular and narrative forms. The extracted data included basic document and programming descriptions, methodological approaches, outcome measures, sample sizes, barriers and facilitators to impact, and hypothesised mechanisms of change.

This meta review employed an integrated approach to achieving the research objectives and developing a cohesive narrative around change in outcomes over time. World Vision Australia's contribution to targeted outcomes was assessed through both the quantitative presentation of report findings and narrative discussion of how report authors and intervention participants thought change was achieved. Adaptation to local context was examined qualitatively by considering author and participant perceptions of barriers

and facilitators to impact. Outcome measurement and gaps were assessed by comparing measured outcomes to World Vision Australia's Evidence Building Framework and through expert reflection on the reporting format.

STRENGTHS AND LIMITATIONS

The findings from this review provide World Vision Australia and the global community with important insights into the contributions of nutrition-sensitive agricultural programming, how these contributions were achieved, and what key design elements could strengthen future programming. This work is inherently limited by the underlying reports – information that was not in the reports could not be synthesised. The included reports present contribution rather than attribution because most did not compare results to a counterfactual. It is also acknowledged that biases in data collection and outcome reporting in the underlying reports may be reflected in this work, despite mitigation efforts. Nonetheless, the mixed-methods approach to this review provides a compelling narrative about potential change.



Members of a Communal Garden Management Committee through the AHAN project in Laos are tending to their shared garden. The communal garden provides locally available food options plus income to benefit members and support the garden's maintenance and long-term sustainability.

TABLE 1: Overview of the 13 World Vision Australia projects included in the meta review

| PROJECT | COUNTRY | PERIOD | DONOR ORGANISATION | NUTRITION OUTCOMES | IMPACT PATHWAY | PROJECT MODELS AND APPROACHES |
|---|-------------|-----------|---|---|---|---|
| Australia Afghanistan Community Resilience Scheme (AACRS) | Afghanistan | 2014–2021 | Department of Foreign Affairs and Trade (DFAT) of the Government of Australia | <ul style="list-style-type: none"> • Food security • Food consumption | <ul style="list-style-type: none"> • Farm production • Women's empowerment • Market systems • Income | <ul style="list-style-type: none"> • Resilient market systems • Regreening |
| Gender Inclusive Pathways Out of Poverty (GPOP)* | Bangladesh | 2018–2021 | Australian Government through the Australian NGO Cooperation Program (ANCP) | <ul style="list-style-type: none"> • Dietary diversity • Food security | <ul style="list-style-type: none"> • Farm production • Women's empowerment • Nutrition and hygiene knowledge and norms • Market systems • Income | <ul style="list-style-type: none"> • Inclusive Markets System Development • Financial inclusion: Savings for Transformation • Women's Economic Empowerment, Gender-Inclusive Financial Literacy Training and MenCare • Ultra-Poor Graduation • Celebrating Families*** |
| Support Measure for the Resilience of the Populations of Burundi (TUBEHONEZA) | Burundi | 2018–2022 | European Union (EU) | <ul style="list-style-type: none"> • Dietary diversity • Food security • Infant and young child feeding (IYCF) • Maternal and child health services • Water, sanitation and hygiene (WASH) • Child health and nutrition | <ul style="list-style-type: none"> • Farm production • Women's empowerment • Nutrition and hygiene knowledge and norms • Market systems • Income | <ul style="list-style-type: none"> • Financial inclusion: Village Savings and Loan Associations • Women's Economic Empowerment • Ultra-Poor Graduation • Community-Led Total Sanitation • Community Management of Acute Malnutrition** • Positive Deviance/Hearth** • Infant and young child feeding** • Home fortification (micronutrient powder)** • Citizen Voice and Action*** |
| Nutrition-Sensitive Value Chains for Smallholder Farmers (NSVC) | Bangladesh | 2017–2023 | Australian Government through the Australian NGO Cooperation Program (ANCP) | <ul style="list-style-type: none"> • Dietary diversity • Food security • IYCF • Maternal and child health services • WASH • Maternal and child health and nutrition (MCHN) | <ul style="list-style-type: none"> • Farm production • Women's empowerment • Nutrition and hygiene knowledge and norms • Market systems • Income | <ul style="list-style-type: none"> • Local Value Chain Development • Financial inclusion: savings groups • Women's Economic Empowerment and MenCare • Infant and young child feeding** • Citizen Voice and Action*** |
| Bio-Fortified Value Chains for Improved Maternal and Child Nutrition (B4MCHN) | Burundi | 2017–2021 | Australian Government through the Australian NGO Cooperation Program (ANCP) | <ul style="list-style-type: none"> • Dietary diversity • Food security • IYCF • Maternal and child health services • WASH • MCHN | <ul style="list-style-type: none"> • Farm production • Women's empowerment • Nutrition and hygiene knowledge and norms • Market systems • Income | <ul style="list-style-type: none"> • Local Value Chain Development • Financial inclusion: Savings for Transformation • Women's Economic Empowerment and Gender Inclusive Financial Literacy Training • Ultra-Poor Graduation • Community-Led Total Sanitation • Positive Deviance/Hearth Plus** • Infant and young child feeding • Growth monitoring and promotion** • Empowered Worldview*** • Channels of Hope*** |
| Maternal and Child Nutrition Enhancement Project (MCNE) | Burundi | 2017–2020 | Government of Japan's Social Development Fund through the World Bank | <ul style="list-style-type: none"> • Dietary diversity • Food security • IYCF • Maternal and child health services • MCHN | <ul style="list-style-type: none"> • Farm production • Nutrition and hygiene knowledge and norms | <ul style="list-style-type: none"> • Local Value Chain Development (Biofortified crops for improved nutrition) • Financial inclusion: Village Savings and Loan Associations • Infant and young child feeding + growth monitoring and promotion** • Home fortification (micronutrient powder)** • Positive Deviance/Hearth** • M-Health / Commcare** |

| PROJECT | COUNTRY | PERIOD | DONOR ORGANISATION | NUTRITION OUTCOMES | IMPACT PATHWAY | PROJECT MODELS AND APPROACHES |
|---|------------------|-----------|---|--|--|--|
| Accelerating Healthy Agriculture and Nutrition (AHAN) | Laos | 2017–2022 | Australian Government through the Australian NGO Cooperation Program (ANCP) and the European Union (EU) | <ul style="list-style-type: none"> • Dietary diversity • Food security • IYCF • Maternal and child health services • WASH • Child health and nutrition | <ul style="list-style-type: none"> • Farm production • Women's empowerment • Nutrition and hygiene knowledge and norms • Market systems • Income | <ul style="list-style-type: none"> • Nutrition-sensitive Local Value Chain Development • Financial inclusion: Savings for Nutrition • Women's Economic Empowerment and Gender Inclusive Financial Literacy Training • Inclusive Go Baby Go • Community-Led Total Sanitation Plus • Citizen Voice and Action*** • Community Change *** |
| Caring for Nutrition (CFN) | Papua New Guinea | 2017–2022 | Australian Government through the Australian NGO Cooperation Program (ANCP) | <ul style="list-style-type: none"> • Dietary diversity • Food security • IYCF • Maternal and child health services • Child health and nutrition | <ul style="list-style-type: none"> • Farm production • Women's empowerment • Nutrition and hygiene knowledge and norms • Market systems • Income • Financial inclusion | <ul style="list-style-type: none"> • Financial inclusion: Savings for Transformation • Village Health Volunteer / Timed and Targeted Counselling** • Infant and young child feeding + growth monitoring and promotion** • MenCare*** • Channels of Hope*** • Celebrating Families*** |
| Greater Resilience through Agriculture and Nutrition (GREAN)* | South Sudan | 2020–2022 | Australian Government through the Australian NGO Cooperation Program (ANCP) | <ul style="list-style-type: none"> • Dietary diversity • Food security • IYCF • Maternal and child health services • WASH | <ul style="list-style-type: none"> • Farm production • Women's empowerment • Nutrition and hygiene knowledge and norms • Market systems • Income | <ul style="list-style-type: none"> • Inclusive Market Systems Development and Local Value Chain Development • Financial inclusion: Savings for Transformation • Women's Economic Empowerment • Positive Deviance/Hearth** • Empowered World View*** |
| Better Food, Better Health (BFBH) | Timor-Leste | 2017–2022 | Australian Government through the Australian NGO Cooperation Program (ANCP) | <ul style="list-style-type: none"> • Dietary diversity • Maternal and child health services • IYCF • WASH • MCHN | <ul style="list-style-type: none"> • Farm production • Women's empowerment • Nutrition and hygiene knowledge and norms • Market systems • Income | <ul style="list-style-type: none"> • Local Value Chain Development • Financial inclusion: Savings for Transformation • Gender Inclusive Financial Literacy Training • Timed and Targeted Counselling** • Citizen Voice and Action*** |
| Health and Nutrition for All (HANA)* | Uganda | 2020–2023 | Australian Government through the Australian NGO Cooperation Program (ANCP) | <ul style="list-style-type: none"> • Dietary diversity • Food security • IYCF • Maternal and child health services • WASH • MCHN | <ul style="list-style-type: none"> • Farm production • Nutrition and hygiene knowledge and norms | <ul style="list-style-type: none"> • Community-Led Total Sanitation • Timed and Targeted Counselling** • Positive Deviance Hearth** • Maternal, infant, young child and adolescent nutrition** • Nurturing Care Groups*** • Citizen Voice and Action*** • Channels of Hope*** |
| Farming for Nutrition (FFN) | Laos | 2016–2018 | Australian Government through the Australian NGO Cooperation Program (ANCP) | <ul style="list-style-type: none"> • Food security • Nutrition awareness | <ul style="list-style-type: none"> • Farm production • Income • Nutrition and hygiene knowledge and norms | <ul style="list-style-type: none"> • Financial inclusion: Village Saving Fund |
| Maternal, Newborn and Child Health and Nutrition (MNCHN) | Myanmar | 2014–2018 | Australian Government through the Australian NGO Cooperation Program (ANCP) | <ul style="list-style-type: none"> • Maternal and child health services • Maternal, infant and young child feeding • MCHN • WASH | <ul style="list-style-type: none"> • Nutrition and hygiene knowledge and norms | <ul style="list-style-type: none"> • Maternal, newborn and child health and nutrition** • Infant and young child feeding + growth monitoring and promotion** • Positive Deviance/Hearth** |

* Represent mid-term evaluations

**Nutrition-specific/direct nutrition programming

***Cross-cutting/enabling model or approach

FINDINGS

The meta review found that **most interventions pursued change through the pathways of farm production and nutrition and hygiene knowledge and norms**. Ten projects used technical approaches to support financial inclusion, including six specifically focusing on women's economic empowerment. Eleven reports provided sufficient information for quantitative synthesis.

CONTRIBUTION TO PRODUCTION AND INCOME

NSA can improve production practices and increase income

The projects that measured changes in participants' income and food production practices used agricultural training with either direct agricultural input provision or market linkage facilitation. **Participants reported adopting supported agricultural practices and income increased for all groups**, with larger increases observed in the intervention sites relative to control sites (see Figure 2). Vegetable gardening (GPOP, Bangladesh) was the income-generating activity that resulted in the most substantial income increase.

Market access and gender-sensitive approaches are keys to success

Market access was a critical facilitator (NSVC, Bangladesh) to program success, as shown in the project example below, while limited market access was found to be a barrier¹⁰.

Culturally and gender-sensitive approaches were also keys to success, empowering women and fostering greater gender equity¹¹. However, efforts to change social norms around equity and women's empowerment may also have caused challenges in program implementation. Implementation challenges and reporting bias necessitate a cautious interpretation of large increases in reported income.

CONTRIBUTION TO FOOD SECURITY AND NUTRITION

Food security increased during NSA programs

Food security improved in the six interventions where it was measured. Qualitative evidence suggests that food security improved with increased food production. In cases where production increases were small, they were absorbed for people's own consumption and increased food security



When Parvin joined a producer group through the NSVC project, she was supported to purchase a power tiller using her own capital. Now a successful entrepreneur, she provides tillage services to other producer groups and has earned enough to purchase a thresher machine.

KEY EXAMPLE: NSVC, BANGLADESH

In the NSVC project in Bangladesh, community sales agents and women entrepreneurs collected agricultural produce and became single points of contact between farmers and markets. This was thought to help increase smallholder farmers' access to markets by lowering the burden of interfacing between these two parties. The private sector also started offering new products, like improved seeds, biopesticides and insecticides. Community sales agents were seen as a way to overcome cultural barriers and develop more inclusive value chains.

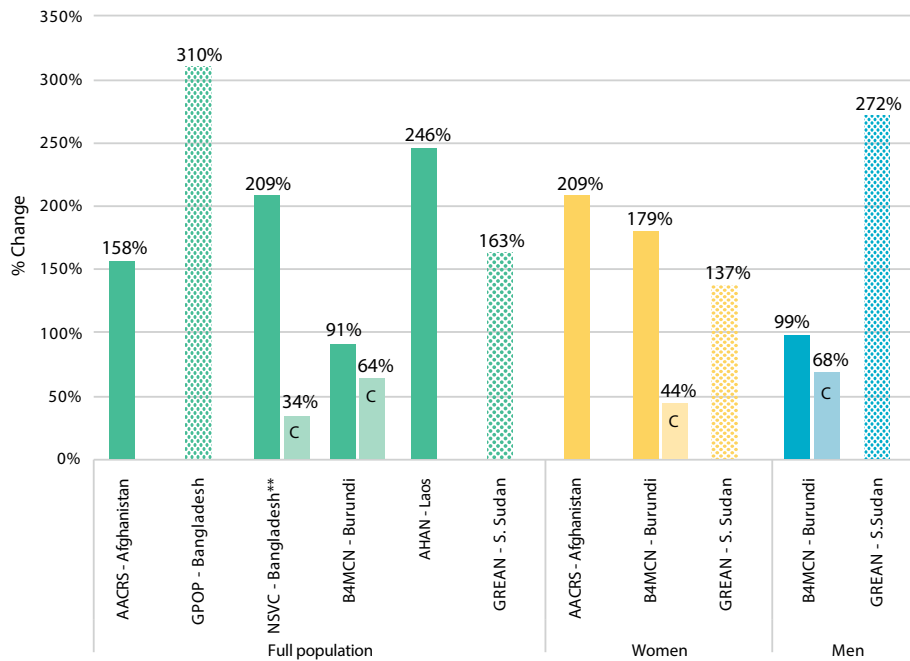
Women entrepreneurs in agriculture, such as Parvin, pictured with her power tiller, were reported to be profitable in this program. "Earlier my relatives and neighbours taunted me for being engaged with the business, but now everyone in the family and society supports me," says Parvin.

without acting on income. Contextual factors, including weather and security concerns, may be barriers to achieving food security outcomes.

¹⁰ B4MCN, Burundi; Farming for Nutrition, Laos; and AACRS, Afghanistan.

¹¹ GPOP, Bangladesh; NSVC, Bangladesh; BFBH, Timor-Leste; and AHAN, Laos.

Figure 2: Percent change in income (household and individual level) in intervention areas relative to control sites



Note: ** p < 0.01, * p < 0.05, # p > 0.05. If no symbol, p not reported. Hashed bars represent percentage change from baseline to mid-term, and dark-coloured bars show percentage change from baseline to endline. "C" indicates the comparison group.

Dietary diversity increased during many NSA programs

Dietary diversity, either at the household or individual level, increased in five program areas. Participants and study authors concluded that **greater income and production diversity led to people eating more diverse diets**¹².

However, a decline was reported in two program areas. In some locations in Burundi, low production of supported foods and abandonment of certain crops may have hindered increases in dietary diversity. External factors like seasonality, insecurity and implementation delays were identified and may have affected dietary diversity.

KEY EXAMPLE: GOP, BANGLADESH

Participants in the GOP project in Bangladesh shared that they ate more vegetables because they were producing more vegetables themselves. However, those engaging in small business income-generating activities had higher dietary diversity than those participating in commercial vegetable production. Income may have allowed these households to purchase a more diversified diet than they could grow. For GOP participant Gul (pictured), training from World Vision on homestead gardening empowered her to grow her own pumpkins, eggplants and other vegetables. This produce provides her with a regular supply of nutritious food for cooking as well as a source of income.



Gul and her family grow their own eggplants and pumpkins after learning about homestead gardening through the GOP project in Bangladesh.

12 GOP, Bangladesh; BFBH, Timor-Leste; and NSVC, Bangladesh.

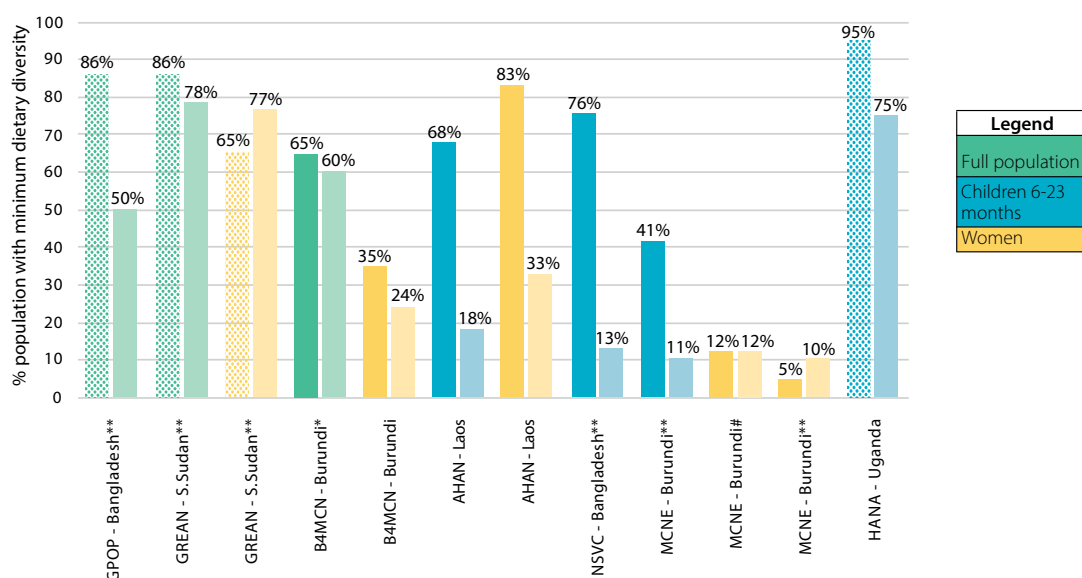
NSA projects with strong nutrition-specific components can improve child nutrition

The prevalence of underweight among children decreased in five locations. Child stunting reduced in three locations and wasting reduced in four locations. The two projects which found the largest decreases in stunting were AHAN in Laos and HANA in Uganda, and **each had strong nutrition-specific components, which may have driven these findings**. However, the overall contribution to stunting, wasting and underweight among children under five was varied and insignificant or minimally tested (Table 2).

Improved dietary diversity can enhance child nutrition, but evidence on the synergies needs strengthening

Among the **three studies examining dietary diversity and anthropometrics, two showed positive changes in both dietary diversity and anthropometrics**. Interventions integrated significant nutrition-specific programming, often delivered through the local health systems. Women generally attributed improvements in nutrition to these activities. It is unclear if nutrition-specific activities drove effects or if this finding is due to participants linking nutrition-specific activities with nutrition outcomes. For those that did not show changes in either, external factors like weather, seasonality and implementation challenges influenced the results and may have hampered the interventions' impacts.

Figure 3: Proportion of the population meeting minimum dietary diversity (household and individual level) in intervention areas, by population and pathway



Note: ** p < 0.01, * p < 0.05, # p > 0.05. If no symbol, p not reported.
Light-coloured bars denote data at baseline, hashed bars at mid-term, and dark-coloured bars at endline.

Table 2: Percentage point change in stunting, wasting and underweight prevalence (anthropometric measures) in children under five

| | Stunting | Wasting | Underweight |
|---|----------|---------|-------------|
| B4MCN (Burundi) | 2.7 | -0.1 | 0.1 |
| AHAN (Laos) | -17.3 | -1.2 | -9.1 |
| Caring for Nutrition (Papua New Guinea) | -6.3** | 3.5# | -4.9* |
| BFBH (Timor-Leste) | 3* | -2# | -2# |
| HANA (Uganda) | -11.6 | -15.5 | -3 |

Note: ** p < 0.01, * p < 0.05, # p > 0.05. If there is no symbol, a test for change over time was not reported. BFBH used a difference-in-difference test whereas Caring for Nutrition considered pre-post change. Colour coding provides a qualitative visual of the degree of change with darker colours representing larger or statistically significant change and lighter colours represent small or non-significant change. Green represents a reduction in malnutrition and orange an increase.

CONTRIBUTION TO PROGRAM SUCCESS: FACILITATORS AND BARRIERS

The ability to flexibly adapt program design to local contexts emerged as a key facilitator to overcoming barriers posed by the local environment¹³. Program modifications like the introduction of a greenhouse component to allow for off-season production (AACRS, Afghanistan) and adjustments in program delivery after the COVID-19 pandemic started were well received. Effective collaboration with community groups and governmental bodies also facilitated dynamic management, enabling projects to leverage existing local resources and platforms for implementation¹⁴.

The effectiveness of supported agricultural approaches was sometimes **undermined by contextual factors including weak agricultural extension systems, inadequate market structures, limited follow-up, and adverse environmental conditions**. Water scarcity and the lack or untimely availability of quality seeds and fertiliser affected many programs, leading to low yields which demotivated

participants¹⁵. Projects also faced challenges in resource quality and delivery, partner inefficiencies and participant incentivisation, which often came from inadequate appreciation of the local context.

OUTCOMES IN WORLD VISION AUSTRALIA'S EVIDENCE BUILDING FRAMEWORK

World Vision Australia launched its Evidence Building Framework in 2020 to build a more standardised approach to collecting, monitoring and evaluating program results. As this promising effort continues to be rolled out, it will enable reporting on impact at scale across different projects and contexts. Because ten of the 13 projects in this meta review commenced before the framework's development, alignment of indicators with the framework was low. The evidence base can be further strengthened through the upcoming second phase of World Vision Australia's nutrition-sensitive agriculture research as more programming adopts and aligns with the framework.

CONCLUSION



"I grow superfoods, chickens and eggs," says Natalia, a mother of four in Timor-Leste. Natalia has planted half a hectare of moringa and other seeds since learning about superfoods and nutrition through the Better Food Better Health project.

The meta review presented a rich understanding of the different ways nutrition outcomes changed over time through World Vision Australia's nutrition-sensitive agriculture programs. The projects analysed facilitated the uptake of supported agricultural practices and increased income. There is evidence suggesting that shifts in **the production of more diverse foods enhanced dietary diversity**, and

the increased income generation from supported activities may have **improved women's empowerment and dietary diversity**.

There is suggestive evidence linking dietary diversity to positive anthropometric shifts, indicating that income is potentially a pathway for change. However, interventions had **mixed relationships with anthropometric outcomes**. Other research¹⁶ has found similar mixed effects, likely driven by the indirect causal chain and long timeframes needed to reduce stunting.

Although not a primary focus of this review, report narratives **indicate that nutrition-sensitive agricultural programming is an opportunity for strengthening local institutions**, such as health systems. Effective engagement with these groups and market actors were key aspects of adaptation to local context which facilitated World Vision Australia's nutrition-sensitive agriculture program success. A collaborative and context-adaptive approach is therefore important in amplifying the success of nutrition-sensitive agriculture programs.

13 AACRS, Afghanistan; GPOP, Bangladesh; MCNH, Myanmar; and Caring for Nutrition, Papua New Guinea.

14 AACRS, Afghanistan; GPOP, Bangladesh; B4MCN, Burundi; MCNE, Burundi; TUBEHONEYA, Burundi; and GREAN, South Sudan.

15 B4MCN, Burundi; MCNE, Burundi; FFN, Laos; GREAN, South Sudan; and BFBH, Timor-Leste.

16 Ruel et al. (2018): <https://doi.org/10.1016/j.gfs.2018.01.002>

RECOMMENDATIONS

CONTINUE APPROACHES TO NUTRITION-SENSITIVE AGRICULTURE THAT WORK:

- **Implement flexible programming** that can accommodate challenging contextual factors, such as by providing intervention frameworks like Savings for Transformation or using adaptive management in response to identified constraints.
- **Collaborate with community groups, market actors, private sectors and governmental partners** who can facilitate program flexibility while also improving implementation. This could include continued efforts to strengthen the capacity of local institutions.
- **Maintain multi-sectoral programming, including nutrition-specific interventions, with consistent reconsideration and external evaluation of project components.** Integrated approaches to nutrition-sensitive agriculture programming are generally considered to be more effective than single-sector interventions¹⁷. However, critical review of the individual programming components and the effectiveness of each activity remains important. This meta review is evidence of World Vision Australia's commitment to doing so.
- **Target women as autonomous actors within the food value chain.** Nutrition interventions often target women for their reproductive potential rather than their independent value within the food system¹⁸. This can

be disempowering to women. World Vision Australia's programming explicitly avoids this issue by prioritising women's economic empowerment, and this approach should be continued.

- **Roll out and strengthen the Evidence Building Framework within World Vision Australia.** This framework, introduced in 2020, is a promising effort to standardise reporting. With further strengthening, meta-analytic reports such as this could have more comparable data leading to more generalisable conclusions.

RESPOND TO IDENTIFIED CHALLENGES:

- **Consider more detailed market and resource assessments** during the early stages of project design. This can ensure assets for transfer and other inputs are locally available and that there is demand and feasible means for selling produce. The findings should be used to inform the intervention's design to mitigate challenges from market and resource constraints.
- **Adjust programming in response to participants' abilities to use transferred assets.** For example, women may have issues maintaining control over certain assets, particularly machinery and livestock. Additional steps, including soft-skills training and linkage with equipment suppliers, may be necessary to support participants in using these assets.



Members of a communal garden and fish pond established through the AHAN project in Laos are harvesting lemongrass. Equipped with agricultural training and support, community members are now able to grow food to eat and sell despite their region's sandy soil.

17 Sharma IK, Di Prima S, Essink D, Broerse JEW. *Nutrition-Sensitive Agriculture: A systematic review of impact pathways to nutrition outcomes*. *Adv Nutr*. 2020 Sep 24;12(1):251–75. <https://doi.org/10.1093/advances/nmaa103>

18 International Initiative for Impact Evaluation (3ie), Moore N, Lane C, Storhaug I, et al. *The effects of food systems interventions on food security and nutrition outcomes in low- and middle-income countries*. 2021. International Initiative for Impact Evaluation (3ie). (January 2021): <https://www.3ieimpact.org/evidence-hub/publications/evidence-gap-map/effects-food-systems-interventions-food-security-and>



Children in Baucau, Timor-Leste, are eating moringa porridge that is full of good nutrients for children's healthy development. Their families tested and developed culturally suited superfood recipes through the Better Food Better Health project.

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