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Report No:

IMPLEMENTATION COMPLETION AND RESULTS REPORT

TF0A4858 ON A

SMALL GRANT

IN THE AMOUNT OF USD 2.72 MILLION

TO

WORLD VISION BURUNDI

FOR THE

Burundi Maternal Child Nutrition Enhancement Project (P157993)
{28 February 2021}

Health, Nutrition & Population Global Practice
Africa Region

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ABBREVIATIONS AND ACRONYMS

BCR	Benefit Cost Ratio
BI	Burundi
CBA	Cost Benefit Analysis
CBO	Community Based Organization
CHWs	Community Health Workers
DC	District of Columbia
DHS	Demographic and Health Survey
DIP	Detailed Implementation Plan
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FARN	Foyer d'Apprentissage et de Réhabilitation Nutritionnelle (learning and nutritional rehabilitation homes)
FG	Family Group
FM	Financial Management
FY	Fiscal Year
GMP	Growth Monitoring and Promotion
GoB	Government of Burundi
ICR	Implementation and Completion results Report
ICT	Information and Communication Technology
iNGO	International Non Governmental Organization
IRI	Intermediate Result Indicator
IRR	Internal Rate of Return
ISABU	Institut des Sciences Agronomique du Burundi (Burundi Institute of Agronomic Sciences)
ITT	Indicator Tracking Table
IYCF	Infant and Young Child Feeding
JSDF	Japan Social Development Fund
MCNE	Mother and Child Nutrition Enhancement
M-Health	Mobile Health
MoA	Ministry of Agriculture
MoH	Ministry of Health
MUAC	Mid-Upper Arm Circumference
NGO	Non Governmental Organization
NPV	Net Present Value
ONCSS	Office National de Contrôle et Certification des Semences (National Seed Control and Certification Office)
PAD	Project Appraisal Document
PDH	Positive Deviance Hearth
PDO	Project Development Objective
PIU	Project Implementation Unit
PRODEMA	Projet de productivité et de Développement des Marchés Agricoles (Productivity and Agricultural Market Development Project)
PSMSAN	Plan Stratégique Multisectoriel de Sécurité Alimentaire et Nutrition (Multisectoral Strategic Plan for Food Security and Nutrition)

SDG	Sustainable Development Goal
SPD	Standard Procurement Document
STEP	Systematic Track of Exchanges in Procurement
SUN	Scaling Up Nutrition
TF	Trust Fund
TOC	Theory of Change
TOR	Terms of Reference
TTL	Task Team Leader
UNICEF	United Nations Children's Fund
US$	United States of America dollars
USAID	United States Agency for International Development
VSLAs	Village Savings and Loans Associations
WB	World Bank
WFP	World Food Program
WHO	World Health Organization
WVIB	World Vision International Burundi

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DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P157993	Burundi Maternal Child Nutrition Enhancement Project
Country	**Financing Instrument**
Burundi	Investment Project Financing
Original EA Category	**Revised EA Category**
Not Required (C)	Not Required (C)

Organizations

Borrower	Implementing Agency
WORLD VISION BURUNDI	WORLD VISION BURUNDI

Project Development Objective (PDO)

Original PDO

The Project Development Objective (PDO) is to increase production and consumption of micronutrient-rich foods among targeted groups in Gihofi and Makamba, Burundi.

FINANCING

	Original Amount (US$)	Revised Amount (US$)	Actual Disbursed (US$)
Donor Financing			
TF-A4858	2,729,401	2,729,401	2,729,401
Total	**2,729,401**	**2,729,401**	**2,729,401**
Total Project Cost	**2,729,401**	**2,729,401**	**2,729,401**

KEY DATES

Approval	Effectiveness	Original Closing	Actual Closing
16-Mar-2017	25-Jul-2017	15-Feb-2020	15-Aug-2020

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US$M)	Key Revisions
14-Feb-2020	2.25	Change in Results Framework Change in Loan Closing Date(s) Change in Implementation Schedule

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Satisfactory	Satisfactory	Substantial

RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US$M)
01	29-Jun-2017	Satisfactory	Satisfactory	0.00
02	30-Sep-2018	Moderately Satisfactory	Moderately Satisfactory	0.57
03	04-Feb-2020	Moderately Satisfactory	Moderately Satisfactory	2.21

ADM STAFF		
Role	**At Approval**	**At ICR**
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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

Context

1. **Over the past decade, the Government of Burundi (GoB) made progress in consolidating peace and security, rebuilding institutions and improving sector outcomes, particularly in basic health and education.** The economy was largely stable between 2006 and 2014. However, since early 2015, a political crisis has reversed some of the previous gains and triggered a severe economic crisis, which impacts the most vulnerable and their ability to meet basic needs. The economy contracted by 3.9 percent in 2015 and at the same time several donors suspended aid to the country. Burundi's per capita gross national income fell to US$270 in 2015 and is estimated to be US$260 in 2019. Household survey data show that the majority of Burundians—72 percent, (11.3 million people)—live in poverty, with higher poverty incidence in rural areas.

2. **Food insecurity has been on the rise due to the recent political situation and economic crisis.** Burundi has one of the highest stunting rates of children in the world. Stunting, caused by chronic undernutrition, has remained virtually unchanged over the last two decades (56% (1987), 63% (2000), 58% (2005), 58% (2010), 56% in 2017) (DHS 2016-2017) and is far removed from the SDG target of 29%. However, a slight decrease has been observed since 2018 (54%, SMART Survey 2018); and 52% (SMART Survey 2020). The 2020 SMART Survey also noted an increase in the prevalence of global acute malnutrition in some regions. This increase is likely related to COVID-19 that led to border closures, thus limiting trade and reducing households' subsistence means; as well as the massive return of repatriates from Tanzania and internal displaced persons which placed additional burdens on host families.

3. Stunting begins at conception and is largely irreversible beyond the first two years of life. Globally, child and maternal malnutrition underlie 45 percent of all child deaths. Undernutrition increases mortality and morbidity and increases expenditure on health overall. Undernutrition has further economic costs through cognitive delays in children, compromised learning performance, and lower economic productivity in adults. Chronic malnutrition is costing Burundi an estimated US$102 million per year, which is twice the annual budget of the Burundi Ministry of Health (MoH). However, since it is often invisible, it is not always perceived as a real problem and is easily confused with food security issues. Important advocacy activities must be carried out at the level of political authorities and the population to highlight the extent of stunting in Burundi and its consequences on human capital and national development.

4. **Chronic malnutrition among children reflects the overall extreme food insecurity in Burundi linked to the small landholdings, declining soil fertility and plant diseases.** It is also associated with micronutrient deficiencies such as anemia. While the country has developed successful protocols for severe acute malnutrition, it is less advanced in terms of addressing chronic malnutrition through nutrition education, community-based prevention and treatment and related issues on early childhood development and parenting practices. The causes of undernutrition are complex, with immediate determinants related to disease and inadequate food intake. Moreover, micronutrient deficiencies (often called "hidden hunger" as they may not be visible to the naked eye) are widespread in Burundi, especially amongst women and children.

5. **In response to these challenges, the GoB demonstrated strong political commitment to tackle malnutrition.** A multisectoral roadmap for scaling up nutrition actions was finalized in January 2012 and a national strategic plan for nutrition was developed. The GoB formally launched the Scaling Up Nutrition (SUN) movement in Burundi in 2013, and in 2014 issued a Decree for the formation of the National Burundi Multisectoral Platform of Food Security to be

located at the Second Vice Presidency level, with appointment of the Deputy Chief of Staff as the National SUN Focal Point. With the recent elections held in 2020 and a new constitution, the two vice presidencies no longer exist, and the SUN secretariat was relocated at the Prime Minister's cabinet. A budgeted multisectoral strategic plan for food security and nutrition (PSMSAN) and its monitoring and evaluation framework were validated by the Government in May 2020. The GoB established a food security and nutrition budget line (1 billion Burundian Francs, equivalent to approximately US$641,000) for the agriculture sector. The GoB is committed to improving the health and nutritional status of its population and the Bank is contributing to these efforts through assistance in both the health and agriculture sectors.

6. **Makamba and Rutana provinces in southern Burundi were identified under this project as the most vulnerable geographical areas** with limited NGO presence and high rates of chronic malnutrition (52% in both provinces in 2016/17 (DHS). Rutana and Makamba provinces make up one of the poorest regions in Burundi, partly due to the high numbers of returning refugees from Tanzania, as both provinces border Tanzania. One district in each province was targeted: Gihofi district (Rutana Province) and Makamba district (Makamba Province).

7. **The Burundi Maternal Child Nutrition Enhancement Project (P157993) was the first project in Burundi to focus on nutrition-specific and -sensitive activities, using a multi-sectoral approach and a community-based model during the first 1,000 days (from conception to 2 years of age), a critical window of opportunity to improve health and nutrition of women and children, targeting the most vulnerable population.** Prior to 2017, no project in Burundi was primarily focusing on nutrition-specific and -sensitive interventions to address the irreversible damage due to chronic malnutrition that develops during the first 1,000 days, although multiple interventions in health and agriculture projects had incorporated some nutrition aspects and indicators. The project was approved by the Bank on March 16th, 2017 and became effective on July 25th, 2017. The total project budget amounted to US$3.03 million allocated as follows: US$2,729,401 grant from the Japan Social Development Fund (JSDF) (TF 0A4858), administered by the Bank, and funding of US$303,820 from World Vision Australia.

8. **The project was implemented by World Vision International Burundi (WVIB), on behalf of the Government of Burundi.** The project's beneficiaries were poor "first 1,000 days" households of two contiguous health districts.

Significant changes during implementation

9. **The project was restructured in February 2020 to extend the Closing Date and revise the results framework**. The initial Closing date of the project was February 15th, 2020 but in view of some start-up delays, the Bank approved a request for an extension of six months and to change the results framework. This allowed the project to complete implementation of activities and to conduct an end-line survey to measure impact and to inform this implementation and completion report (ICR).

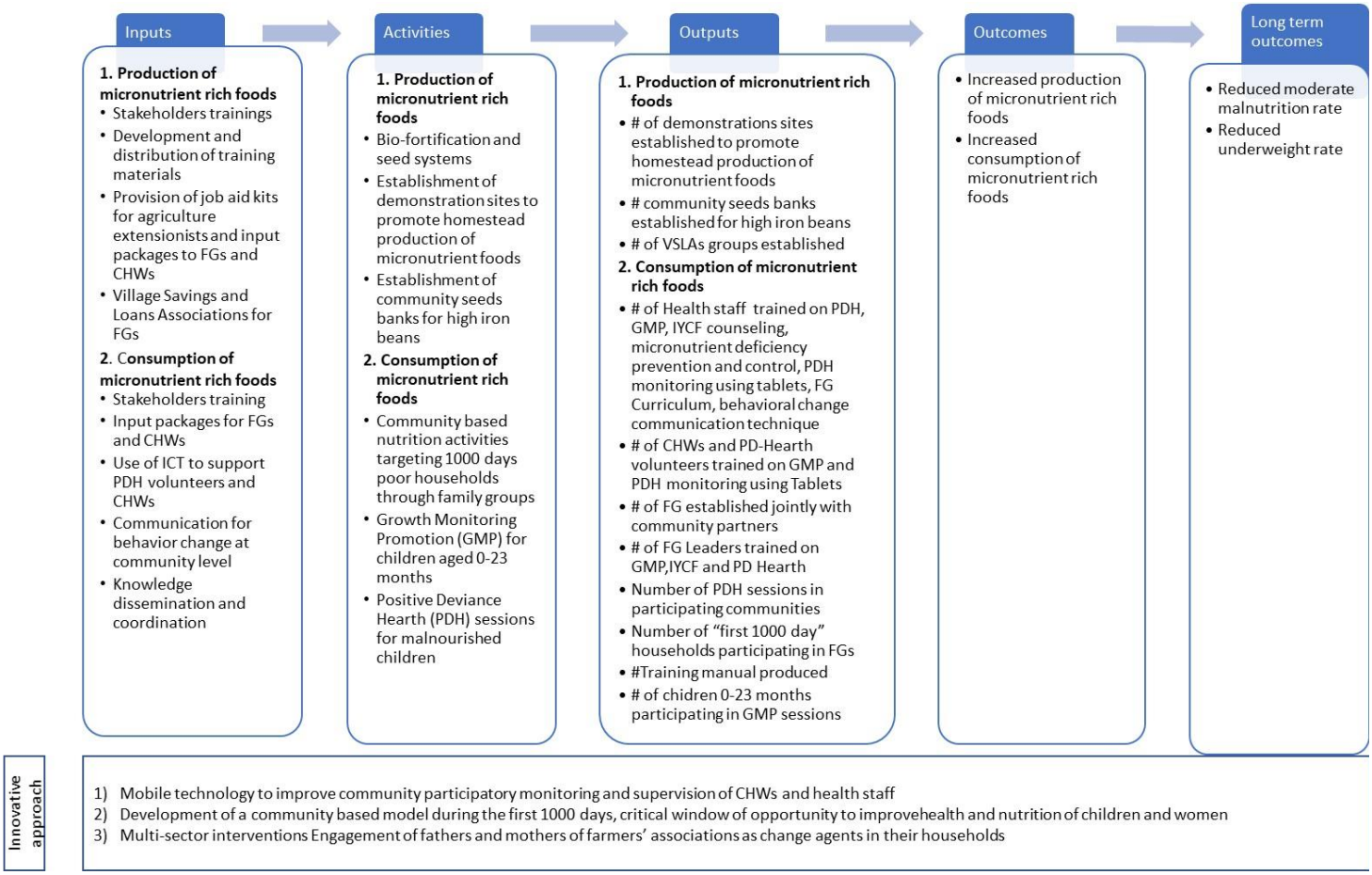
10. The change of results framework was decided after the mid-term review of May 2019 and applied by the implementing agency from July 2019. The formalization of the restructuring and changes in the Bank's operations portal took place in February 2020. This delay was due to gaps in monitoring during the period of task team leaders (TTLs) changing.

11. **Changes in results framework.** The request for changes in the results framework, based on recommendations from the mid-term review carried out in May 2019, aimed at addressing misalignments between the project design and the realities in the field, such as wrong number of hills (*collines*) (lowest administrative subdivision in Burundi) in the intervention area, overestimation or wrong target or wording of indicators. The end target dates were also updated to reflect the August 15th, 2020 grant closing date. Targets for the following intermediate results indicators (IRIs) were changed as follows:
    (a) *IRI1. Number of Positive Deviance Hearth (PDH) sessions delivered in participating communities*: target increased from 1,710 to 1,787 since PDH sessions have been decentralized to the sub-hill level, rather than at the hill level as initially planned. This results in 512 sub-hills to be reached by the project instead of 469 as planned initially.
    (b) *IRI4. Number of first 1,000 days households participating in Family Groups*: target changed from 37,780 to 30,000. The target of 37,780 households was calculated based on the population in the two targeted health districts but information received at the design stage on the number of hills to cover was inaccurate. The change in target reflects the correct target population in those districts. In fact, during discussions during the design phase of the project in 2014, local administration at the provincial level indicated that there were 114 hills in the two target health districts. However, after starting implementation in 2017, it was realized that the number of hills was actually 139 (25 additional hills). With the limited time and budget, the project was scaled-up to include only some of the additional hills (15 hills) and targeted 30,000 "1000 days" households rather than the initial target of 37,780 without compromising the quality of implementation
    (c) *IR5. Number of "first 1,000 days" households who received agriculture inputs*: target changed from 37,780 to 30,000 for the same reason as for IR4.
    (d) *IR7. Number of "first 1,000 days" households reporting production of four or more micronutrient rich foods*: target changed from 33,780 to 26,250. This change resulted in reduction of the total number of "first 1,000 days" households participating in Family Groups to 30,000.
    (e) *IR8. Number of FG Leaders producing at least 50kg of high-iron beans per year*: formulation changed from "FG leaders" to "FG member" which was incorrectly written in the Project Appraisal Document (PAD). Target changed from 33,058 to 26,250 to reflect the 30,000 FG members targeted.

Theory of changes (Results chain)

12. At the time of appraisal, no Theory of Change (TOC) or results chain was developed. Therefore, for this ICR, a TOC was developed taking into consideration the Project Development Objective (PDO), component descriptions, Results Framework (RF), and Restructuring (Figure 1).

Figure 1: Theory of change



Project Development Objectives (PDOs)

13. The PDO of the project was to increase production and consumption of micronutrient-rich foods among targeted groups in Gihofi and Makamba, Burundi.

Key expected outcomes and outcomes indicators

Key expected outcomes

14. Key expected outcomes include:
    (a) Increase the number of poor "first 1,000 days" households participating in community-based nutrition activities;
    (b) Increase the number of poor "first 1,000 days" households producing at least four micronutrient rich foods;
    (c) Increase consumption of micronutrient rich foods and improve feeding practices through community-based nutrition and agriculture services;

(d) Expose men to better nutrition agricultural techniques for bio-fortified crops, hygiene, and health practices to add value for their households and their communities.

Outcome indicators

15. Outcome indicators include:
    (a) Percentage of children aged 0-23 months participating in community-based nutrition activities;
    (b) Percentage of participating "first 1,000 days" households reporting production of at least four micronutrient rich crops in target areas;
    (c) Percentage of children aged 6-23 months reporting consumption of foods from four or more food groups in the previous 24 hours in target areas.

Components

The Project had three components:

16. **Component 1: Mobilize communities to improve nutrition practices (US$1,394,438)**. The component aimed to support community-based nutrition activities delivered through family groups (FGs); Growth Monitoring and Promotion (GMP) for children 0-23 months of age; and Positive Deviance/Hearth (PDH) for malnourished children. The community-based nutrition activities were implemented by a network of family group leaders (FGLs), local community-based organizations (CBOs), Community Health Workers (CHWs), and PDH volunteers.

17. ***Expected outputs of Component 1 included*:** (i) Nutrition educational materials developed; (ii) 1,075 community-based service providers (i.e. CHWs, agriculture extensionists, PDH volunteers, local CBO workers, health center staff, and district and provincial MoH and MoA staff) trained on nutrition; (iii) 14,800 children 0-23 months of age participating in GMP sessions monthly; (iv) Provision of 114 PDH and GMP packages (1 kit/Hill), Job Aid kits for FGLs and CHWs; (v) PDH and GMP support strategy developed for delivery using ICT; (vi) 228 CHWs and PDH volunteers trained to use tablets to support nutrition activities in their communities; and (vii) Coordinated planning, supportive supervision (three times a year) in 114 Hills in 2 health districts, and annual review meetings by line ministries at the provincial and national levels.

18. **Component 2: Increase production of micronutrient-rich foods (US$925,754)**. This component aimed to increase year-round production and consumption of micronutrient-rich foods, especially bio-fortified crops (high iron beans) by linking agriculture extension workers and farmers associations with the FGs described in Component 1. FGs received training from agriculture extensionists and FGLs increased household fruit and vegetable production through kitchen gardens. Members of FGs also received agriculture—nutrition input packages and were included in Village Savings and Loans Associations (VSLAs) to reduce financial barriers to production of nutritious crops.

19. **Expected outputs of Component 2 were**: (i) An integrated agriculture-nutrition training manual; (ii) At least 1,858 demonstration sites established in beneficiary communities to promote homestead production of micronutrient foods; (iii) At least 12 community seed banks established for high iron beans; and (iv) At least 630 VSLA groups established.

20. **Component 3: Project Management and Administration, Monitoring and Evaluation, and Knowledge Dissemination** (**US$409,209)**. This component supported costs related to monitoring and evaluation, coordination and policy advocacy, and project management.

21. **Expected outputs of Component 3 included**: (i) Monitoring of routine data from FGs, PDH volunteers, CHWs and agriculture extension workers to track progress of process indicators and provide the basis for strengthening any activity as needed to ensure the overall project objectives are met; (ii) Financial management and audit reports; (iii) annual workshops with district and provincial stakeholders; (iv) Project evaluation report and summary of lessons learned; (v) Implementation Completion Report; (vi) Final workshops at provincial and national levels with stakeholders to disseminate results and (vii) Baseline and end-line Surveys.

II. OUTCOME

Assessment of Achievement of Each Objective/Outcome

Relevance

22. The relevance of the project is **High**. In fact, the GoB has recognized that one of the most viable strategies for achieving the SDG is to adopt the Scaling Up Nutrition (SUN) strategy of focusing on the 1,000 days window of opportunity directed at women of reproductive age, newborns and children under the age of two years. The project was focused on this SUN target population and was designed within the objectives articulated in the PSMSAN to contribute to long-term stunting reduction efforts.

23. The project was aligned with the strategic objectives of the World Bank Group's Burundi Country Assistance Strategy for FY13-16 (Report 72334-BI). It contributed to Pillar I (enabling environment for inclusive growth and poverty reduction) and Pillar II (increasing resilience) as the purpose of the grant was to develop a replicable model for building household and community resilience to food and nutrition insecurity shocks that when scaled up can contribute to promoting the livelihoods and health of the most vulnerable.

24. At completion, the project is still aligned with the country and sector policies, as it was a pilot project to demonstrate how to improve household dietary diversity and utilization of nutrition services for pregnant and lactating women and children 0-23 months of age through a multi-sectoral approach, which aligns with the PSMSAN. Hence, the sustainability is primarily linked to building an evidence-based programmatic model, which will contribute to the development of relevant national policies to reduce chronic malnutrition by reaching women during the crucial periods of pregnancy and lactation. The project involved national institutions for the supply of quality seeds and their certification as well as the approval of two local seed producers per commune. On site production of quality seeds and nutritious crops should continue to be supported by the Government and its partners, and the private sector should also be involved for greater sustainability. However, the sustainability of the project goes beyond the national nutrition institutions as there is continued production of the promoted crops and enhanced availability of nutritious foods on the targeted sub-hills, depending on the success of the VSLAs and the marketability of the produce.

Efficacy

25. The overall achievement of the PDO is rated as **Substantial** given that two PDO indicators exceeded their targets, one was partially achieved.(62% of the target).; Seven of the ten intermediate indicators achieved or exceeded their targets, two were achieved substantially (over 80% of the targets) and one was partially achieved (70% of the target). The achievement is assessed for each of the two aspects of the PDO: (i) to increase production of micronutrient-rich foods, and (ii) to increase consumption of micronutrient-rich foods.

26. **PDO part 1: Increase production of micronutrient rich foods. Rating: High.** The PDO indicator measuring the achievement of this part of the PDO is the "Percentage of participating first 1,000 days households reporting production of at least four micronutrient-rich crops in target areas." This indicator exceeded its target (118% of the target). These results were achieved mainly due to the innovative FG approach which allowed the project to reach the population rapidly, to obtain results and to ensure their sustainability. Each FG consisted of 10-15 women chosen by proximity. Each FG had a leader and her deputy. Once the FGs were created, they transmitted agricultural techniques, composting, kitchen gardens using local production, and nutrition messages. Iron biofortified beans, vegetables, and other inputs such as fertilizers, were distributed to leaders of FGs in order to be cultivated in a common field so that the production was shared at the first harvest. VSLAs were also formed around FGs.

27. ***The intermediate results indicators that contributed to the achievement of the first part of the PDO*** surpassed or substantially achieved their targets: number of first 1,000 days households who received agriculture inputs (107% of the target); number of Family Group Leaders with operational kitchen garden demonstration sites (144.7% of the target); number of first 1,000 days households reporting production of four or more micronutrient rich foods (122.3% of the target); and number of FG members producing at least 50 kg of high-iron beans per year (86.5% of the target).

28. To increase the **production of micronutrient rich foods**, the project effectively used Family Groups members to increase production; trained 245 agriculture extension workers; developed in collaboration with key stakeholders from the Ministries of Health and Agriculture an integrated agriculture-nutrition training manual; established 14,642 kitchen gardens; distributed to FGs vegetable seeds, high iron beans and OFSP vines; supported 30,506 households with bio-fortified high iron beans and vegetable seeds

29. **PDO part 2: Increase consumption of micronutrient rich foods. Rating: Substantial.** Achievement of the two PDO indicators in support of this PDO was as follows:
    a) ***"Percentage of children aged 6-23 months reporting consumption of foods from four or more food groups in the previous 24 hours in target areas": This indicator was not achieved as expected (62% of the target***). While the PDO indicator related to the production of micronutrient rich foods exceeded its target, the indicator for consumption of these foods did not reach the same level of performance. This needs to be viewed against the fact that the indicator related to production of micronutrient is linked only to the beneficiaries of the project who have received inputs while the indicator on consumption concerns a wider group including the beneficiaries and non-beneficiaries of the project in the targeted area. In addition, changing the food consumption behavior of more than 50% of the population in 3 years is challenging, and delays in project start up and in implementation accentuated the situation.

    b) "***Percentage of children 0-23 months of age participating in community-based nutrition activities in target areas" was exceeded (164%* of the target)**. These results were achieved by relying on the Family Group approach, collaboration with different sectors (agriculture, health, environment, home affairs), the use of community-based associations, community health workers, and lead mothers "mamans lumières" (volunteers for PDH sessions).

30. ***The intermediate results indicators that contributed to the achievement of the second part of the PDO*** surpassed their targets and one was partially achieved: number of PDH sessions delivered in participating communities (151.6% of the target); number of children aged 0-23 months of age participating in monthly community based GMP

sessions (71.1% of the target); number of Service Providers trained in nutrition-promotion activities (111.4% of the target); number of first 1,000 days households participating in Family Groups (101.6% of the target).

31. In order to increase the **consumption of micronutrient rich foods**, the project also used the Family Groups approach to mobilize communities to improve nutrition practices. Many outputs were achieved: 298 smartphones were purchased for GMP and PDH monitoring through an M-Health application; 105 health staff and 277 CHWs and PDH volunteers were trained on GMP and PDH monitoring using tablets (M-health application); 1,024 CHWs and PDH volunteers were trained on Infant and Young Child Feeding (IYCF), GMP and PDH approaches; working materials were provided to CHWs and CGOs to support them in awareness activities to improve nutritional practices (387 bicycles and 403 weighing scales were purchased and distributed to CHWs and CBOs located at all 129 target hills; 108 administrative authorities at different levels were oriented on Micronutrient Powders (MNPs) approach; and 245,412 children (128,988 girls and 116,424 boys) were screened.

32. ***Two intermediate indicators on project management contributed to achievement of the PDO.***
    a) *Establishment of multi-sectoral steering committee at the national level:* A multisectoral committee was set up at the national level for better coordination and to provide guidance on project implementation. This steering committee met once a quarter and was chaired by the SUN focal point (second Vice Presidency of the Republic) and included Governors of the two p provinces, the ministers involved, representatives of religious denominations, civil society, and development partners.
    b) *Number of knowledge-sharing events held at national and provincial levels*: Four knowledge-sharing events were organized by the project (against a target of five). WVIB presented its experience of using electronic tools to monitor growth monitoring services for children to government officials and religious leaders at central and provincial levels. This practice allows a child to be tracked from the day of registration and all data collected are connected to the child's identifiers. The system also allows the exact calculation of anthropometric measurements. This experience was selected for presentation at the Global Digital Health Forum 2019 in Washington, DC. Moreover, the decentralized GMP to the sub-hill level and its effects on growth among children screened was shared within the WVI nutrition network (internal community of practices). In addition, two videos entitled, “Lifesaving nutrition skills in the hands of community members” and “M-Health application rescues lives of malnourished children,” were produced and shared with partners including the Ministry of Health. These videos present the impact of the project on the fight against malnutrition.

Table 1: Achievement of PDO Indicators and Intermediate Results Indicators

N	Indicators	Baseline	Actual	Original Target	Revised Target	% against revised target
	PDO par 1: Increase production of micronutrient rich foods					
	Project Development Objective Indicator/PDO part 1					
1	Percentage of participating first 1,000 days households reporting production of at least four micronutrient-rich crops in target areas (Percentage, Custom)	18.45%	55.70%	50%	50%	**118%**
	Intermediate results indicators/ PDO Part 1					
2	Number of first 1,000 days households who received agriculture inputs (Number, Custom)	0	32 127	37 780	30 000	**107%**
3	Number of Family Group Leaders (FGLs) with operational kitchen garden demonstration sites (Number, Custom)	0	2 016	1 393	1 393	**144.7%**
4	Number of first 1,000 days households reporting production of four or more micronutrient rich foods (Number, Custom)	0	32 127	33 058	26 250	**122.3%**
5	Number of FG members producing at least 50kg of high-iron beans per year (Number, Custom)	0	22 728	33 058	26 250	**86.5%**
	PDO Part 2: Increase consumption of micronutrient rich foods					
	Project Development indicators/PDO part 2					
6	Percentage of children aged 6-23 months reporting consumption of foods from four or more food groups in previous 24 hours in target areas (Percentage, Custom)	10.5%	41.40%	60%	60%	**62.4%**
7	Percentage of children 0-23 months participating in community-based nutrition activities in target areas (Percentage, Custom)	1.2%	65.00%	40%	40%	**164.4%**
	Intermediate Results Indicators/PDO part 2					
8	Number of PDH sessions delivered in participating communities (Number, Custom)	0	2710	1710	1787	**151.6%**
9	Number of children aged 0-23 months participating in monthly community based GMP sessions (Number, Custom)	0	189 183	266 000	266 000	**71.1%**
10	Number of Service Providers trained in nutrition-promotion activities (Number, Custom)	0	1 198	1 075	1075	**111.4%**
11	Number of first 1000 days households participating in Family Groups (FGs) (Number, Custom)	0	30 506	37 780	30 000	**101.6%**
	Intermediate Results Indicators/PDO part 1 and 2/Project Management and Administration, Monitoring and Evaluation, and Knowledge Dissemination					
12	Establishment of multi-sectoral steering committee at national level (Yes/No, Custom)	0	Yes	Yes	Yes	**100%**
13	Number of knowledge-sharing events held at national and provincial levels (Number, Custom)	0	4	5	5	**80%**

33. **All indicators (PDO and IRI) related to PDO part 1 (increase production of micronutrient rich foods) achieved or surpassed their targets;** For PDO part 2, two PDO indicators surpassed and largely achieved their targets and 83% of IRI indicators achieved or surpassed their targets. The IRI related to Component 3 (Project Management and Administration, Monitoring and Evaluation, and Knowledge Dissemination) have been included in the 2 parts of the PDO (Table 2).

Table 2: Summary of indicator achievement

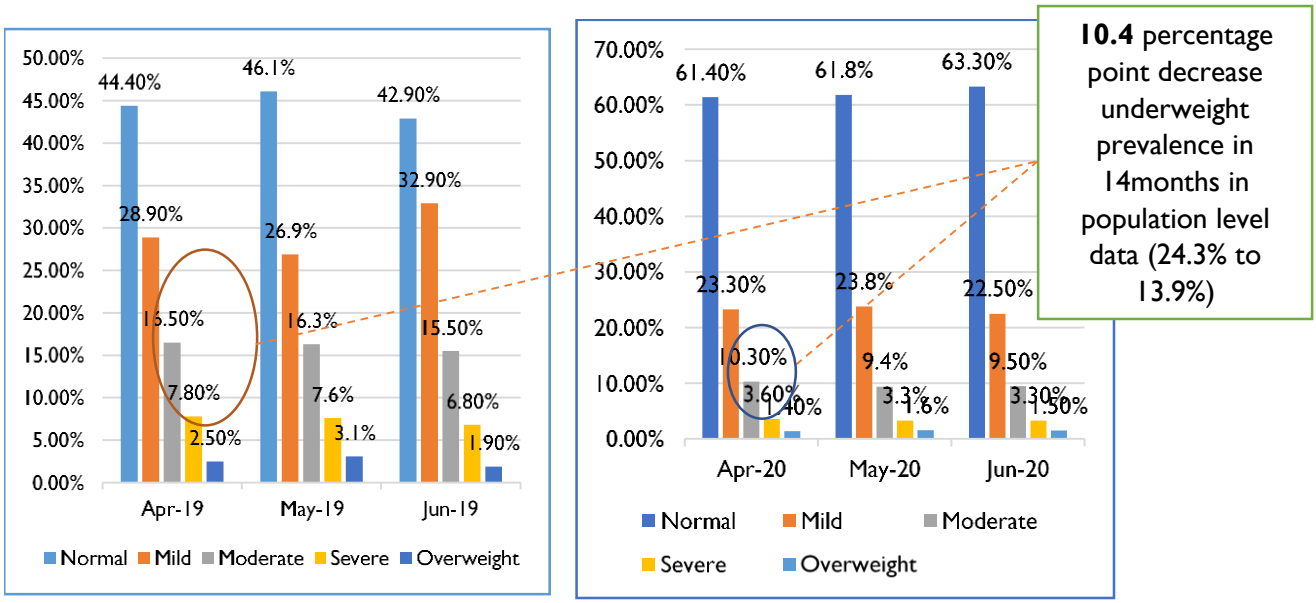
Rating	PDO part 1		PDO part 2	
	PDO indicators	Intermediate results indicators	PDO indicators	Intermediate results indicators
Surpassed (100%+)	1	3	1	3
Achieved/substantially (80%+)		3		2
Partially achieved (65%-79%)			1	1
Total	1	6	2	6
% surpassed and achieved	100%	100%	50%	83%

34. **Impact on breastfeeding**: Comparing the baseline and the end-line surveys (using anthropometrics measurements) and taking into consideration project and non-project implementation area in the 2 provinces, the impact on breastfeeding is mixed. This can be attributed to the fact that the breastfeeding rate was very high before the start of the project, making further improvements more difficult. Early breastfeeding, within one hour of birth, was high and did not significantly change (p-value>0.05) during the project's implementation. According to the end-line survey, 84.6% of children were breastfed within the first hour of birth, ranging from 88.4% in Makamba to 80.8% in Rutana health districts, in comparison to 85.8% and 82.9%, respectively, at the baseline survey. (The 2017 DHS indicated quite similar results – 82.3% and 81.5% in Makamba and Rutana provinces respectively). The end-line survey found that the proportion of children aged under 6 months who were exclusively breastfed in Makamba was 89.1%, little different from the baseline of 90.5%. However, in Rutana province, the end-line survey found an exclusive breastfeeding rate of 87.2%, significantly higher than the baseline of 71.5% (p-value<0.001). At the same time, the comparison of the rate of exclusive breastfeeding between members of Family Groups and other women shows a statistically significant difference (p<0.05), which may indicate an impact of the IYCF training provided to the beneficiaries of the project.

35. **Complementary food diversification**: The end-line survey showed that 16.7% of children aged 6-23 months had consumed at least 4 groups of food in the last 24 hours prior to the survey; the proportions were 20.0% and 13.5% in Makamba and Rutana health districts respectively. This is significantly higher (p-values <0.001) compared to the baseline, estimated at 13.1% and 7.9% in Makamba and Rutana respectively. This may suggest a positive impact of the IYCF approach in the area, though there is still room for improvement as the rate is still low.

36. **Impact on moderate malnutrition and underweight**: According to project monitoring data, the GMP and PDH monitoring resulted in significant changes in terms of underweight and moderate malnutrition during project implementation.

37. According to GMP sessions of project beneficiaries, moderate[1] and severe[2] underweight among children aged 6-23 months decreased from 24.3% in April 2019 (7 300 children screened) to 13.9% in April 2020 (19 088 children screened), which represent 10.4 percentage points decrease of underweight prevalence in 14 months (source: client ICR Report).



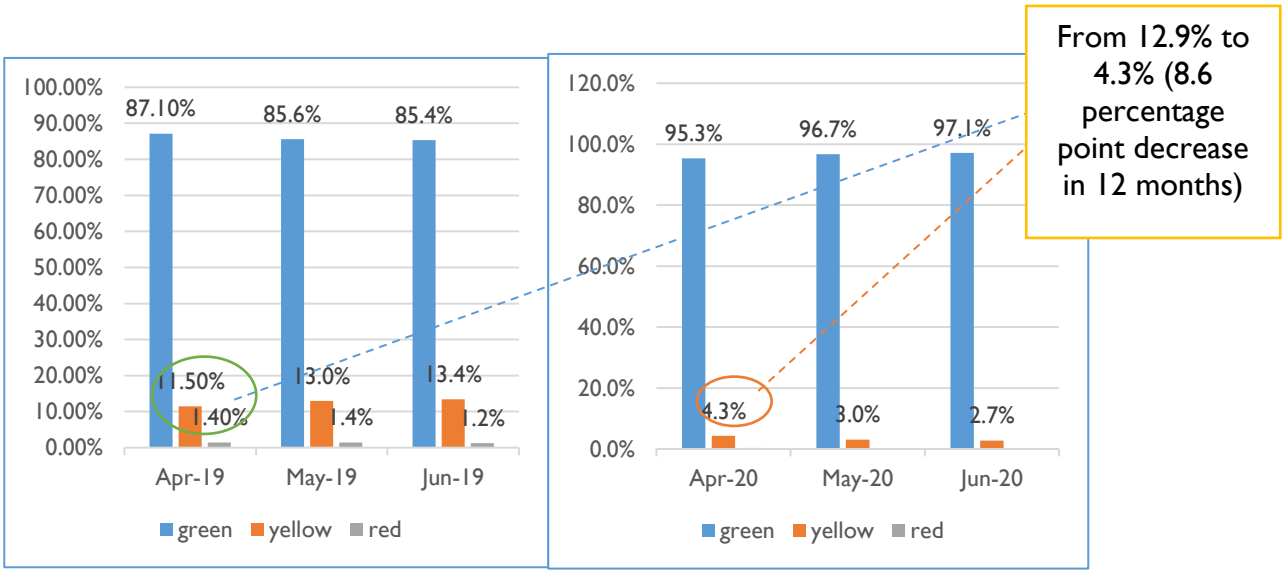
Graph 1: Evolution of moderate and severe underweight during project implementation

38. The rate of moderate acute malnutrition[3] (i.e. MUAC status) significantly decreased from 12.9% to 4.3% of children aged 6-23 months from the starting period of using the M-health application in April 2019 to June 2020. Overall, the prevalence of moderate acute malnutrition decreased by 8.6 percentage points during the project period as detailed in the graph below (source: client ICR Report).

[1] Number of children whose weight-for-age z-score is below minus 2 (-2.0) standard deviations (SD) below the mean on the WHO Child Growth Standards

[2] Number of children whose weight-for-age z-score is below minus 3 (-3.0) standard deviations (SD) below the mean on the WHO Child Growth Standards

[3] Moderate acute malnutrition (MAM), defined as weight-for-height z-score (WHZ) between −2 and −3 or mid-upper arm circumference (MUAC) between 115 millimeters and <125 millimeters (WHO 2012)



Graph 2: Evolution of moderate malnutrition rate during project implementation

39. **Stunting status.** Although the ultimate long-term objective was to reduce the prevalence of stunting, the project did not have the ambition to reduce it significantly in the targeted area, given the short implementation period (less than 2 effective years) and small scale (2 health districts). Moreover, stunting was not measured in the end line survey in the targeted area of the project. However, the rate of stunting in Makamba Province slightly decreased from 53% (baseline survey) to 51% (SMART Survey 2020) but remained at the same level of 55% in Rutana Province for both the baseline and SMART 2020 survey.

Efficiency analysis

40. **Economic analysis**: No Economic analysis/ Cost Benefit Analysis (CBA) was conducted at baseline during project inception. An ex-post Cost Benefit Analysis (CBA) was prepared by the ICR team to understand the economic viability of the project. More specifically, the return on investment was calculated for the increase in production and consumption of micronutrient-rich foods among targeted groups in the Gihofi and Makamba districts. We used three main metrics: the Net Present Value (NPV), the Benefit Cost Ratio (BCR) and the Internal Rate of Return (IRR). CBA assesses projects by comparing investment costs with the stream of economic benefits. The streams of costs and benefits are discounted to present values using a discount rate, which represents the opportunity cost of capital in Burundi. A conservative discount rate of 12%[4] was used to reflect the opportunity costs of capital in Burundi. In addition, a sensitivity analysis was conducted by assigning different values to the social discount rate, namely 10% and 20% to get the lower and upper estimates of the NPV, IRR and BCR.

41. **Project costs:** The costs included in the CBA reflect the marginal costs of the project compared to the status quo. In this analysis, project costs focus on activities dedicated to improving nutrition outcomes among 6-23 months old children. Our efficiency assessment disentangled costs involved in each activity to enhance nutrition, increase production through the distribution of fertilizers/seeds and setting up VSLAs from 2017 till the project closing date in 2020. However, It is worth nothing that discrepancies between projected costs and actual costs disbursed for each component of the project, despite being minor might have affected the operational efficiency of the project

[4] In 2019, the lending interest rate of Burundi was at 14.5% and has been consistently above 12% since 1978. (Source: World Bank, WDI)

as reflected in Table 3 below.

Table 3: Differences between planned costs and disbursed costs

COMPONENTS	PLANNED BUDGET (IN US$)	EXPENDITURES (IN US$)	VARIANCE (in US$)	VARIANCE EXPLANATION
COMPONENT 1	1,394,437.00	1,453,153.60	58,716.60	This difference is mainly due to the cost of 15 additional hills included after the Mid-Term review, where additional CHWs and Mother Leaders were trained and equipped. It is also attributed to additional PDH/GMP kits used during the decentralization process (from hills to sub hills).
COMPONENT 2	925,754.00	785,715.34	140,038.66	This discrepancy is explained by a refresher training on VSLA not done due to COVID-19. Consultants in charge of FG & VSLA were hired with a delay (one year later in September 2018) and fertilizers were not purchased for the last agricultural season due to lack of product on the market.
COMPONENT 3	409,210.00	493,790.73	84,580.73	The budget for the end-line survey increased from US$25,000 to US$93,443.77 and audit cost from US$9,000 to $22,127. At the beginning these budget lines were underestimated.
TOTAL	2,729,401.00	2,732,659.67	3,258.67	The additional amount was gained because of variation in the exchange rate

Table 4: Project costs/ actual amount disbursed in Millions Burundian Franc for each year for each category of activities

	2017	2018	2019	2020	**Total**
Costs[5] associated to the improvement of children's malnutrition (BUF M)	0.00	484.58	749.83	208.90	1443.30
Costs production of biofortified crops (BUF M)	0.00	264.13	315.44	0.00	579.57
Costs VSLAs (BUF M)	0	13.78688	397.567	0	411.35

42. **Converting project benefits to monetary terms:** To calculate the benefits of specific training session activities aimed at improving nutrition outcomes of children, we follow the economic valuation approach of the number of stunting cases averted developed by Walters et al. (2018) and presented below. We used data provided by the PIU to estimate the number of stunting cases averted by the project for each year from 2017 till 2020. Much

[5] These costs include those related to set up the FARNs and SPC prevention training sessions.

specifically, for activities associated with the reduction of malnutrition, the PIU provided us with rough estimates of the number of children under 23 months old with improved nutrition status as a result of the project. We then assign a monetary value to each of those children with improved nutrition status using the corresponding GDP per capita[6] (in current US $) for each year from 2017 to 2020. We follow Walters et al. (2018) and use the following equation for the economic valuation of project benefits stemming from averting malnutrition among children under 23 months of age in the project areas :

$$\boldsymbol{B = CS * GDPpc * S * L}$$

Where:

B= Monetarized Benefits (in current $ USD)
CS: estimates of unique cases of stunting prevented (averted)
S: Percentage of wage income gained as a result of the <23 months old child not being stunted
L: proportion of income from labor
GDPpc: GDP Per capita (in in current $ USD)

Table 5: Estimated number of children saved from malnutrition by the project per year

Year	2017	2018	2019	2020
Project estimates	0	0	13066[7]	13978[8]

For each child indicated by the PIU as having been "*saved*" from malnutrition from the project inception year in 2017 till the project closing date in 2020, we value the economic benefits at 34 percent of the GDP per capita based on estimates of the impact of childhood stunting on adult wages. (See Alderman et al.,2017; McGovern et al. (2017)). We also follow Lübker (2007) by putting the proportion of income from wages at 52 percent. Secondly, we computed a separate estimate of benefits stemming from the distribution of seeds through yield and production of biofortified crops for each year from 2017 till 2020. The table 6 below provides an overview of the benefits stemming from malnutrition training activities , the production of biofortified crops and setting up VSLAs.

Table 6: Estimated benefits by the project per year for the production of bio-fortified crops and setting up VSLAs

	2017	**2018**	**2019**	**2020**
Quantity of crops produced/Beans (in Kg)[9]	0	0	87299.7	857354.5
Total number of vegetable gardens[10]	0	0	0	14642
Total Benefits from Production (in millions BF)	0	0	218.25	2394.16[11]

[6] It is worth mentioning that there is still a hot debate among researchers on whether the GDP per capita truly reflects future earning of the poorest people targeted by development interventions. Nonetheless, the GDP per capita still remains the best measure .
[7] 6,195 children saved from malnutrition through FARNs sessions and 7,783 saved through community SPC prevention sessions
[8] 4,839 children saved from malnutrition through FARNS sessions conducted and 8,827 children saved following community activities to prevent malnutrition (SPC: *"Session Promotion Croissance"*, FARN "*Foyer d'Apprentissage et de Rehabilitation Nutritionel*")
[9] In 2019, the sales price in the market was estimated at 1500 BF
[10] The main vegetables produced in each garden are spinach, carrot, eggplant and beet. In each vegetable garden, project food security specialists estimated the production of spinach at 63 kg for a market sale value of 500 Burundian Franc, the production of carrot was estimated at 40 kg for a market sale value of 2500 Burundian Franc, the production of eggplant was estimated at 31.5kg for a market sale value of 1500 Burundian Franc, the production of beet was estimated at 31 kg for a market sale value of 4000 Burundian Franc. Hence, we estimated the average monetary production for each vegetable garden at 75687.5 Burundian Franc
[11] This is the sum of the monetary benefits stemming from the production of beans and vegetables garden

Number of VSLAs	0	0	930	85
Monetary benefits from VSLAs	0	0	0	14642
Benefits from VSLAs (in millions BF)[12]	0	0	1586.48	145.00

43. **Cost Benefit Analysis results:**

Malnutrition: Under the base-case scenario (social discount rate of 12%), investing in malnutrition activities under the MCNE project in Burundi generated economic benefits with a positive NPV of BF 0.161 million, a IRR of 57.5% and a B/C ratio of 1.27, indicating that for every dollar invested on activities mainly aiming at reducing malnutrition, the project yielded a sligthly higher economic return of US$1.27 equivalent to a percentage return of 57.5%. A sensitivity analysis was conducted to test the robustness of those estimates. In Scenario 2, the discount rate was reduced to 10 percent, which produced a slightly similar but higher NPV of BF 0.178 million and a B/C ratio of 1.29. Under Scenario 3, the discount rate was increased at 20 percent, which yields a NPV of BF 0.104 million and a B/C ratio of 1.21. Therefore, the ex-post CBA analysis indicates that activities to improve child malnutrition in MCNE project areas were sound investments.

Table 7.a: Results of Cost-Benefit Analysis: Base-case scenario and sensitivity analyses (activities aiming at addressing malnutrition among children <23 months)

	Discount rate	NPV	ICR	BCR
Base-case scenario	12%	BF 0.161 M	57.5%	1.27
Scenario 2	10%	BF 0.178 M	57.5%	1.29
Scenario 3	20%	BF 0.104 M	57.5%	1.21

ii) Production: Under the base-case scenario (social discount rate of 12%), investing in activities aiming at enhancing the production of bio-fortified crops under the MCNE project in targeted areas generated economic benefits with a positive NPV of BF 1241.79 million, a IRR of 183% and a B/C ratio of 3.85, indicating that for every dollar invested on activities mainly aiming at improving the production of bio-fortified crops, the project yielded a higher economic return of US$3.85 equivalent to a pecentage return of 183%. A sensitivity analysis was conducted to test the robustness of those estimates. In Scenario 2, the discount rate was reduced at 10 percent, which produced a slighly higher NPV of BF 1343.93 million and a B/C ratio of 3.95. Under Scenario 3, the discount rate was increased at 20 percent, which yields a NPV of BF 914.92 million and a B/C ratio of 3.49. Therefore, the ex-post CBA analysis indicates that activities to improve production of biofortified crops through seed and fertilizers distribution in MCNE project areas were sound investments.

Table 7.b: Results of Cost-Benefit Analysis: Base-case scenario and sensitivity analyses (production)

	Discount rate	NPV	ICR	BCR
Base-case scenario	12%	BF 1241.79M	183%	3.85
Scenario 2	10%	BF 1343.93M	183%	3.95
Scenario 3	20%	BF 914.92 M	183%	3.49

iii) VSLA: Under the base-case scenario (social discount rate of 12%), investing in VSLAs under the MCNE project in Burundi generated economic benefits with a positive NPV of BF 927.41 million and a B/C ratio of 4.15, indicating that

[12] Each VSLA group shared an average of 1,705,895 BF per year

for every dollar invested on activities mainly aiming at reducing malnutrition, the project yielded a higher economic return of US$4.15 equivalent to a return of 85.36. A sensitivity analysis was conducted to test the robustness of those estimates. In Scenario 2, the discount rate was reduced at 10 percent, which produced a slightly higher NPV of BF 980.89 million and a B/C ratio of 4.16. Under Scenario 3, the discount rate was increased at 20 percent, which yields a NPV of BF 748.38 million and a B/C ratio of 4.12. Therefore, the ex-post CBA analysis indicates that activities to set up VSLAs were a sound investment.

Table 7.c: Results of Cost-Benefit Analysis: Base-case scenario and sensitivity analyses (activities pertaining to setting up VSLAs)

	Discount rate	NPV	ICR	BCR
Base-case scenario	12%	BF 927.41 M	85.36	4.15
Scenario 2	10%	BF 980.89 M	85.36	4.16
Scenario 3	20%	BF 748.38 M	85.36	4.12

Overall, the economic and financial analyses of the three main categories of activities implemented over the cycle of the MCNE project show that it was a sound investment.

44. **Implementation efficiency:** The following issues might also have impacted the efficiency of the project.
    - **(a)** World Vision had a steep learning curve in understanding World Bank procedures for project operations, mainly on financial management and procurement, which led to significant project implementation delays.
    - **(b)** There were also delays in hiring key project staff. Consultants in charge of Family Groups and VSLAs only came onboard in September 2018, more than a year after the project effectiveness date.
    - **(c)** Some costs of service delivery were underestimated at project inception. More specifically, the budget under component 3 has been underestimated, leading to overspending of almost US$84,580.73.

    The COVID-19 pandemic and the inavailability of some fertilizers on the market during the last agricultural season were other major unforeseen circumstances which disrupted the implementation of some activities. The refresher training on VSLAs was not done due to COVID-19, generating a discrepancy between planned costs and actual costs under component 2.

45. The overall rating for Efficiency is **Substantial** as the project was cost-effective and generated value-for-money despite a few implementation challenges..

Overall Outcome Rating

46. **The overall outcome is assessed as Satisfactory given the High relevance and Substantial efficacy of the project.**

Relevance	**High**
Efficacy	**Substantial**
PDO Part 1 PDO Part 2	**High** **Substantial**
Efficiency	**Substantial**
Overall outcome	**Satisfactory**

Other Outcomes and Impacts

47. **Participation** in community-based nutrition activities by children aged 0-23 months from non-targeted areas: Although children from beneficiary households were significantly more likely to participate in child growth monitoring activities (65.8% against 39.7%), the participation rate of children from non-beneficiary households is also satisfactory because it is approaching the target value (40%). This shows a spillover effect of the project on non-targeted households.

48. **Innovative child growth tracking system (Commcare & M-health):**The project introduced a new Digital strategy for GMP and PDH monitoring using tablets to ensure timely availability of quality data for decision making and response. The growth monitoring system for children under 5 years, anthropometric measurements, references to PDH and Health centers, as well as the monitoring of malnourished children through home visits was done using the M-Health application, also called Commcare. Community health workers, equipped with smartphones, collected and entered data which were synchronized on a monthly basis. The application connects and sends data to the database on the application's server directly (if internet connection is available) or deferred if not connected to internet. The added value of the new strategy is that both MUAC and underweight were used as criteria for child referral to PDH sessions or at health facility level. The use of these two criteria enabled the detection of more children eligible for PDH sessions. In fact, a total of 245,412 children were screened during the project implementation. Of these, only 8,085 with moderate acute malnutrition (MAM) would have been eligible for PDH sessions, if only MUAC was used as referral criteria. But using the 2 criteria (MUAC and underweight), the project was able to detect 34,776 additional children with underweight as also eligible for PDH sessions.

49. **Knowledge exchange**: The project shared with stakeholders its experience of an using electronic tool for children's growth monitoring at the community level and produced two videos on innovative approaches to fight against malnutrition.

50. **Gender**: Key beneficiaries of the project were pregnant and breastfeeding women with children aged 0-23 months. The results of the project were obtained in particular through the adoption of an innovative approach for grouping target households into Family Groups which were composed mainly of women. In addition, women of childbearing age (15-49 years) also benefited from regular monitoring of their nutritional status. There were also five men per Family Group who participated in some activities such as sensitizing other men and supporting VSLAs. Men were also sensitized on the need to reduce women's workload and for men to increase time spent with children.

51. **Institutional strengthening**: In implementation of its activities, the project relied on existing structures while strengthening their capacity in the areas of food security and nutrition, which fosters ownership on which the sustainability of the achievements of the project can be built. These structures include representatives from the ministries of health and agriculture at the provincial and district levels, local administration, community health workers, leader mothers (Nutrition), community-based associations, agriculture extension workers and zonal assistants (agriculture). At national level, the project signed a memorandum with ISABU (Burundi Institute of Agronomic Sciences) for multiplication of quality orange-flesh sweet potatoes seeds and with ONCCS (National Seed Control and Certification Office) for seed control and certification.

52. **Mobilizing private sector financing**: The project supported 12 seed multipliers (2 per intervention commune in 6 communes). The latter are individuals with large plantations and the ability to multiply seeds. The project provided seeds to these multipliers only once at the beginning (5 kgs). Some selection criteria were required by ISABU to be

selected as a seed multiplier. The project supported these multipliers in the approval process by ISABU and to be certified by ONCCS. Even after the closure of the project, the seed multipliers continue their activities and received seeds to be multiplied from ISABU.

53. **Poverty reduction and shared prosperity**: FG members were included in VSLAs to reduce financial barriers to the production of nutritious crops. A VSLA is a group of people who save together and take small loans from those savings. The activities of the group run in cycles of one year, after which the accumulated savings and the loan profits are distributed back to members. The purpose of a VSLA is to provide simple savings and loan facilities in a community that does not have easy access to formal financial services. In addition to be a source of income to meet the primary needs of households and individuals, it also allows for social cohesion and mutual aid conducive to the sustainability of the project achievements. Beneficiaries appreciated VSLAs: for example, one FG member indicated that the loans received from VSLAs allowed her to send her son to a private secondary school for better education; another indicated that she was able to buy goats and through them she got natural fertilizers for her crops; another stated that she became more autonomous and was able to buy herself loincloth without having to ask money from her husband .The project supported 1,015 VSLAs and 5,095 VSLA committee members were trained on management of VSLAs. Supervision and capacity building for VSLA's committees are important to avoid mismanagement and to provide mechanisms for resolving conflicts that may arise.

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

A. Key factors during preparation

54. **The project design incorporated lessons learned from the experiences of the government and development partners in Burundi, international best practice from development science and nutrition, and lessons learned from various global and national evaluations and assessments**. The project design was aligned with the PSMSAN. A range of projects addressing nutrition and implemented in Burundi (by MoH and/or MoA, with support from partners including the EU, the WFP, UNICEF, USAID, FAO, and iNGOs such as World Vision and Concern Worldwide) were reviewed during project preparation to identify and incorporate lessons learned from the Burundi context: (i) community based nutrition services to address undernutrition in the community such as GMP, PDH, and community based management of acute malnutrition, (ii) community based promotion of households kitchen gardens, (iii) promotion of biofortified crops to reduce micronutrient deficiencies.

55. **The project design included an innovative approach in four key steps**. This includes: (i) the introduction of an innovative mobile technology to improve community participatory monitoring and supervision of CHWs and health staff; (ii) the development of a community based model during the first 1,000 days, a critical window of opportunity to improve health and nutrition of women and children; (iii) the introduction of multi-sector interventions rather than interventions focusing on a single sector; and (iv) the engagement of fathers and mothers of farmers' associations as change agents in their households.

56. The **PDO was focused, realistic and clear (”**to increase production and consumption of micronutrient-rich foods among targeted groups”) and had a well-designed results framework aligned with operational objectives.

57. **Risks and mitigation measures were adequately assessed**. During preparation, the PAD indicated the following key

risks: (i) Reduced participation of key stakeholders and beneficiaries, (ii) weak capacity of stakeholders and beneficiary communities to implement activities, (iii) resistance to dietary changes, (iv) drought, floods, or disease threatening crops, (v) limited experience of the implementing agency. For each of these risks, several mitigation measures were agreed between the government, WVI and the World Bank, and built into the project. On risks (i) and (ii), it was agreed that project activities would be clearly explained to beneficiaries and all stakeholders, training would be conducted, and planning of activities had to take into consideration farming seasons since the majority of project beneficiaries were farmers. Project activities had also to ensure that they did not keep beneficiaries for more than the necessary time to allow men and women to deal with other household activities. The agricultural activities had to sensitize the men on their role to support their wives in their daily activities to reduce the women's workload and for the men to increase time spent on child caring; as a result, improving the well-being of the whole family. For the risk (iii), the project had to provide strong messaging around the importance of including iron-rich beans and other micronutrient rich foods into children's diet and also provide cooking demonstrations and sample menus on how to prepare high iron beans and micronutrient-rich foods for children and the entire household. For risk (iv), it was suggested that in such a case, the project would collaborate with the PRODEMA project (agriculture sector project) and other partners, to ensure that a resilience component was included in project activities to support households to develop coping mechanisms, such as home gardening techniques and importing drought- and pest-resistant biofortified high iron bean strains. For the point (v), it was planned to train FM staff on fiduciary procedures throughout the life of the project. TORs for each responsibility had to be clearly defined in the PIM agreed between the parties involved. Supervision missions had to be conducted at least every six months.

B. Key factors during implementation

Factors subject to the Government control and/or implementing entity

58. Startup delay: The project was approved on March 16, 2017, and a grant agreement with the World Vision Burundi was signed on May 2, 2017 and was declared effective on July 25, 2017. However, as World Vision Burundi was not accustomed to working with the World Bank, it took a long time for the project team to become familiar with the policies and procedures governing the projects funded by the World Bank. This resulted in delays in starting implementation of the project. In particular, the implementing agency needed time to master the financial management and procurement aspects and training took place in May 2018. The first disbursement took place in January 2018, i.e. six months after the effectiveness declaration of the project. This delay in disbursement had a significant impact on the implementation of key project activities, which were slowed down by lack of resources. After staff recruitment was completed, a series of training sessions were conducted on fiduciary aspects as well as other IDA policies and procedures conducted by the World Bank team for the benefit of the project team.

59. **Failure to respect the crop calendar:** the orange-flesh sweet potatoes were not cultivated properly because the strings of potatoes were distributed after the cultivation period and they were dried up by the sun; except those that were planted in the swamps. To sort out this issue, a memorandum was signed between WVIB and the national agronomic Institute (ISABU) for the multiplication of quality seeds on site in order to avoid their unavailability during the growing season. WVIB supported also local seed multipliers.

60. **Acquisition of fertilizers for the support of households to develop kitchen gardens to produce foods with high nutritional value:** The government set up a unique mechanism for the acquisition of fertilizers for subsistence crops and prohibited any importation and distribution of these by other means. The project team proposed to buy the necessary fertilizer using this mechanism, but the Bank did not approve as it was deemed unreliable. To resolve this

issue, the WVI purchase order passed through the existing World Bank-financed Great Lakes agriculture project which had an approved procedure for importing fertilizer. During the period where fertilizers were not available, project beneficiaries purchased organic fertilizers with resources drawn from VSLAs. But some did not buy these fertilizers and others only bought them in small quantities.

61. I**mpact of iNGOs suspension for 3 months:** The Government of Burundi suspended all international NGOs in the country on October 1, 2018 and gave a three months' period to comply with new rules governing NGO activities. The World Vision International office in Burundi received authorization to resume operations in the country as of October 15, 2018, after two weeks suspension. The two weeks closure delayed some activities in the field but upon reopening, the project team succeeded in minimizing the impact on workplan implementation.

62. **Replacement of some of Community Health Workers (CHWs):** During implementation, one Health District decided to replace a large number of CHWs and this affected the project as the CHWs who were replaced had already benefitted from a package of training that included training on the M-Health application. However, the project was able to conduct training on M-Health for new CHWs put in place through a community designation procedure.

63. **Delays in conducting the end-line survey:** The end-line survey, a planned activity of the project critical to document the achievements of the project and progress towards the PDO and IRI indicators, had not yet started by the initial closing date (February 15th, 2020). Issues with the recruitment of the consultant identified to perform the survey and delays in obtaining the visa required to conduct the study, hampered the start of the survey. This led to a request for a no cost extension of the project to allow implementation of the survey.

64. **Effectiveness of the "Family Group" approach:** The FG innovation (see paragraph 26), through which most project activities were carried out, showed satisfactory results. A total of 2,016 structured FGs received different trainings on bio fortification techniques and received agriculture inputs (high iron beans seed, orange flesh sweet potato vines) and FG input packages. 2,016 demonstration sites were established in beneficiary communities (1 per FG) to promote homestead production of micronutrient foods. They have also been trained on how to establish kitchen gardens and they received 5 kinds of vegetable seed (amaranths, eggplants, carrots, beetroots, spinach). FG members were included in VSLAs to reduce financial barriers to the production of nutritious crops**.**

65. **Multisectoral approach and use of existing local structures:** The project tackled malnutrition in a holistic fashion, including the food security component (support in food production), the nutrition component (training on good nutritional practices for children and pregnant women) and the health component (growth monitoring and nutritional rehabilitation, referral to health facilities). At the operational level, the project involved local administrations, local health and agricultural officials, community health workers, leader mothers, and community-based associations. This multisectoral approach and use of local actors was the basis on which the sustainability of the achievements of the project can be built.

66. **Establishment of learning and nutritional rehabilitation homes**: Nutrition and rehabilitation homes are homes where children with MAM and underweight are admitted and managed using local foods. In these homes, cooking demonstrations and awareness sessions are held on some topics such as balanced diet, hand hygiene, water, latrines, complementary feeding, exclusive breastfeeding, and prenatal consultations. These homes are the homes of leader mothers (mamans lumières), which are CHWs dedicated to nutrition issues, and are managed by them. During the project implementation, the foods to be prepared for cooking demonstrations were brought by

participants themselves (mothers with moderately malnourished children and underweight) and the leader mothers were trainers. Through this practice, participants learned how with their own food they could fight against malnutrition. Moreover, since they were the ones who prepared the meals for the children, they learned how to do it at home. This learning by practicing, mixed with training or capacity building in relation to nutrition and other nutrititious eating habits, promoted the replication of practices at home. In these homes, only kitchen utensils were provided by the project.

Factors subject to the World Bank control

67. **Adequacy of supervision**: Overall, only two formal supervision missions (with aide memoires) were carried out during the 3 years of implementation. However, as the TTL was based in country, ad hoc meetings with the implementation agency were carried out regularly to sort out issues that arose during implementation. It should be noted that in mid-July 2019, the TTL moved to another position overseas with less flexibility to ensure the monitoring of the project, and a new one was appointed in January 2020.

68. **Adequacy of reporting**: Two aides-memoire were produced (June and December 2018) but not archived in the Bank's operations portal, and three ISRs were produced and archived in the portal. The lack of aides-memoire suggests that reporting to the government was insufficient.

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

A. Quality of monitoring and evaluation

69. **Monitoring and evaluation design**: the project created a comprehensive monitoring and evaluation system to generate data and evidence to track the implementation and progress towards results in addition to identifying, attributing, and explaining changes that occured during implementation. World Vision International Burundi managed monitoring activities through both project-specific systems and normal government systems, consolidated in quarterly reports at provincial level and overall, at project level. The project monitoring system was designed for monitoring and tracking progress and effectiveness in implementing the project (inputs, activities, processes, outputs, intermediate results, and PDO indicators). Moreover, even if the nutritional status of children or women in childbearing age (15-49 years) was not been taken into account in the monitoring and evaluation design to show the result of the project in term of improving nutrition, nutrition status was assessed by the baseline and the end-line surveys at provincial level, which is beyond the project implementation area. The monitoring and evaluation system design included baseline and end-line surveys to generate data for each of the outcome indicators and key process measures; annual reviews at the provincial level; a final evaluation using data from baseline and end-line surveys to document changes in key indicators in the target group before and after the project; and a final project review to disseminate lessons learned and identify next steps.

70. **Monitoring and evaluation implementation**: Detailed Implementation Plan (DIP) and Indicator Tracking Table (ITT) tools outlined the sources of data, frequency of reporting, responsibility for collecting data, and the flow of information for indicators including the PDO and IR indicators. For nutrition activities, the project developed a monitoring system of GMP and PDH sessions using smartphones (M-Health application/ Commcare). CHWs were responsible for monitoring all activities at the community level related to GMP and PDH sessions using smartphones and information recorded was synchronized on the M-Health server. A baseline survey was carried out and provided data for outcome indicators and key process measures. Annual reviews were conducted at the provincial level. A

final evaluation was completed using data from the baseline and end-line surveys to document the achievements of the project.

71. **Monitoring and evaluation utilization**: The monitoring and evaluation data on performance and results progress were used to inform project management and decision-making. Training materials and operational manuals to mobilize communities to improve nutrition practices were designed based on baseline findings on opportunities and barriers towards achievement of project objectives. During project restructuring, some changes were made in the results framework: (i) one indicator related to PDH sessions in participating communities was revised upwards as PDH sessions were planned to be conducted at the hill level and were decentralized to the sub-hill level in order to cover all children screened as underweight who needed to be referred to PDH (the data was showing that children who were screened as underweight were not being directly referred to PDH); (ii) some intermediate indicators targets were revised downwards due to overestimated or inappropriate targets.

72. **Justification of the overall rating:** Given the achievements described above, the capacity and systems that improved data consistency and reporting, and the innovation tool developed for GMP and PDH sessions monitoring, the overall rating of quality of monitoring and evaluation is **Substantial**.

B. Environmental, Social and Fiduciary compliance

73. **Financial Management (FM)**: On the FM side, the implementing agency experienced difficulties in mastering World Bank guidance, policies and directives. FM staff also lacked some capacities and skills to carry out their tasks. The review of the IFRs raised issues and the audit opinion of the first year was qualified. As lessons learnt, the task team should conduct a deeper FM assessment whatever the type of institution designated as implementing agency. An appropriate mitigation action and capacity building plan should be developed to ensure that capacity gaps are covered.

74. **Procurement**: From the procurement perspective, the implementing agency showed many weaknesses in using World Bank procedures and standard bidding documents applicable to the Project. The mains issues were: (i) lack of experience of WVIB in using World Bank procedures; (II) implementation of activities before their approval in the procurement plan in STEP which were regularized after their implementation; (iii) the procurement specialist was not familiar with the World Bank procedures; (iv) there was no adequate internal and external oversight of procurement. The implementing agency produced and adequately maintained physical written records of all procurement and contract documents but online records through STEP were not regularly updated and were finally done after the project closure (during the grace period). To avoid such issues, the task team could have conducted before a deeper procurement assessment of the implementing agency and developed mitigation measures.

75. **Environmental and social safeguards**: The Bank safeguard instruments were not triggered because the project did not plan to finance any inorganic pesticides. The project included in its activities basic training to identify and mitigate the impact of pests through home produced methods. However, WVIB applied during the implementation of the project its own environmental and social safeguard protocol based on safeguard policies and behavior, community feedback and responses mechanism and environmental protection. The objective of the WVIB safeguard policy and behavior protocol is to prevent, report and respond to exploitation, abuse, or harm of adult beneficiaries and any children by WVIB staff and affiliates. A safeguard Preparedness Plan was used during the project implementation and all staff on board and affiliates underwent orientation or received awareness training (at least once in two years). Staff, partners, volunteers and contractors signed safeguard behavior protocols.

Concerning the safeguard staffing, World Vision has focal persons and safeguard management teams at its national office and cluster levels. During MCNE project implementation, there was no case of harassment or complaint reported. Training and sensitization were carried out to mitigate any environmental impact.

76. **A community feedback and response mechanism** was applied during project implementation and was a way for community members and partners to easily contact the client with questions, concerns and suggestions about activities. Feedback was given via phone, suggestion boxes and tables placed on sites during distributions. Every quarter, there was mentoring meeting where beneficiaries spoke about what worked well and what did not work and what could be improved.

C. Bank Performance

Quality at Entry

77. The Bank's performance during preparation and appraisal was **Satisfactory**. The Bank ensured that the PDO was aligned to the government's multisectoral food security and nutrition strategic plan (PSMSAN) priorities, such as: (i) increasing the availability, access and use of high nutritional value foods, and (ii) improving nutritional practices. The project was focused on nutrition-specific and -sensitive interventions to address the irreversible damage due to chronic malnutrition that happens from conception to two years of age, using a multi-sectoral approach and targeting the most poor and vulnerable population (pregnant and lactating women, children 0-23 months). However, some errors in the results framework were observed at the design stage as well as some lack of adaptation of proposed interventions to the local context.

78. The project used a combination of geographical targeting (based on poverty mapping) and malnutrition and vulnerability criteria to select the intervention area and eligible beneficiaries. In fact, Makamba and Rutana provinces were identified as the most vulnerable areas with the highest rates of wasting in the country. The technical design and implementation arrangements were well-grounded on solid understanding of the country context and learning from best practice from development science and nutrition; implemented programs related to nutrition in Burundi; and lessons learned from various global and national evaluations and assessments. The results framework was overall well designed, with indicators to monitor and track progress towards achievement of project objectives.

79. **The World Bank's approach to risk assessment was thorough, experience-based, consultative and candid**. Risks were identified and mitigation measures agreed in consultation with the government and WVIB during appraisal, which were built into the design (See section III). In particular, due to limited experience of WVIB in working with the WB, the Bank carried out training on fiduciary procedures for all FM staff of WVIB, but nine months after the effectiveness of the project.

Quality of supervision

80. **The Bank's performance in terms of supervision was Moderately Unsatisfactory**. As indicated above, the project was regularly monitored as the TTL was based in country, but only two formal supervisions were carried out, the aides-memoire produced were not archived in the portal and not shared with the implementing agency or government. For the second semester of 2019, the TTL moved to another position and was no longer on the ground but providing virtual remote support. Another TTL was appointed in January 2020, one month before the initial closing date of the project (15th February 2020).

Justification of Overall Rating of Bank Performance

81. The overall rating is Moderately Satisfactory. There were no shortcomings in quality at entry but shortcomings in the quality of supervision.

C. Risk to development outcome

82. A key risk to development outcome is the issue of sustainability of the gains made by the project:
    (a) *Sustainability of PDH sessions for malnourished children:* PDH sessions by volunteers presents a risk of not continuing. Indeed, these volunteers received financial motivation by the project and risked abandoning these activities. The alternative would be to discuss with the MOH to see how to integrate these activities in the package of services provided by leader mothers and CHWs. Indeed, the latter community actors are institutionalized in the health sector and the MOH is in the process of scaling up nationwide a system of performance-based incentives related to achievement of a community package of activities. This package could be extended to PDH sessions to promote community-based nutrition activities.
    (b) *Sustainability of bio-fortified beans and vegetables production:* The proportion of FG members that produced bio-fortified beans and vegetables during the project decreased from 55.7% to 44.3% at the end-line survey. Indeed, at the end of the project, some produced only vegetables and others only bio-fortified beans. During the group discussions and interviews (end-line survey), some reasons were given for those who no longer cultivate these crops. These include the poor productivity of the second distribution of seed beans which did not grow well, the lack of water for the vegetable gardens, as well as grazing by wandering livestock during the dry season.
    (c) *Sustainability of vegetable kitchen gardens:* Although 2,016 Family Groups Leaders had operational gardens at the end of the project (against a target of 1,393), only 32.4% of the members of the FGs surveyed had functioning vegetable kitchen gardens at the period of end-line survey. The reasons that explain the non-functioning vegetable gardens during the end-line data collection period were insufficient water and the livestock that damaged the established kitchen gardens in the dry season.
    (d) *Sustainability of learning and nutritional rehabilitation homes:* Learning and nutritional rehabilitation homes are managed by leader mothers already established, and foods mostly provided by households, which can be a pledge of sustainability. However, some households with malnourished children were very poor and could not bring food. The leader mothers were sometimes obliged to buy foods themselves with their own limited funds, which raise an issue of sustainability especially for very poor households. To address this issue, the project established VSLSAs to reduce financial barriers to the production of nutritious crops. Moreover, leader mothers need to be better organized and incentivized, which is envisaged by the Ministry of Health, and two ongoing WB Project (Health system support project “KIRA”, P156012), Nkuriza project (P165253), as well as other development partners are supporting the scaling up of PBF at community level to enhance CHWs and lead mothers. In addition, a social safety net project for very poor is ongoing (Merankabandi, P151835) with objective to provide regular cash transfers to extreme poor and vulnerable households with children. This project will be extended to cover more provinces and could support poor households with financial resources that could allow them to buy foods to bring for cooking demonstrations sessions.

V. LESSONS LEARNED AND RECOMMENDATIONS

Lessons learned

83. **Multisectoral and integrated approach, community participation**: One of the lessons learned from the project design and implementation and which allowed achievement of satisfactory results, is the importance of the multisectoral community-based nutrition interventions approach, involving from the start the ministries of health and agriculture and their structures at the peripheral level, the local administration, as well as CHWs, CBOs, leader mothers (”mamans lumieres”) and beneficiaries. The latter were grouped into Family Groups, targeting the “first 1,000 days” window for the poorest households.The integrated approach allowed for malnutrition to be addressed in a holistic way. According to the end line survey, one local administration representative in Rutana District stated that the project was very relevant because it contributed to conflict resolution. Referring to the Kirundi proverb "Munda harara inzara hakavyuka inzigo" which means that hunger is the source of conflict, he appreciated the fact that the project coupled the nutrition aspects with food security. He then underlined that several projects fail because they do not from the outset involve the main beneficiaries and those who will be responsible for sustaining project initiatives, such as local administrative officials, but this project took a good approach by involving various stakeholders on the ground. Future projects should build on this double dimension: multisectoral approach of interventions and community participation. Future projects should be also more global and involve other sectors, such as education by involving schools and teachers, social protection, water and sanitation, and trade.

84. **Use of Information Communication Technology at community level for GMP and PDH sessions**: The project introduced a new Digital strategy (M-Health) as an innovation to track the malnutrition status of children under five using smartphones combined with GMP and the timely treatment of malnourished children. This had significant impact in reduction of moderate and severe malnutrition cases in the communities. The use of ICT in malnutrition screening allowed more children to participate in the PDH sessions by combining two criteria: MUAC and underweight. The approach should be scaled up as a practical solution for using community level data in strategic decision making to address malnutrition.

85. **Training on nutrition and dietary practices**: trainings organized by the project aimed at behavior changes in dietary practices at community level and results achieved are satisfactory, as stated by stakeholders on the ground. Indeed, as reported by the end line survey, one local administrator from Makamba Province points out that Makamba is a very fertile region but what was missing is a knowledge of balanced diet and good feeding practices. He appreciated the fact that the project emphasized training and capacity building on nutrition for local stakeholders. A family group member said “when the project came to our area, parents had enough food for their children such as vegetables, beans, cassava and other items, but often did not know how to feed their children. We used to think, if you have a sauce of Ndagala (small fish), you just need to have cassava paste and that's enough food for the child. But with the project, we had very interesting trainings on how to feed our children, we learned that giving Ndagala and paste alone is not a good nutrition practice. We also learned how to feed ourselves as parents by combining foods that are rich in carbohydrates, protein and fat." This project demonstrates that household and local stakeholder training, using locally available food is a relevant approach in changing dietary practices in communities.

86. **Sustainability of beans biofortification, kitchen gardens and nutritional rehabilitation homes**: The final evaluation of the project showed that some households no longer produced biofortified beans or vegetables due in particular to the poor quality of seeds, lack of water for vegetable gardens as well as the wandering of animals destroying crops especially during the dry season. The project involved ISABU for the supply of quality seeds and ONCCS for their certification as well as the approval of two local producers per commune. A Bank-supported project, PRODEMA, and World Vision are beginning to integrate iron-rich beans into nutrition-sensitive agriculture initiatives, but low demand and insufficient supply of seeds were the initial bottlenecks. For future projects, it will be necessary to set up, in collaboration with ISABU and ONCCS, capacities at the peripheral level for the production of quality seeds for biofortified beans and to increase demand via sensitization. In addition, collaboration with the local administration and the ministry in charge of water in rural areas will be relevant to allow access to water without which crops, and vegetable gardens can be damaged.

87. **Impact on nutritional status**: This pilot project, which was carried out only in two health districts (6 communes) in 2 provinces, has achieved its objectives. The project also had an impact on nutrition outcomes during the less than two years of effective implementation of activities. The project focused on the first 1,000 days window of opportunity to tackle malnutrition and used innovative approaches. It would be relevant to use strategies and approaches of this pilot project to set up future projects on a larger scale and for a longer period (5 years and over), which could have an impact on chronic malnutrition.

88. **Decentralized GMP and PDH**: Future projects should apply this approach to ensure greater coverage of nutrition screening for early detection and quick rehabilitation of malnourished children.

Recommendations

89. **Issue of fertilizers acquisition**: The government has set up a single mechanism for the acquisition of fertilizers for subsistence crops and prohibited any importation and distribution of these by other means. The World Bank procurement specialists rejected this mechanism, considering it unreliable. Discussions should be conducted between the Bank and the government to find a consensus on this issue which will be of interest to several projects in the agricultural sector.

90. **Quality and frequency of Bank supervision**: The supervision of the project by the World Bank was not sufficiently documented. In the future, even for small trust fund projects, the same rigor on formal supervision regularity and documentation should be applied as required for normal World Bank-financed operations.

91. **Limited experience of the implementing agency in using World Bank procedures**: WVIB had limited knowledge of the World Bank procedures, especially financial and procurement aspects. The project team was trained in May 2018, nine months after effectiveness of the project. This situation delayed the implementation of activities. Moreover, the financial management and procurement staff showed limited capacities and skills to carry out their tasks. As a recommendation, the task team should conduct a deep financial management and procurement assessment of each implementing agency and develop mitigation measures.

92. As the lessons learned and the innovative approaches applied by the project should be documented in a more consistent way, and considering that the ICR format does not lend itself to this objective, a separate and more in-depth documentation should be carried out to draw all the lessons learned from the project. These can then be

used to strengthen the policy dialogue on chronic malnutrition with the Government and other stakeholders. Funding options for this exercise will be explored by the World Bank team.

ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: Increase production of micronutrient rich foods

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Percentage of participating first 1000 days households reporting production of at least four micronutrient-rich crops in target areas	Percentage	18.45 01-Jul-2017	50.00 15-Feb-2020	50.00 15-Feb-2020	55.70 15-Aug-2020

Comments (achievements against targets):
The project target have been exceeded (118%).

Objective/Outcome: Increase consumption of micronutrient rich foods

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Percentage of children aged 6-23 months of age reporting consumption of foods from	Percentage	10.50 01-Jul-2017	60.00 15-Feb-2020	60.00 15-Feb-2020	41.40 15-Aug-2020

four or more food groups in previous 24 hours in target areas					

Comments (achievements against targets):
The target was reached at 62%. According to the final evaluation report of the project, the target value was overestimated. Indeed, it is not easy to change eating behavior of more than 50% of the population in 3 years. In addition, the target of the previous indicator related to production of micro nutrient rich crops is 50%, which is lower than consumption target (60%), assuming that we cannot consume more than the quantity produced.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Percentage of children 0-23 months of age participating in community-based nutrition activities in target areas	Percentage	1.20 01-Jul-2017	40.00 15-Feb-2020	40.00 15-Feb-2020	65.80 15-Aug-2020

Comments (achievements against targets):
The project target has been exceeded (164%).

A.2 Intermediate Results Indicators

Component: Component 1: Mobilize communities to improve nutrition practices

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of PDH sessions delivered in participating	Number	0.00 01-Jul-2017	1,710.00 15-Feb-2020	1,787.00 15-Feb-2020	2,710.00 15-Aug-2020

communities					

Comments (achievements against targets):
The project target has been exceeded (151.6%).

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of children aged 0-23 mo of age participating in monthly community-based GMP sessions	Number	0.00 01-Jul-2017	266,000.00 15-Feb-2020	266,000.00 15-Feb-2020	189,831.00 15-Aug-2020

Comments (achievements against targets):
The project target has been achieved at 71.1%.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of Service Providers trained in nutrition-promotion activities	Number	0.00 01-Jul-2017	1,075.00 15-Feb-2020	1,075.00 15-Feb-2020	1,198.00 15-Aug-2020

Comments (achievements against targets):
The project target has been exceeded (111.4%).

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion

Number of first 1000 days households participating in Family Groups (FGs)	Number	0.00 02-Jan-2017	37,780.00 15-Feb-2020	30,000.00 15-Feb-2020	30,506.00 15-Aug-2020

Comments (achievements against targets):
The project target has been slightly exceeded (101.6%).

Component: Component 2: Increase production of micronutrient-rich foods

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of first 1000 days households who received agriculture inputs	Number	0.00 01-Jul-2017	37,780.00 15-Feb-2020	30,000.00 15-Feb-2020	32,127.00 15-Aug-2020

Comments (achievements against targets):
The project target has been exceeded (107%).

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of Family Group Leaders (FGLs) with operational kitchen garden demonstration sites	Number	0.00 01-Jul-2017	1,393.00 15-Feb-2020	1,393.00 15-Feb-2020	2,016.00 15-Aug-2020

Comments (achievements against targets):
The project target has been exceeded (144.7%).

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of first 1000 days households reporting production of four or more micronutrient rich foods	Number	0.00 01-Jul-2017	33,058.00 15-Feb-2020	26,250.00 15-Feb-2020	32,127.00 15-Aug-2020

Comments (achievements against targets):
The project target has been exceeded (122.3%).

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of FG members producing at least 50kg of high-iron beans per year	Number	0.00 01-Jul-2017	33,058.00 15-Feb-2020	26,250.00 15-Feb-2020	22,728.00 15-Aug-2020

Comments (achievements against targets):
The project target has been achieved at 86.5%.

Component: Component 3: Project Management and Administration, Monitoring and Evaluation, and Knowledge Dissemination

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Establishment of multi-sectoral steering committee at national level	Yes/No	N 01-Jul-2017	Y 15-Feb-2020	Y 15-Feb-2020	Y 22-Jan-2020

Comments (achievements against targets):
The project was set up a multisectoral steering committee including sectors in charge of food security, agriculture, nutrition, health, local administration and civil society.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of knowledge-sharing events held at national and provincial levels	Number	0.00 01-Jul-2017	5.00 15-Feb-2020	5.00 15-Feb-2020	4.00 15-Aug-2020

Comments (achievements against targets):
4 knowledge events held against 5 planned. A fifth experience sharing is planned after validation of final report to share with all stakeholders the findings and lessons learned.

ORGANIZATION OF THE ASSESSMENT OF THE PDO

Objective/Outcome 1 Increase production of micronutrient rich foods	
Outcome Indicators	1. Percentage of participating first 1000 days households reporting production of at least four micronutrient-rich crops in target areas
Intermediate Results Indicators	1. Number of first 1000 days households who received agriculture inputs 2. Number of Family Group Leaders (FGLs) with operational kitchen garden demonstration sites 3. Number of first 1000 days households reporting production of four or more micronutrient rich foods 4. Number of FG members producing at least 50kg of high-iron beans per year
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	1. An integrated agriculture-nutrition training manual developed 2. At least 1,858 demonstration sites established in beneficiary communities to promote homestead production of micronutrient foods 3. At least 12 community seed banks established for high iron beans 4. At least 630 VSLA groups established.

Objective/Outcome 2 Increase consumption of micronutrient rich foods	
Outcome Indicators	1. Percentage of children aged 6-23 months of age reporting consumption of foods from four or more food groups in previous 24 hours in target areas 2. Percentage of children 0-23 months of age participating in community-based nutrition activities in target areas
Intermediate Results Indicators	1. Number of PDH sessions delivered in participating communities 2. Number of children aged 0-23 months of age participating in monthly community based GMP sessions 3. Number of Service Providers trained in nutrition-promotion activities 4. Number of first 1000 days households participating in Family Groups (FGs)
Key Outputs by Component (linked to the achievement of the Objective/Outcome 2)	1. Nutrition educational materials developed 2. 1075 community-based service providers (i.e. CHWs, agriculture extensionists, PDH volunteers, local CBO workers, health center staff, and district and provincial MoH and MoA staff) trained on nutrition 3. 14,800 children 0-23 months of age participating in GMP sessions monthly 4. Provision of 114 PDH and GMP packages (1 kit/Hill), Job Aid kits for FGLs and CHWs 5. PDH and GMP support strategy developed for delivery using ICT 6. 228 CHWs and PDH volunteers trained to use tablets to support nutrition activities in their communities

	7. Coordinated planning, supportive supervision (three times a year), and annual review meetings by line ministries in 114 Hills in 2 health districts, provincial, and national level.

ANNEX 2. PROJECT COST BY COMPONENT

Components	Amount at Approval (US$M)	Actual at Project Closing (US$M)	Percentage of Approval (US$M)
Mobilize communities to improve nutrition practices	1,394,437	1394438.00	100%
Increase production of micronutrient-rich foods	925,754	925754.00	100%
Project Management and Administration, Monitoring and Evaluation, and Knowledge Dissemination	409,210	409210.00	100%
Total	**2,729,4010.00**	**2,729,401.00**	**100%**

ANNEX 3. RECIPIENT, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

Maternal and Child Nutrition Enhancement Implementation Completion Report

14 October 2020

Abbreviations

AF	: Additional Fund
CBO	: Community-Based Association
CHW	: Community Health Worker
DHS	: Demographic Health Survey
FG	: Family Group
FGD	: Focus Group Discussion
FGL	: Family Group Leader
GMP	: Growth Monitoring and Promotion
GoB	: Government of Burundi
ICR	: Implementation Completion Report
IYCF	: Infant and Young Child Feeding
JSDF	: Japan Social Development Fund
M&E	: Monitoring and Evaluation
MAM	: Moderate Acute Malnourished
MCNE	: Maternal and Child Nutrition Enhancement
MNP	: Micronutrients Powders
MTR	: Mid Term Review
MUAC	: Mid-Upper Arm Circumference
NGO	: Non-Governmental Organization
PDH	: Positive Deviance Hearth
PDO	: Project Development Objectives
PMA	: Project Management and Administration
PRONIANUT	: Programme National Integré pour la Nutrition
ToRs	: Terms of Reference
VSLA	: Village Savings and Loans Association
WHO	: World Health Organization

MCNE ICR Data sheet

1. BASIC INFORMATION	
Product information	
Project ID: P157993	**Project name:** Maternal and Child Nutrition Enhancement (MCNE)
Country: Burundi	**Financing Instrument:** Trust Fund
Original EA category: C - Not Required -	**Revised EA category:** No revision done
Organizations	
Borrower-: WORLD VISION BURUNDI	**Implementing Agency:** WORLD VISION INTERNATIONAL
Project Development Objective (PDO)	
Original PDO: The Project Development Objective (PDO) is to increase production and consumption of micronutrient-rich foods among targeted groups in Gihofi and Makamba, Burundi.	
Revised PDO: PDO No revised during Project Implementation	

2. FINANCING			
	Original amount (US$)	**Revised amount (US$)**	**Actual Disbursed (US$)**
World Bank Financing	2,729,401	2,729,401	2,729,401
Non-World Bank Financing	303,821	303,821	303,821
Total Project Cost	3,033,222	3,033,222	3,033,222

3. KEY DATES					
Approval	**Agreement Letter signature**	**Effectiveness**	**MTR Review**	**Original Closing**	**Actual closing**
16-Mar-2017	**2-May-2017**	**25-Jul-2017**	**May 2019**	**15-Feb-2020**	**15-August-2020**

4. RESTRUCTURING/ADDITIONAL FINANCING		
Date(s)	**Amount Disbursed at Restricting/AF (US$M)**	**Key revisions**
MTR Review Project extension	No restricting or additional financing done.	- Minor revision of targets done. - End date with no cost extension of 6 months requested and approved by the World Bank

5. KEY RATINGS				
Outcome		**Bank Performance**		**M&E Quality**
6. RATINGS OF PROJECT PERFORMANCE IN ISRS				
No.	**Date ISR archived**	**DO Rating**	**IP Rating**	**Actual Disbursements (US$M)**
7. SECTORS AND THEMES				
Sectors **Major Sector/Sector**				**(%)**
Themes **Major Theme / Theme (Level 1)/ Theme (Level 3)**				**(%)**
8. ADMIN STAFF				
Role		**At approval**		**At ICR**
Regional Vice President				
Country Director				
Senior Global Practice Director				
Practice Manager				
Task Team Leader(s)				
ICR Contributing Author				

I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. Context at Appraisal

A.1. Context

- **Country Context**

1. Burundi's socio-economic development improved in the past decade, but the gains are fragile. Thus, poverty and vulnerability remain widespread. Over the past decade, the Government of Burundi (GoB) has made progress in consolidating peace and security, rebuilding institutions and improving sector outcomes, especially in basic health and education.

2. Food insecurity is on the rise due to the current environmental crisis and policy gaps. According to the 2013 IFPRI estimates, Burundi was the most food insecure country in the world, linked to the small

landholdings[13], declining soil fertility and plant diseases. In 2010, Burundi had 58 percent stunting[14] in children under the age of 5 years, which is the highest in the world. Chronic malnutrition among children reflects the overall extreme food insecurity in Burundi. It is also associated with micronutrient deficiencies such as anemia. While the country has developed successful protocols for severe acute malnutrition, it is less advanced in terms of addressing chronic malnutrition through environmentally sustainable and nutrition-sensitive livelihoods, nutrition education, community-based prevention and treatment, and related issues on early childhood development and parenting practices.

3. Displacement, climatic and economic shocks further endanger reliable access to food. Burundi's predominantly rural population relies on subsistence agriculture and staple foods. Yet the conflict in the 1990s and early 2000s had caused large displacements of the populations and loss of valuable assets, such as productive lands. This vulnerability is further exacerbated by successive adverse shocks including droughts, high food prices, reduced household purchasing power and the current political insecurity.

4. Economic growth is largely dependent on agriculture (about 32 percent of GDP and 90 per cent of livelihoods) resulting in a vulnerability to climatic and external shocks. Traditional farming methods remain common contributing to poor production capacity. Moreover, high population growth rate (2.6 percent in 2011) and high population density (300 persons per square kilometer) place severe pressure on land and natural resources, with about 86% of households farming less than 0.5 hectare.

Malnutrition is a multifactorial problem that requires a multi-sectoral, multi-actor and multi-level response, involving key sectors – such as agriculture and livelihood, health and nutrition, and education, and targeted to the first 1,000 days of life when stunting occurs, with irreversible and lifelong impact on physical growth and brain development in young children to poor health and lowered economic productivity later in life. Hence the need for effective coordination so that interventions complement each other and converge towards reversing the trend and breaking the vicious intergenerational cycles where malnutrition perpetuates poverty, as mothers who are malnourished as children are more likely to give birth to undernourished babies.

- **Sectoral and Institutional Context**

Burundi has one of the highest stunting rates of children in the world. Stunting, caused by chronic undernutrition, has remained virtually unchanged over the last two decades (56% in 1987), 63% in 2000, 58% in 2005 and 58% in 2010)[15] and is well below the SDG target of 29%. Stunting begins at conception and is largely irreversible beyond the first two years of life (1000 days).[16] Globally, child and maternal malnutrition underlie 45 percent of all child deaths.[17] Undernutrition increases mortality and morbidity

[13] Close to 30 percent of farm households own less than one hectare of land.
[14] [14] Stunting rates based on percentage of under-5 children with height-for-age less than -2 standard deviations from the WHO reference.
[15] Institut de Statistiques et d'Études Économiques (ISEE) du Burundi, 2012. Burundi: Enquête Démographique et de Sante 2010. Burundi. Available at: *http://www.dhsprogram.com/pubs/pdf/FR253/FR253.pdf* (accessed 1/10/14).
[16] Shrimpton, Roger, et al. 2001. "Worldwide timing of growth faltering: implications for nutritional interventions." *Pediatrics* 107:5.
[17] Black, Robert E., et al. 2013. "Maternal and child undernutrition and overweight in low-income and middle-income countries." The Lancet 382(9890): 427-451.

and increases expenditure on health overall.[18] Undernutrition has further economic costs through cognitive delays in children, compromised learning performance, and lower economic productivity in adults.[19,20] Causes of lower economic productivity include lower physical strength, lower wages, and more days away from work due to illness among adults.[21] As a result, there is a greater than 10% reduction in lifetime earnings for each malnourished individual and approximately 8% loss in GDP.[22] Chronic malnutrition is costing Burundi an estimated US$102 million per year, which is twice the annual budget of the Burundi Ministry of Health (MoH).[23]

As such, in Burundi, malnutrition is not only a significant public health problem but also, a major socio-economic development issue. According to the results of the 2016-2017 Demographic and Health Survey (DHS), the rate of chronic malnutrition in children under 5 years of age (stunting) is high with 56%, with disparities by province. In contrast, the rate of global acute malnutrition is 5%. Micronutrient deficiencies (hidden hunger) are also a highly prevalent with 45% of anemia in children under five years of age according to the 2010 DHS and 61% for the 2017 DHS. The consequences of this situation, particularly on children, are harmful with strong repercussions on Burundi's socio-economic development.

The causes of malnutrition are complex and interrelated, with immediate determinants related to disease and inadequate food intake, in terms of both quality and quantity. These are in-turn influenced by the key underlying determinants, such as food insecurity, inadequate care and feeding practices, poor access to health services, and unhealthy household environments, including poor water, sanitation and hygiene. The main underlying socio-economic indicators that are major drivers of malnutrition in Burundi, include poverty, poor access to education, infrastructure, resources, harmful gender and societal norms and beliefs.

Household food availability is largely reliant on subsistence agriculture. This is impacted by the high population density that progressively reduces access to arable land, by declining soil fertility, crop disease, lack of inputs, farming methods relying on rudimentary instruments and family labor; and by lack of knowledge about year-round production of diverse micronutrient-rich crops. This all leads to inadequate production to meet households' year-round food needs. Undernutrition is further exacerbated by seasonal hunger (typically around October and April) when household food production decreases and households must supplement their diets with purchased foods as food prices increase. These factors contribute to poor dietary diversity, with high dependence on staples and limited intake of micronutrient-rich plant- and animal-source foods. Only 19 per cent of children aged 6-23 months consume a diverse diet (at least four food groups), only 33 per cent are fed at the WHO-recommended frequency, and only

[18] Victora C et al. 2008 Maternal and child undernutrition: consequences for adult health and human capital. Lancet. 271:340-57.
[19] Hoddinott et al. 2008. Effect of a nutrition intervention during early childhood on economic productivity in Guatemalan adults. Lancet. 371:411-16.
[20] Horton, S. et al. 2010. *Scaling Up Nutrition: What will it cost?* The World Bank: USA.
[21] Hoddinott et al. 2008. Effect of a nutrition intervention during early childhood on economic productivity in Guatemalan adults. Lancet. 371:411-16.
[22] Horton, S. et al. 2010. *Scaling Up Nutrition: What will it cost?* The World Bank: USA.
[23] UNICEF, 2013. Annual Report for Burundi 2013. Available at: *http://www.unicef.org/about/annualreport/files/Burundi_COAR_2013.pdf* (accessed 4/10/14).

29 per cent consume iron-rich foods[24]. Poor coverage of health and nutrition services is also a contributing factor to high rates of malnutrition, e.g. only one-third of pregnant women are receiving the recommended four antenatal care sessions.
Makamba and Rutana provinces were identified as the most vulnerable geographical areas with limited NGO presence and highest rates of wasting (6.4% for the Southern Region) and chronic malnutrition (56%) for the Southern Region in the country and the world. Rutana and Makamba provinces are one of the poorest regions in Burundi due to the high rates of returning refugees crossing the borders of these provinces from Tanzania. Yet, Makamba province, in particular, did not have any broad interventions focusing on children under two years of age.

Moreover, from the community consultation meetings, it was apparent that Rutana province seemed to have a much stronger Health sector than Makamba province; while Makamba province seemed to have a stronger Agriculture sector than Rutana province. Therefore, if the experience from the project is to be used in the future scale-up of interventions across the country, it is beneficial to gain experience in two different contexts rather than one.

It is for those reasons above that World Vision International, on behalf of the Government of Burundi, which has given it the no-objection through the Ministry of Finance, Budget, Economic development and Cooperation, has implemented the Maternal and Child Nutrition Enhancement (MCNE) project, financed by the Japanese Government / Japan Social Development Fund (JSDF) through World Bank, in Gihofi and Makamba Health Districts in the provinces of Rutana and Makamba respectively.

MCNE focused on the “first 1000 days” of life, the narrow window of opportunity to address chronic malnutrition, as an approach to prevent the serious and lifelong consequences of malnutrition, in two contiguous health districts. Thus, the project was the first of its kind focusing on nutrition using a multi-sectoral approach, targeting Households with pregnant or lactating women with young children (0-23 months of age), especially the most vulnerable population and generating lessons on synergies and coordination to be integrated into the broader health and agriculture sector projects for sustainability after the project ends.

A.II. Theory of change

The main objective of this project was to increase the production and consumption of micronutrient-rich foods among the target groups in Gihofi and Makamba districts by mobilizing communities to strengthen community-based nutrition services and by increasing production of micronutrient rich foods. The theory of change of the project is detailed in the table below:

[24] *http://mics.unicef.org/tools*

Outputs	Short-term outcomes	Medium-term-outcomes (often level of PDO)	Long-term outcomes
Component 1. Strengthen community-based nutrition services			
IR1. Number of PDH sessions delivered in participating communities		Percentage of children aged 0-23 months of age participating in community-based nutrition activities in target area. At the end of the project, 65.8% of children in the targeted areas of the project participated in community-based nutrition activities	
IR2. Number of children aged 0-23 months of age participating in monthly community-based Growth Monitoring & Promotion (GMP) sessions			
IR3. Number of Service Providers trained in nutrition-promotion activities			
Component 2. Increase production of micronutrient rich foods			
IR4. Number of "first 1000 day" households participating in Family Groups (FGs)			
IR5. Number of "first 1000 day" households who received agriculture inputs			
IR6. Number of Family Group Leaders (FGLs) with operational kitchen garden demonstration sites			

IR7. Number of "first 1000 day" households reporting production of four or more micronutrient rich foods		Percentage of children aged 6-23 months of age that are reported to consume foods from four or more food groups in previous 24 hours in target area	
IR8. Number of FG members producing at least 50kg of high-iron beans per year		Percentage of participating "first 1000 days" households reporting production of at least four micronutrient-rich crops in target areas.	
(Component Three): Project Management and Administration, Monitoring and Evaluation, and Knowledge Dissemination			
IR9. Establishment of multi-sectoral steering committee at national level			
IR10. Number of knowledge-sharing events held at national and provincial levels			
Underlying problems/ constraints and assumptions:	▪ Possible resistance from husbands regarding activities for women. ▪ Reduced participation due to women dropping out or proving away from project areas. ▪ Planned activities add to women's workload. ▪ Poor uptake and inclusion of iron rich beans and micronutrient-rich foods into child's diet due to strong. ▪ Food preferences by caregiver. ▪ Drought, floods, or disease destroy crops. ▪ Weak health and agriculture systems to implement project activities. ▪ Delays in procurement for imported inputs (bio-fortified bean seeds).		

A.III. Project Development Objectives

The Project Development Objective (PDO) was to **increase production and consumption of micronutrient-rich foods among targeted groups in Gihofi and Makamba, Burundi**.
The project focus was on promoting short-term changes in high-impact nutrition behaviors and practices that are known to contribute to medium- and long-term stunting reduction. The PDO highlights the project's pragmatic contribution to addressing a fundamentally important aspect of child malnutrition – poor dietary diversity.

The project focused on 3 outcome indicators:

- Net change in percentage of children aged 0-23 months of age participating in community-based nutrition activities in target area
- Net change in percentage of participating "first 1000 days" households reporting production of at least four micronutrient-rich crops in target areas
- Net change in percentage of children aged 6-23 months of age reporting consumption of foods from four or more food groups in previous 24 hours in target areas

The PDO was to be achieved through: **(i) Mobilizing communities to improve nutrition practices**; **(ii) Increasing production of micronutrient-rich foods**; and **(iii) Project management and administration, monitoring and evaluation, and knowledge dissemination.**

During the project implementation, the PDO statement did not change. Minor changes have been made following the Mid-term evaluation e.g. an additional 15 Hills were added, increasing the initial 114 Hills (55 Hills and 59 Hills, respectively) in Rutana and Makamba to 129 Hills (58 in Rutana and 71 in Makamba province) and 512 sub-Hills. The project was implemented in 6 communes, Giharo, Gitanga and Bukemba in Gihofi Health District and Kayogoro, Makamba and Kibago in Makamba health district in the Southern Region of Burundi.

A.IV. Key expected outcomes and outcome indicators
The table below shows the Indicator achievement progress by the end of the project:

PDO Level Results Indicators*	Unit of measure	Baseline	Target Value	End line survey	Difference
1. Percentage of children aged 0-23 months of age participating in community-based nutrition activities in target area	Percentage points	1.2%	40.0%	65.8%	+25.8%
2. Percentage of participating "first 1,000 days"	Percentage points	18.45%	50.0%	55.7%	+5.7%

households reporting production of at least four micronutrient-rich crops in target areas					
3. Percentage of children aged 6-23 months of age reporting consumption of foods from four or more food groups in previous 24 hours in target area	Percentage points	10.5%	60.0%	41.4%	- 18.6%
INTERMEDIATE RESULTS					
Intermediate Result Component One: Mobilizing communities to improve nutrition practices					
IR1. Number of PDH sessions delivered in participating communities	Sessions	0	1,787	2,710	152%
IR2. Number of children aged 0-59 months of age participating in monthly community based GMP sessions	children 0-23 months	0	266,000	245,412[25]	92.3%
IR3. Number of Service Providers trained in nutrition-promotion	Service providers	0	1,075	1,198	112%

[25] 206,493 children (108,532 girls and 97,961 boys) were screened using M-health application from March 2019 to 15th August 2020. But before using the new digital strategy, 38,919 children (20,456 girls and 18,463 boys) have been screened in December 2018 and January 2019 using GMP cards.

activities					
IR4. Number of "first 1000 day" households participating in Family Groups (FGs)	Households	0	30,000	30,506	102%
Intermediate Result Component Two: Increase production of micronutrient rich foods					
IR5. Number of "first 1000 day" households who received agriculture inputs	HH	338	30,000	32,127	107.1%
IR6. Number of Family Group Leaders (FGLs) with operational kitchen garden demonstration sites	FGLs	345	1,393	2,016	144.7%
IR7. Number of "first 1000 day" households reporting production of four or more micronutrient rich foods	HH	0	26,250	32,127	122.4%
IR8. Number of FG members producing at least 50kg of high-iron beans per year	FGLs	0	26,250	22,728	86.6%
Intermediate Result Component Three: Increase production of micronutrient rich foods					
IR9. Establishment of multi-sectoral steering committee at national level	One time (Yes/No)	No	No	Yes	100%
IR10. Number of knowledge-	Events	0	5	4	80%

sharing events held at national and provincial levels					

A.V. Components and Key indicators (outcomes and outputs)

The expected project duration is 36 months with a proposed investment of US$2,975,047 (US$2,729,401 Recipient Grant and US$245,646 Bank Supervision Grant).
The following table outlines the spending per category as per end of September 2020:

Recipient-Executed Grant Summary Cost Table by Expenditure Category (rounded), USD			
Budget category	**Planned budget/ Agreement**	**Year to date Expenditure**	**Variance**
Consultants	183,550	194,888.51	-11,338.51
Training/ Workshops	1,512,411	1,401,248.00	111,163.00
Goods and Works	717,518	765,564.00	-48,046.00
Operating Costs	315,922	361,010.30	-45,088.30
Total Grant Amount:	2,729,401	2,722,711	6,690.19

II. OUTCOMES AND OUTPUTS

Component 1: Mobilize communities to improve nutrition practices

A situation analysis (Baseline) had been conducted in the project area, before the implementation stage to identify opportunities and barriers of project objectives, particularly related to community mobilization, gender, context-specific agriculture best practices, and issues specific to nutrition and health in women and children 0-23 months. In collaboration with line ministries including the Ministry of Health (MoH), Ministry of Environment, Agriculture and Livelihoods (MoEAL), Ministry of Home Affairs and Technical Support Office(TSO), the project developed the training materials and operational manuals (integrated manual of Food security and nutrition), drawing upon these findings as well as international Infant Young Child Feeding (IYCF) and GMP curriculums and existing PDH national guidelines. After this, the cascade trainings were conducted.

In line with the *Plan Strategique Multisectorielle de Sécurité Alimentaire et de Nutritionnelle* (PSMSAN), the project supported community-based nutrition activities, including the promotion of optimal care and feeding practices for mothers and children. Key messages were tailored to the local context based on local knowledge and IYCF integrated with nutrition-sensitive agriculture approaches.

In line with the MOH-PRONIANUT strategy, community-based nutrition activities targeted primarily the first 1000 days through community mobilization through Family Groups (FGs); Growth Monitoring and Promotion (GMP) for children 0-23 months; and Positive Deviance Hearth (PDH) for malnourished children (prevention and rehabilitation). The entry point of interventions has been 2,016 Family groups structured

by 30,506 households, each identified as a “first 1000 days” household.

Implementation of the community-based nutrition activities was supported by a network of 2016 Family Group Leaders (FGLs), 129 local Community Based Organizations (CBOs), 512 community health workers (CHWs), and 512 PDH volunteers / Mother leaders (ML).

The project developed the capacity of the project partners through the training of a team of master trainers from government ministries and partner staff in IYCF, GMP, bio fortification and PDH. Cascade trainings were conducted for Health Staff, Community Health Workers, PDH volunteers / Mother leaders, Family Group leaders and Family Groups members. 105 Health staff and 1024 CHWs and MLs were trained on the approaches such us GMP, PDH. IYCF. and use of Micronutrient powders. A total of 267 CHW were trained on M-Health application (Implementation and monitoring of GMP and PDH interventions) using smartphones.
To support the community-based activities, this component also included the development and distribution of training materials for community-based nutrition activities as well as joint monitoring, supervision, and review meetings between the relevant line ministries that will facilitate the implementation of the project (Hill, commune, district, provincial, and national levels as required).

Key realisations under this component are:

- 30,506 households were identified and structured in 2,016 Family Groups (FGs);
- 129 Community Based organizations were identified with a focus on active local organization working within communities;
- 298 smartphones were purchased for GMP and PDH monitoring through M-Health application
- 105 Health staff and 277 CHWs and PDH volunteers were trained on GMP and PDH monitoring using tablets (M-health application);
- 1024 CHWs and PDH volunteers were trained on IYCF, GMP and PDH approaches
- 387[26] bicycles and 403 weighing scales were purchased and distributed to CHWs and CBOs located at all 129 target Hills;
- 108 administrative authorities at different levels were oriented on Micronutrient Powders (MNPs) approach;
- During the project period, 245,412 children (128,988 girls and 116,424 boys) were screened. Among them, 206,493 children (108,532 girls and 97,961 boys) were screened using M-Health application from March 2019 to 15th August 2020. Prior to using the new digital app, 38,919 children (20,456 girls and 18,463 boys) were screened in December 2018 and January 2019 using GMP cards; and
- 30,862 children received MNPs.

[26] This include 342 bicycles distributed before the midterm review with 45 bicycles for additional hills

The below table shows the Indicator achievement progress at outcome and output level under component 1 by the end of the project:

Key indicator	Target	Achievement	Rate of Progress
Outcome 1.a. Percentage of children aged 0-23 months of age participating in community-based nutrition activities in target area	40%	65.80%	165%
Output 1.1.1. # of FG curriculum material developed	51,000	50,000	98%
Output 1.1.2. # of contextualized IYCF and GMP training manual developed	2,854	2,500	88%
Output 1.1.3. # of Health Management Team trained on PDH approach	30	35	117%
Output 1.1.4. # of health staff trained on the PDH approach, GMP, IYCF counseling, and micronutrient deficiency prevention and control	60	58	97%
Output 1.1.5. # of CHWs and PD-Hearth volunteers trained	586	1,024	175%
Output 1.1.6. # of health staff trained on GMP and PD Hearth monitoring using tablets	40	105	263%
Output 1.1.7. # of CHWs trained on GMP and PD Hearth monitoring using Tablets	228	277	121%
Output 1.1.9. # of phones and solar chargers provided	298	298	100%
Output 1.1.10. # of CBOs sub-contracted	129	129	100%
Output 1.1.14. # of FG established jointly with community partners	1,958	2,016	103%
Output 1.1.15. # of health workers trained on FG curriculum, IYCF & MNCH counseling & behavioral change communication technique	60	60	100%
Output 1.1.16. # of Family Group Leaders trained on GMP,IYCF and PD Hearth	1,858	2,016	109%
Output 1.1.17. # of Extension Workers and Lead Famers oriented	234	245	105%
Output 1.2.a. Number of PDH sessions delivered in participating communities	1,787	2,710	152%
Output 1.2.b. Number of children aged 0-59 months of age participating in monthly community based GMP sessions	266,000	245,412	92.26%

Output 1.2.c. Number of "first 1000 day" households participating in Family Groups (FGs)	30,000	30,506	102%
Output 1.2.1.e. # of Bicycles delivered	358	387	108%
Output 1.2.2. # of weighing scales procured	342	403	118%
Output 1.2.3.b. # of graduation ceremony conducted	114	114	100%
Output 1.3.a. # of Coordination /Review meetings held	12	11	92%

Innovative child growth monitoring system: Commcare & M-Health

The MCNE project introduced the new Digital strategy for GMP and PDH monitoring using tablets to ensure timely availability of quality data for decision making and response. The growth monitoring system for children under 5 years, anthropometric measurements, references to PDH and Health centers, as well as the monitoring of malnourished of children through home visits was done using the M-Health application, also called Commcare.

Figure 1. CHW explaining how GMP and PDH are monitored using smartphone with M-Health app to Japan Ambassador in Burundi

This new digital strategy is specifically used in GMP and PDH monitoring using smartphones/ tablets. CHWs, equipped with smartphones, are collecting entering data which is synchronized on a monthly basis. The added value of the new strategy is that both MUAC and underweight were used as criteria for children referral to PDH sessions or at health facility level.

During the project period, 245,412 children (128,988 girls and 116,424 boys) were screened. Among them, 206,493 children (108,532 girls and 97,961 boys) were screened using M-Health application from March 2019 to 15th August 2020. Prior to using the new digital app, 38,919 children (20,238 girls and 18,681 boys) were screened in December 2018 (at Makamba) and January 2019 (at Rutana) using GMP cards.

Among 245,412 children screened, **42,861 children** were eligible to commence PDH sessions considering MUAC and underweight status as criteria. However, by using MUAC only as referral criteria, **8,085 children** (moderate acute malnutrition or MAM) would be eligible to PDH sessions, while **34,776 additional**

children were eligible to PDH sessions because they measured underweight and they could be prevented through PDH sessions. The new Digital strategy had been highly appreciated by both health staff, community leaders and beneficiaries because there is a big percentage of children prevented.

After the May 2019 mid- term review, a decentralization of GMP and PDH sessions to sub-Hill level was proposed and was effective in September 2019 with the purchase of the additional monitoring kits.

Until end of the project, 2,710 PDH sessions were conducted. 15,066 children completed PDH sessions with 10,850 followed at home by CHWs.

The table below shows the number of children screened from the introduction of the M-Health application and related to the number of cases referred to PDH indicating a decrease of referred cases while the number of children screened decreased. It is to note, that during the month of February 2020 most of the smartphones used during the GMP sessions were collected by WV temporarily to support technical programs evaluation. During that period, GMP and PDH data were noted on cards waiting for the smartphones to return.

Month	Female	Male	Total
Mar-19	3,968	3,565	7,533
Apr-19	3,877	3,423	7,300
May-19	2,348	2,087	4,435
Jun-19	1,258	1,134	2,392
Jul-19	2,258	2,016	4,274
Aug-19	4,985	4,523	9,508
Sep-19	3,647	3,242	6,889
Oct-19	5,015	4,579	9,594
Nov-19	8,167	7,364	15,531
Dec-19	10,383	9,289	19,672
Jan-20	11,365	10,183	21,548
Feb-20	4,622	4,206	8,828
Mar-20	7,538	6,903	14,441
Apr-20	9,956	9,132	19,088
May-20	10,388	9,541	19,929
Jun-20	9,670	8,551	18,221
July-August 15 2020	9,001	8,309	17,310
Before Commcare	20,238	18,681	38,919
General total	**128,684**	**98,047**	**245,412**

According to project monitoring data, the GMP and PDH monitoring created significant changes in terms of reduction of children moderate malnutrition and underweight of children during the project

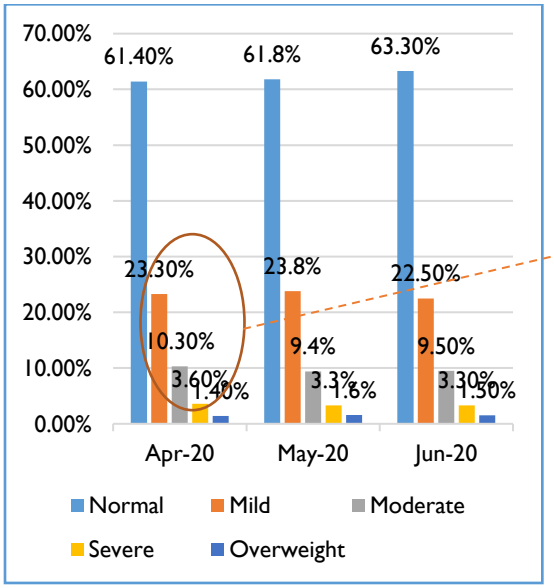
implementation.

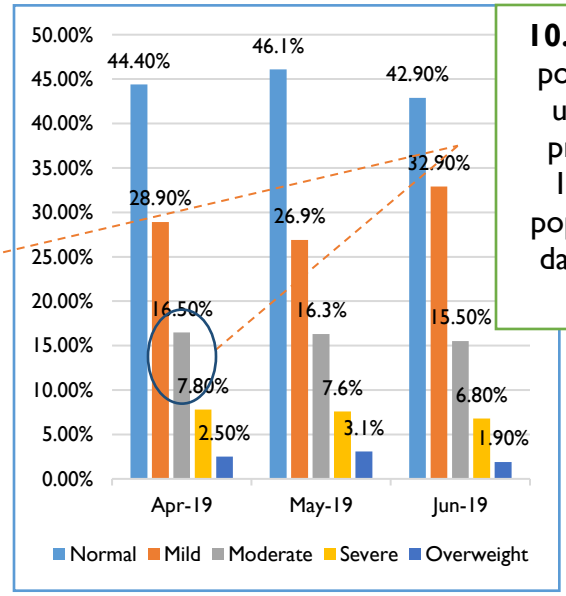
Year-on-year changes in the prevalence of under- or over-weight children, as detailed in the table below, improved significantly between 2019 and 2020.

	Apr-19	Apr-20	Improvement	May-19	May-20	Improvement	Jun-19	Jun-20	Improvement	General improvement
Healthy	44.40%	61.39%	**38.3%**	46.10%	61.82%	**34.1%**	42.90%	63.31%	**47.6%**	**42.6%**
Mild	28.90%	23.30%	**-19.4%**	26.90%	23.83%	**-11.4%**	32.90%	22.45%	**-31.8%**	**-22.3%**
Moderate	16.50%	10.25%	**-37.9%**	16.30%	9.37%	**-42.5%**	15.50%	9.45%	**-39.0%**	**-42.7%**
Severe	7.80%	3.61%	**-53.7%**	7.60%	3.33%	**-56.2%**	6.80%	3.33%	**-51.0%**	**-57.3%**
Overweight	2.50%	1.45%	**-42.0%**	3.10%	1.65%	**-46.8%**	1.90%	1.46%	**-23.2%**	**-41.6%**

Source: Data analysis from uploaded data through M-health application

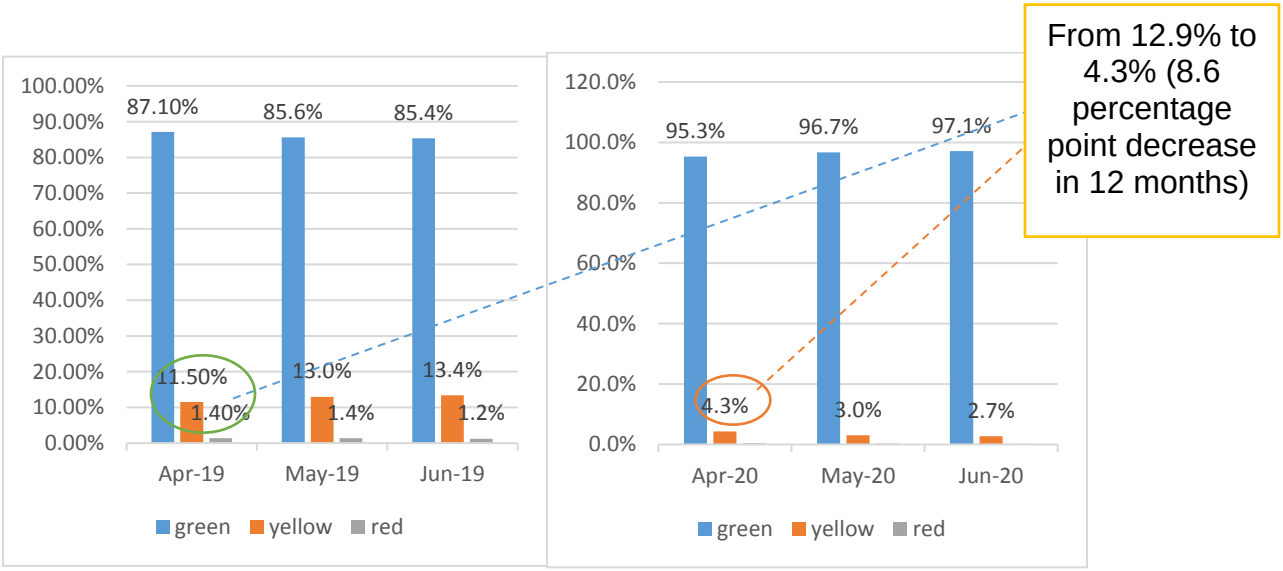
The graph below shows that during the project implementation, moderate and severe underweight has decreased from 24.3% in April 2019 to 13.9% in June 2020 (**10.4** percentage points decrease of underweight prevalence in 12 months).





10.4 percentage point decrease underweight prevalence in 14months in population level data (24.3% to 13.9%)

The rate of moderate malnutrition (MUAC status)[27] has significantly decreased from 12.9% to 4.3% from the starting period of using M-health application in April 2019 to June 2020. Overall, the percentage moderate acute malnutrition decreased by 8.6% during the project period as detailed in the graph below:



During the Covid-19 pandemic, the project was able to adapt the strategy of GMP and PDH implementation/management according to the MoH and WHO guidance. Therefore, the number of children attending in the PDH sessions was reduced from 12 to 6 in order to respect social distancing. Hygiene measures have been reinforced (hand washing kits, soap distribution per caregiver, etc.).

Component 2: Increase production of micronutrient-rich foods.

Under this component, the project aimed to increase year-round production and consumption of micronutrient-rich foods, especially bio-fortified crops (high iron beans) by linking agriculture extensionists and farmers associations with the Family Groups.

An integrate agriculture-nutrition module and Family Group curriculum was developed in collaboration with line ministries (MOH and Ministry of Agriculture) and cascade trainings and refresher trainings were conducted on those two documents. Support documents had been multiplied and distributed to the beneficiaries. The project conducted trainings and refresher trainings for agriculture service providers to build their skills in nutrition-sensitive agriculture, including for community seed producers. Agriculture extensionists received job kits (bags, umbrellas, rain boots) to facilitate extensionists job related to FG activities monitoring and reporting at Hill level.

[27] Green= Normal; Yellow: MAM, Red: SAM

A total of 2,016 structured FGs received different trainings on bio fortification techniques and received agriculture inputs (high iron beans seed, orange flesh sweet potato vines) and FG input packages. 2,016 demonstration sites were established in beneficiary communities (1 per FG) to promote homestead production of micronutrient foods. They have been trained also on how to establish kitchen gardens and they received 5 kinds of vegetable seed (amaranths, eggplants, carrots, beetroots, spinach). FG members were included in Village Savings and Loans Associations (VSLAs) to reduce financial barriers to the production of nutritious crops. The promotion of VSLAs through Family Groups is an important factor for the sustainability of the project's achievements. In fact, in addition to being a source of income to meet the primary needs of households and individuals, it also allows for social cohesion and mutual aid conducive to the sustainability of the project achievements. It is important here to reflect on a supervision and capacity building for VSLA committees to avoid falling in terms of mismanagement of VSLAs groups and to provide mechanisms for resolving conflicts that may arise. Hereby, the project supported 1,015 VSLAs and 5,095 VSLA committee members were trained on management of VSLAs.

Furthermore, three orientations of MoA, MoH, and other government bodies, the private sector, and key nutrition partners on bio-fortification and seed systems were organised at provincial and national levels. As result, an integrated agriculture-nutrition module was developed in close collaboration with Ministry of Agriculture and the Ministry of Health, which was printed and disseminated at community level for use.

Key results under this component are:

- 2,016 FGs were set up, trained on different key approaches and equipped
- 1,015 VSLAs set up (2 FG structured in 1 VSLA), equipped with tools and 5,095 VSLA committee members trained on management of VSLA
- 245 agriculture extensionists trained
- An integrated agriculture-nutrition training manual developed in collaboration of key stakeholders from the Ministries of Health and Agriculture
- 14,642 kitchens gardens were established
- vegetable seeds, H iron beans and OFSP vines were distributed to FGs, multiplied at FG level and distributed to FG members
- 30,506 households were supported with bio-fortified high iron beans and vegetable seeds

The below table shows the Indicator achievement progress at outcome and output level under component 2 by the end of the project:

Key indicator	Target	Achievement	Rate of progress
Outcome 2.a Percentage of participating "first 1,000 days" households reporting production of at least four micronutrient-rich crops in target areas	50.0%	55.7%	111.4%
Outcome 2.b Percentage of children aged 6-23 months of age reporting consumption of foods from four or more food groups in previous 24 hours in target area	60.0%	41.4%	69%
Output 2.1.c. Number of FGLs (FG members) producing at least 50kg of high-iron beans per year[28]	26,250	22,728	87%
Output 2.1.3. # of integrated manuals printed on Integrated Ag/Nutrition Training Package (includes bio fortification, compost production - identifying appropriate goat breed, locally available nutrient-dense foods)	51,000	50,000	98%
Output 2.1.4. # of refresher trainings organized on bio fortification beans and locally available micronutrient-rich food production and consumption promotion, post-harvest and storage and preservation techniques (Integrated ag/nut training)	387	380	98%
Output 2.1.5. # of extensionists trained on bio fortified high iron bean production, consumption promotion, and postharvest and storage, preservation techniques, and preparation of compost using organic matters	2,274	2,206	97%
Output 2.1.6. # of FGs oriented on bio fortified high iron bean production and consumption	1,858	1,951	105%
Output 2.1.7. FG members supported with supported with high iron beans and associated inputs (fertilizer, vegetable seeds, job aid kits)."	30,000	30,506	102%
Output 2.1.8. # FGs trained on how to multiply high iron beans, post-harvest and storage, preservation techniques and preparation of fertilizers using organic matter	1,858	2,016	109%

[28] Per year, harvest from 2 cultural season are cumulated.

Output 2.1.9. # of leader farmers trained how to multiply high iron beans, post-harvest and storage and preservation techniques, and preparation of fertilizers using organic matter	120	120	100%
Output 2.1.10. # of agriculture extensionists supported to conduct on-going supervision and support for FG demonstration gardens	129	129	100%
Output 2.2.a. # of Family Group Leaders (FGLs) with operational kitchen garden demonstration sites	1,393	1,858	133%
Output 2.2.1. # of agriculture extensionists trained on the establishment of demonstration vegetable gardens	129	132	102%
Output 2.2.2. # FG Leaders trained on demonstration vegetable gardens	1858	1858	100%
Output 2.2.3. # of VSLA provincial officers trained	2	2	100%
Output 2.2.4. # of motorbikes purchased	2	2	100%
Output 2.2.7. # VSLAs established	630	937	149%
Output 2.2.8. # of kits provided to agricultural extensionists	342	342	100%
Output 2.3.a. # MoH and MoEAL trained/oriented on bio fortification	40	44	110%
Output 2.3.1. # MoH and MoEAL trained on bio fortification	40	44	110%

Component 3: Project Management and Administration, Monitoring and Evaluation, and Knowledge Dissemination.

This component supported costs related to management of the project, monitoring and evaluation and knowledge dissemination and coordination, as follows:

a) **Project management and administration (PMA)**:
Besides the salary costs of three staff from the implementing agency to provide direct support to the project. Furthermore, consultancy services were covered including those for provincial coordination and external audits. Under this sub-component, the project financed also operating costs for supervision, transportation, office equipment and supplies and required information and communications equipment, including computers.

b) **Monitoring and evaluation:** Under this sub-component, WVB covered costs related to monitoring and evaluation activities which included (i) a participatory monitoring strategy to engage beneficiaries in routine monitoring of program inputs and use, and continuous quality

improvement of project implementation and (ii) an evaluation framework using baseline and end line surveys. The project covered also salaries for Monitoring and Evaluation Officer, an international expert consultant to design the baseline and end line evaluations for learning and for capacity building purposes.

c) **Knowledge Dissemination and Coordination (1% of total grant costs):** This sub-component financed annual project workshops at provincial and national level also at an international forum (please state the forum) for sharing Burundi experience in digitalisation in order to share the lessons learned.

Monitoring and Evaluation

The MCNE project created a comprehensive Monitoring and Evaluation (M&E) system to generate data and evidence to track the implementation and progress towards results in addition to identifying, attributing, and explaining changes that occur during the implementation due to the context and other influencing factors. Through this project, World Vision International Burundi managed monitoring activities through both project-specific systems and normal government systems, consolidated in quarterly reports at provincial level and overall, at project level.

The project monitoring system is monitoring and tracking progress and effectiveness in implementing the project (inputs, activities, processes, outputs, intermediate results (IR), and PDO indicators). Detailed Implementation Plan (DIP) and Indicator Tracking Table (ITT) tools were developed outlining the source of data, frequency of reporting, responsibility for collecting data, and the flow of information for indicators including the PDO and IR indicators.

In the nutrition sector, the project developed a monitoring system of GMP and PDH sessions using smartphones (M-Health application/ Commcare). CHWs are monitoring all community activities related to GMP and PDH sessions using smartphones and all information recorded are synchronized on the M-Health server.

A Baseline survey was conducted to generate data for each of the outcome indicators and a continuous monitoring has been done key process measures. Annual reviews were conducted at provincial level. A final evaluation was completed using data from the baseline and end line surveys to document changes of key indicators in the target groups before and after the project. A final project review to disseminate lessons learned is being organized.

Key results under this component are:

- Development of monitoring routine data from FGs, CHWs and agriculture extensionists to track progress of process indicators and provide the basis for strengthening any activity as needed to ensure the overall project objectives are met;
- Conduct of financial management and audit reports;
- Organization of annual workshops with district and provincial stakeholders;
- Production of key studies reports (Baseline, MTR, end line); and

- ❖ Conduct key dissemination and lessons learnt events.

The below table shows the Indicator achievement progress at outcome and output level under component 3 by the end of the project:

Key indicator	Baseline	Target value	Value achieved	% of the Target
Establishment of a multisectoral steering committee at the national level	0	1	1	100.0%
Number of experience-sharing events at the national and provincial level	0	4+1	4	80.0%

B. Significant Changes during Implementation

During the Mid Term Review in May 2019, minor changes were made at intermediate results level as detailed in the table below:

Component/ Intermediate result	Key Changes made	Justifications/ Comments
Component 1. IR1. Number of PDH sessions delivered in participating communities	The target of this indicator was changed. **Before:** 1,710 **Now:** 1,787	This target was changed as, during the Mid-term Review meeting, it has been agreed to: ✓ Decentralize the PDH sessions to the sub-hill level, rather than at the hill level ✓ Identify and train additional PDH volunteers for the decentralization: from 2 ML per hill to 1 ML per sub-hill. ✓ Provide phones, sheets and other PDH inputs to resource each hill office. ✓ Conduct parallel PDH sessions at the same time per hill in order to cover all children screened as underweight who need to be referred to PDH ✓ Scale-up project in additional 15 hills (43 sub-hills) The project was therefore reaching 512 sub-hills (469 in the existing areas and 43 sub-hills in the additional 15 hills). PDH implementation was conducted at the sub-hill level. For the remaining

		8 months (includes 2 months for trainings and scale-up), at sub-hill, 3 PDH sessions were supposed to be delivered bi-monthly (one per 2 months). **512* 3= 1,536 (+251)[29]= 1,787[30]**
Component 2. IR4. Number of "first 1000 day" households participating in Family Groups (FGs)	**Target changed:** **Before:** 37,780 **Now**: 30,000	The target of 37,780 households was calculated based on the population in the two targeted health districts. During discussions during the design phase of the project, local administration at the provincial level said there were 114 hills in the two target health districts in 2014. However, after starting implementation in 2017, it was realized that there were actually 139 hills in total. Thus, considering the population in just the 114 hills, it is now no longer possible to reach the target of 37,780 "1000 days" household even with 100% coverage. Thus, with the limited time and budget, the project was scaled-up to 15 additional hills and target 30,000 "1000 days" households rather than the initial target of 37,780 without compromising the quality of implementation.
Component 2. IR5. Number of "first 1000 day" households who received agriculture inputs	**Target changed:** **Before**: 37,780 **Now:** 30,000	The target has changed because the target for the total number of "first 1000 day" households participating in Family Groups (FGs) also changed to 30,000 and all FG members will receive agriculture inputs. In order to reach this target, the project targeted additional 15 hills in the target areas (Gihofi and Makamba districts).
Component 2. IR7. Number of "first 1000 day" households reporting production of four or more micronutrient rich foods	**Target changed:** **Before:** 33,058 **Now:** 26,250	The target has changed because the target for the total number of "first 1000 day" households participating in Family Groups (FGs) changed to 30,000. Thus, with the changes made on the new target of FG members (30,000), the new target of this indicator is now set to 26,250 FG members (keeping the coverage of 87.5% the same as what it was previously, which was used to calculate the 33,059 for the target of 37,780 households).

[29] PDH already completed
[30] Final target

		In order to reach this target, the project targeted additional 15 hills in the target areas (Gihofi and Makamba districts).
Component 2. IR8. Number of FG Leaders producing at least 50kg of high-iron beans per year	**Formulation changed from "FG Leaders" to "FG members" & target also changed** **Before:** Number of **FG Leaders** producing at least 50kg of high-iron beans per year. **Target: 33,058** **Now:** Number of **FG members** producing at least 50kg of high-iron beans per year. **Target: 26,250**	For this indicator, the change made is related to the indicator formulation and the target determination. It should say "FG members" instead of "FG leaders". This was incorrectly written in the project design as it is impossible to reach 33,059 FGLs with the budget indicated. The target was also changed since the new total number of FG members targeted was reduced to 30,000. Thus, with the changes made on the new target of FG members (30,000), the new target of this indicator is now set to 26,250 FG members (keeping the coverage of 87.5% the same as what it was previously, which was used to calculate the 33,059 for the target of 37,780 households).

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOMES

Factors that affected the implementation but had no significant impact on the outcomes:

1. Key Factors during Preparation
    a. Time spent familiarizing with WB procedures and regulations.
    b. Delay in receiving the effectiveness letter and first transfer order.
    c. Challenges to be able to use STEP effectively after its introduction.
    d. Time consuming procurement processes for some key items to be used by project.

2. Key Factors during Implementation
    a. Government measures related to the import of items not manufactured or made in Burundi, e.g fertilizer and quality seed.
    b. Delays from the World Bank in providing Non objections on ToRs. This issue had been addressed after meetings were organized between WVIB and the World Bank.
    c. Introduction of the STEP procurement system.
    d. Some modules that were to be developed under this project, required a long negotiation with line ministries. This was the cause of delayed implementation of some approaches.

e. Unavailability of quality seeds affected the speed of the project's implementation (e.g. lack of vines of OFSP, beans, restricted availability of fertilizers)
f. Delays in the process to secure the statistical for the end line survey which led WVIB to request for an extension of the project. Even though there have been no restrictions put in place by the Burundian government, the context of COVID-19 required an adjustment of business at different levels and caused some delays during the close out process of the project. Nevertheless, WVIB was able to complete all pending activities including the end line survey data collection.

IV. LESSONS AND RECOMMENDATIONS

The MCNE project is a well-formulated project involving all the key partners in food security, health and nutrition as well as the territorial administration, from the provincial administration to the hill administration, administrative officials were involved in this project. The buy in of all those stakeholders, among others through joint field visits and coordination meetings, strengthened the ownership of the projected and contributed to a continuous circle of learning and strengthening of interventions to increase the impact and sustainability of the project.

The expected results were achieved, except for the introduction of sweet potato on a large scale and dietary diversity in children from 6-23 months, as this has only been added to the project after the mid-term review. However, the orange-fleshed sweet potatoes have been introduced and due to the family group approach continues to be disseminated among the project beneficiaries. As a result, dietary diversity for children 6-23 months has increased very significantly even though the end target has not been reached. The other indicators of success were largely achieved and exceeded. Therefore, a follow up project should have a particular focus on further improvement of dietary diversity.

During the implementation, there was one Health District level who decided to replace a big number of CHWs, and this affected somehow the project as the CHWs who were replaced had already benefitted a package of trainings including the training on the M-Health application. The project was able to conduct a training on m-Health for new CHWs put in place. However, it is important to continuously sensitize the administration to avoid replacements of trained CHW where possible. Furthermore, it is beneficial to the projects to ensure that several CHWs and community volunteers are trained on different approaches to ensure a continuity of interventions in case some people are no longer in their positions.
With the Family Group Approach, the project was able to convey all these messages and other interventions easily resulting in a de facto change in the beneficiary population such as the IYCF trainings where beneficiaries showed a change in behavior in example in exclusive breastfeeding compared to others.
The introduction of M-Health, as an innovation to track the malnutrition status of children under five in Burundi, using smartphones combined with growth monitoring promotion; and the timely treatment of children with malnutrition has significant impact to reduce cases of moderate and severe malnutrition at community level. The approach should be scaled up as a strategic solution for community data availability

to be used for strategic decision making at different levels.

The fundamental asset for the success of the project is that key partners have been involved from the beginning of the project and that they are satisfied with the knowledge acquired through the project and the achievements of WVIB. Due to the ongoing joint field monitoring visits, mentoring meetings organized on a quarterly basis and regular field visits by the project team and other stakeholders community feedback has been collected on a regular basis and addressed accordingly.

V. PROPOSED ARRANGEMENTS FOR FUTURE OPERATION OF THE PROJECT

Based on end line results, beneficiary's feedback as well as the steering technical committee and consultant who supported end-line evaluation, MCNE project has been well designed, executed and has achieved its objectives successfully. However, a new phase remains relevant to sustain innovative approaches introduced in the project (M-Health, nutrition-sensitive agriculture, bio-fortification techniques) as well as the behavior changes which require a long period. This was the reason a 2nd phase of the project had been requested, and is required in order to sustain what had been implemented under this project.

The below mentioned points require consolidation and outline on what can be focused on during the following phase:

- **Digitalization system :** The project rapidly adopted the M-Health application partway through implementation and has demonstrated the value of the app as a strategic solution to improve efficiency, to reduce error, and to improve coordination and service delivery. WVIB is now considered as the pilot NGO in this area and is well-placed to scale-up the digitalization in a second phase of the project.

- **Bio- fortification ;**
  World Vision is also considered as pilot innovative in this bio fortification technics in Burundi. The food rich in micronutrient has demonstrated an added value in the fight against malnutrition using local, available and affordable food while other items used are imported and would have a cost implication. This need to be strengthened.

- Stronger focus on **seed multiplication** to ensure the availability of improved high-quality seeds at local level. Among the big issues in food security in Burundi is the lack of quality seed, and the project supported 2 seed producers per communes which need to be strengthened in 2nd phase. As a result, there should no longer be a challenge of importing agriculture inputs including iron bio-fortified beans.

- Besides this, during WB country representative's visit, women associated in the FG highlighted the need of a second phase of the project, which should be more focused on production and **food**

transformation.

- Beneficiaries and local administration expressed the need of **storage** facilities to support them to well manage the crops and fight against bad usage of the harvest.