

Guyana

Hinterland Environmentally Sustainable Agricultural Development Project

Project Completion Report

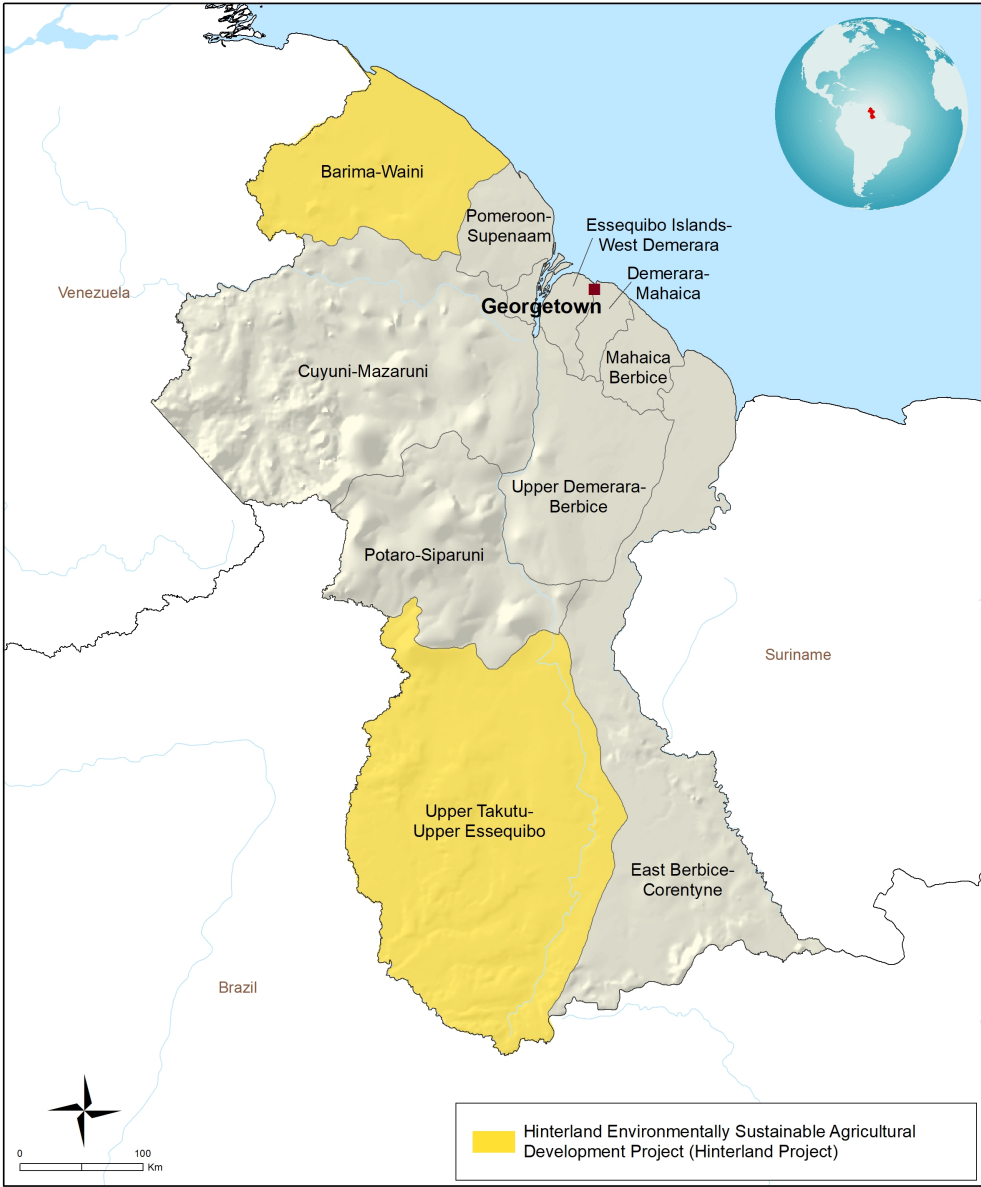
Main report and appendices

Mission Dates: 21/10/2025 - 29/10/2025
Document Date: 24/06/2026
Project No. 2000001472
Report No. 7531-GY
Loan ID 2000001704

Latin America and the Caribbean
Programme Management Department

This document will be publicly disclosed unless there is written dissent on its disclosure by the Borrower at the time of this document submission to IFAD or no later than the project closing date.

Map of the Project Area



 The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.
Source: UN boundaries (2018); GAUL sub-national units (2024)
Map compiled by IFAD | 28-05-2026

Weights and measures

1 Kilogram	=	1000 g
1 000 kg	=	2.204 lb.
1 kilometre (km)	=	0.62 mile
1 metre	=	1.09 yards
1 square metre	=	10.76 square feet
1 acre	=	0.405 hectare
1 hectare	=	2.47 acres

Abbreviations and Acronyms

ASDU	Agricultural Sector Development Unit
AWPB	Annual Workplan & Budget
BIT	Board of Industrial Training
BP	Business Plan
CSO	Civil Society Organisation
CPDP	Community Production Development Plan
COI	Core Outcome Indicator
DC	District Council
FAO	Food & Agriculture Organisation
FPIC	Free, Prior, and Informed Consent
FPD	Food Policy Division
GESI	Gender Equality & Social Inclusion
GEWE	Gender Equality and Women's Empowerment
GIF	Grant Investment Fund
GoG	Government of Guyana
GLDA	Guyana Livestock Development Authority
GMC	Guyana Marketing Corporation
GWLI	Guyana Women's Leadership Institute
HESAD	Hinterland Environmentally Sustainable Agricultural Development project
ICT	Information Communication Technology
KM	Knowledge Management
LAC	Latin America and the Caribbean
MoU	Memorandum of Understanding
MTR	Mid-Term Review
MDDW	Minimum Dietary Diversity for Women
MoA	Ministry of Agriculture
MoA	Memorandum of Agreement
MoF	Ministry of Finance
MoH	Ministry of Health
NAREI	National Agricultural Research & Extension Institute
NDIA	National Drainage and Irrigation Authority
NTC	National Toshiacs Council
PO	Procurement Officer
PP	Procurement Plan
PIM	Project Implementation Manual
PMU	Project Management Unit
PCIP	Public or Collective Investment Plan
RDC	Regional Democratic Council
SIGE	Social Inclusion and Gender Equality
SECAP	Social, Environmental and Climate Assessment Procedures
SBD	Standard Bidding Document
TP	Training Plan
VC	Value Chain
VCAP	Value Chain Action Plan

Project at a glance

Region Latin America and the Caribbean	Project at Risk Status Not at risk
Country Guyana	Environmental and Social Category Moderate
Project Name Hinterland Environmentally Sustainable Agricultural Development Project	Climate Risk Classification Moderate
Project ID 2000001472	
Project Sector Rural Development	
CD Samir Bejaoui	
Project Area	

Key Dates

IFAD Approval	Signing	Entry into Force	Mid-Term Review	Original Completion	Actual Completion
26/11/2016	21/03/2017	21/03/2017	18/10/2021	31/03/2023	30/09/2024
Original Financial Closure	Actual Financial Closure				
31/08/2025	31/08/2025				
Date of Last SIS Mission	Number of SIS Missions	Number of extensions	Effectiveness lag		
10/05/2024	12	2	4 months		

IFAD Financing
as at the time of PCR submission

Grant	USD Million	353 Thousand	% disbursed	100.0
Loan	USD Million	7.95 Million	% disbursed	100.0

Actual Costs and Financing (USD '000)
as at the time of PCR submission

Component	IFAD	Cofinancing	Domestic	Total
	Actual	Actual	Actual	Actual
Strengthening of community's and producer groups' investment planning	1 290		40	1 330
Implementation of investment plans	5 486		625	6 112
Project and knowledge management, and coordination	1 533		1 965	3 498
Total	8 310	0	2 631	10 941
Remarks				

Outreach

Direct Beneficiaries	
Number of HH members	Number of persons receiving services
Estimated total: [53645]	Total: [49783]
	Women: [24429]
	Youth: [19193]
	Indigenous people: [48099]

Project Objectives

Rural Investment Environment The development objective of the project, responding to the priorities identified in the country strategy note, is improved livelihood resilience through income generation, access to assets, improved nutrition and adaptation to climate variability. Livelihood resilience will be strengthened by the following activities: (a) Increasing income-generating opportunities through the identification of commodities drives the inclusion of small farmers in markets, increases local demand for services and labour, and supports beneficiaries; inclusive and informed participation in market opportunities that improve household income. (b) Improving access to public goods, knowledge and technologies builds community resilience and creates an enabling environment for production through: technology, knowledge and information for better planning and natural resource management; improved water availability for agriculture and human consumption; better soil-management practices; diffusion of information and communications technologies; adoption of renewable energy; and valuation of agro-biodiversity. (c) Enhancing food security and nutrition identifies and promotes commodities, including crops, fish and forest products that sustainably improve household diets and increase nutrition awareness through nutrition education and behaviour change activities, including food-based dietary guidelines.

Country Partners

Executing Institution	Ministry of Agriculture
Implementing Institutions	Ministry of Agriculture

Project Completion Ratings Matrix

COUNTRY: Guyana	
PROJECT NAME: Hinterland Environmentally Sustainable Agricultural Development Project	
PROJECT ID: 2000001472	
BOARD APPROVAL DATE: 26/11/2016	
ENTRY INTO FORCE: 21/03/2017	
PROJECT COMPLETION DATE: 30/09/2024	
LOAN CLOSING DATE: 31/08/2025	
IFAD LOAN AND GRANT (USD MILLION): \$8,452,000	
TOTAL PROJECT FINANCING: \$11,143,000	
IMPLEMENTING AGENCY: Ministry of Agriculture	
Criterion	PCR Rating
International criteria	
- Relevance	5: Satisfactory
- Effectiveness	4: Moderately Satisfactory
- Efficiency	3: Moderately Unsatisfactory
- Sustainability	4: Moderately Satisfactory
IFAD-specific criteria	
- Innovation	4: Moderately Satisfactory
- Scaling up	5: Satisfactory
- Gender equality and women empowerment	5: Satisfactory
- Environment and natural resource management	4: Moderately Satisfactory
- Climate change adaptation	4: Moderately Satisfactory
- IFAD's performance	4: Moderately Satisfactory
- Performance of the government	4: Moderately Satisfactory
Overall project achievement	4: Moderately Satisfactory

Executive Summary

The Hinterland Environmentally Sustainable Agricultural Development Project (HESAD) was financed through a US\$ 7,952,000 IFAD loan, US\$ 500,000 IFAD grant, US\$ 2,010,000 in government financing (83% of planned at design), and US\$ 610,000 in beneficiaries' contributions (231% of planned at design), showing higher than expected buy-in from the beneficiaries. The project was implemented from March 2017 to September 2024 by the Agriculture Sector Development Unit (ASDU) of the Ministry of Agriculture in primarily indigenous communities in Region 9 and Region 1 in the Guyana hinterland. The project reached 10,729 households (134% of target) from 128 villages/ communities, 1,238 of which were female-headed-households (12%). The total number of direct and indirect beneficiaries was 49,783 people (130% of target) reported at completion. The project participants were 97% Amerindian Peoples (132% of target). The project achieved participation levels of 49% women and 39% youth (15–44 years). **The project is overall rated as moderately satisfactory** based on the following findings from the endline survey the project's M&E dashboard and the endline economic and financial analysis (EFA).

Project relevance. The project's relevance is rated **Satisfactory**. The design clearly identified core development challenges across Regions 1 and 9 and proposed a coherent, demand-driven pathway (community-based planning, public collective investment plans and business plans) that remained relevant through completion. The project was strongly aligned with national priorities and IFAD strategy, with two key operational adjustments made during implementation: moving the grant investment fund to the ASDU after no responses were received to the two calls launched for finance institutions to house it; and shifting from a value chain approach to a community investment approach in Region 1 as this was the preferred option for communities in Region 1 just as it had shown to be effective in Region 9.

Effectiveness. The project's effectiveness is rated **Moderately Satisfactory** with average outcome achievement at 88% of targets, women average 87% of targets, youth average 169% of targets, and indigenous peoples 100%.

- **Outcome 1 – investment planning:** Participation in community and business planning was mixed. Household participation in developing/approving Public or Collective Investment Plan (PCIPs)/Business Plans (BPs) was **overachieved** (6,303 households, 143% of target), but participation by female-headed households was **underachieved** (11%, 73% of target). Participation in enterprises with established business plans was **underachieved** in absolute numbers (2,414 people, 48% of target) but **overachieved** on inclusion (62% women, 124% of target; 53% youth, 177% of target).
- **Outcome 2.1 – business results:** Reported income gains were strong with 1,891 households (189% of target) reporting increased agricultural/related income. Nearly 87% of BP participants in Region 1 and 71% in Region 9 reported income increases; about half of enterprises reported higher sales, with stronger results among longer-operating enterprises. **Production increases were potentially achieved** (19%, 76% of target) but evidence is weak due to limited valid responses to the production change question in the endline survey. **Job creation was overachieved** (1,794 new part-time jobs, 125% of target) and was highly youth-inclusive (around 48% vs 30% target), while women's inclusion lagged behind (around 28% vs 50% target).
- **Outcome 2.2 – access to public, collective, and production infrastructure:** Access to public collective investments **overachieved** (8,754 households; 146% of target) and households reporting benefits from these investments were widespread (about 74% of surveyed households in Region 1 and 71% in Region 9). Most financed infrastructure and related services were reported remaining active (81% still in use; 92% services functioning). **Access to production infrastructure improved for BP participants but remained below target** (benefitting about 2,400 people, 60% of target). **Access to training/business support was a key gap** (reaching 1,269 people, 25% of target), affected by delays and inability to conclude MoUs with Guyana Marketing Corporation (GMC), National Agricultural Research & Extension Institute (NAREI), and Guyana Livestock Development Authority (GLDA). **Adoption of climate resilient and environmental sustainable practices remained limited** (estimated 742 households adopted, 42% of target; 33% adoption rate among relevant groups), with soil fertility management the most common practice.
- **Outcome 2.3 – nutrition:** Diet quality improved substantially. Minimum Dietary Diversity for Women **overachieved** at 85.6% at endline. In Region 1, it rose from 65.4% at baseline to 88.3% at endline.
- **Development objective – resilience:** The resilience indicator target was **achieved**: 80% of targeted households improved resilience between baseline and endline (SRI and RDMT). Households benefiting from both BPs and PCIPs performed better than those supported only through PCIPs, suggesting important complementarities and leverage from better convergence of the two instruments.

Efficiency. The project's efficiency is rated **moderately unsatisfactory**. Implementation and disbursements were back-loaded, and Business Plan outreach fell well below expectations, delaying and reducing benefit flows versus appraisal. However, considering a 15-year horizon the project produces an Internal Rate of Return (IRR) of 19.5%, Expected Net Expected Net Present Value Present Value (ENPV) of US\$ 5.4m, and Benefit-Cost Ratio (BCR) at 1.69 showing the project remained economically worthwhile.

The **sustainability** of the project is rated as **moderately satisfactory** with the majority of business plans showing indications of financial sustainability. MoA has integrated the field facilitators hired in Region 1 and 9 in their staff to continue providing support for the business plan groups. The groups have also been integrated in the registries of NAREI and GLDA for them to continue to provide them with extension services. The village councils have the capacities to continue maintaining their PCIP investments also considering the substantial new resources going into the hinterland communities including from the Forest Carbon Credit Fund, the Nature's Opportunity for Development (NODE), and the Low Carbon Development Strategy (LCDS).

The lessons from HESAD point to a consistent theme: community-driven investments perform best when paired with continued and tailored technical assistance and training, realistic commercial design of businesses, and fit-for-purpose institutions.

- **Balance “hardware” with “software”:** Treat training, coaching and technical assistance as core investment costs (not add-ons), with clear delivery and supervision roles and adequate resourcing over the full investment cycle.
- **Allow time for group enterprises to mature:** Newly created producer groups need facilitation, strong governance support and expectation management; economic viability often takes time and is weaker where group dynamics are fragile or group sizes are large.
- **Strengthen feasibility and market intelligence:** Demand-driven choices should be screened through rigorous technical and market feasibility checks to avoid approving investments with weak scale, production requirements or market prospects—especially when under pressure to accelerate delivery.
- **Design for peer learning and clustering:** Intentionally cluster similar investments and facilitate structured peer-to-peer learning to improve problem-solving, knowledge transfer, economies of scale and resilience.
- **Use fit-for-purpose institutions:** Avoid placing income-generating activities under governance bodies with rotating leadership (e.g., village councils) when continuity is critical; dedicated producer organizations with stable mandates and accountability are often better suited.

A. Introduction

This Project Completion Review (PCR) assesses the performance and results of the Hinterland Environmentally Sustainable Agricultural Development Project (HESAD). The review examines the relevance of the project's objectives and interventions in relation to country priorities and beneficiary needs; assesses effectiveness, efficiency and sustainability of project-supported investments; reviews the performance of key partners and implementation arrangements; and documents lessons learned to inform future rural development operations in Guyana.

The completion review followed a mixed-methods approach, combining a desk review of key project documentation with an in-country completion mission. The desk review covered the Project Design Report, supervision and implementation support mission reports, the Mid-Term Review (MTR), restructuring documentation, monitoring and evaluation data, baseline, midline, outcome and endline surveys, and financial and procurement records. The in-country completion mission was carried out through consultations with government counterparts, the Project Management Unit (PMU), technical agencies, service providers, community representatives and beneficiaries in the project areas. Stakeholder workshops were organized in Region 1 and Region 9 to gather qualitative feedback on project implementation, results achieved and assess sustainability prospects. The mission concluded with a final wrap-up meeting with the Project Manager at the Ministry of Agriculture and other key stakeholders, during which preliminary findings were discussed.

Although the project had reached financial closure prior to the completion mission, the timing of the Project Completion Review was shaped by institutional and contextual considerations. As the Government of Guyana did not approve the contracting of an external service provider to conduct the endline survey, responsibility for endline data collection was assumed by the MoA in-house. Between February and June 2025, the PMU carried out the endline data collection required to generate evidence for the PCR. However, the first survey report and data analysis needed substantial rework which was done by IFAD. In addition, the scheduling of the completion mission was aligned with the national electoral calendar. The mission was intentionally conducted after the general elections held on 1 September 2025 to ensure an appropriate context for government engagement and to facilitate full ownership of the completion findings by the newly constituted Government.

At the time of project design, HESAD was conceived to address persistent structural constraints affecting Indigenous and hinterland communities in Guyana, including high poverty levels, remoteness, limited access to markets and services, weak productive capacities, and high exposure to climate variability. The project rationale was grounded in promoting environmentally sustainable livelihood opportunities, strengthening community and producer group capacities, and improving food security and resilience through a demand-driven approach to public, collective and individual investments, supported by a dedicated grant investment fund (GIF). The project focused primarily on Regions 1 and 9, with a few pilots in Regions 7 and 8.

Since the project's entry into force, Guyana has experienced significant changes in its political, economic and climatic context. The most notable development has been the country's rapid economic transformation following the start of offshore oil production in 2019, which led to a sharp increase in national income levels and to Guyana's reclassification as a high-income country. While this transformation has expanded fiscal space and public investment capacity, poverty and food insecurity remain concentrated in rural and hinterland areas, particularly among Indigenous communities, where structural constraints related to remoteness, limited services and climate exposure persist. The political context has also evolved, with general elections held in September 2025 resulting in the re-election of the incumbent government. At the same time, Guyana continues to face a challenging regional environment, including ongoing territorial tensions related to the Essequibo region. From a climatic perspective, increasing climate variability and recurrent flooding have continued to affect both coastal and hinterland areas, reinforcing the relevance of the project's original focus on resilience and sustainable natural resource management.

Project implementation was marked by significant delays, particularly during the initial years, mainly related to challenges in establishing implementation arrangements and operationalizing the investment fund. As a result, start-up was slower than anticipated and early implementation progress was limited. In response, the project underwent a restructuring approved in 2020, which sought to accelerate delivery while maintaining the original development objective and targeting approach. The Mid-Term Review, conducted in October 2021, confirmed the continued relevance of the project but highlighted the need to improve implementation effectiveness and to strengthen the quality, feasibility and sustainability of supported investments. Subsequent supervision missions monitored progress against these recommendations and supported adjustments in implementation modalities up to project completion.

Key project milestones include entry into force in March 2017, the Mid-Term Review in October 2021, the last supervision mission prior to completion in October 2023, and the completion mission conducted in October 2025. These milestones provide the framework for the analysis presented in this PCR and inform the assessment of project performance over the full implementation cycle.

1. [\[1\]](#) For the full list of people met during the mission, see appendix 10

B. Project Description

B.1. Project context

Guyana is a Small Island Developing State (SIDS) with a population of 878,674 (2022). Sitting within the Guyana Shield on the northern coast of South America, 90% of the population, and much of the economy, can be found on the narrow coastal strip, six feet below sea-level, with high exposure to climate change impacts including sea-level rise and flooding.

The hinterland comprises more than two-thirds of the country's landmass but is home to only 13% of the population. It is divided into four administrative regions (Regions 1, 7, 8 & 9) with small, predominantly Indigenous populations living in scattered settlements. HESAD operated primarily in Region-1 (population 38,956 in 2022) and Region-9 (population 29,944). These regions border Venezuela and Brazil respectively.

Levels of poverty in the hinterland are comparatively high, with poor access to services, jobs and markets, resulting from small local economies and underdeveloped infrastructure, both rooted in the unforgiving terrain that typifies the regions. Here extreme weather events, for example, droughts and floods in Region-9, and floods and saltwater intrusion in Region-1 present major threats to livelihoods.

Classified as an upper-middle income country when HESAD was designed in 2016, the country has since undergone rapid transformation, with an emerging oil & gas sector driving double-digit GDP growth (43.4% in 2024), and significant government investments in infrastructure, health, education and job-creation. GDP has risen from US\$4.48B in 2016 to US\$24.66B in 2024. Despite Guyana's reclassification as a high-income country, net official development assistance (ODA) has risen from US\$82.8M in 2016 to US\$139.8M in 2023^[1].

Government spending in the hinterland has increased substantially since 2020, with new infrastructure and service provision driving job growth and household income. Government grants to Indigenous communities, have significantly increased since 2023, with the allocation of 15% of revenue from the sale of carbon credits translating into a 10 – 30-fold increase in annual grants to communities across the hinterland.

Despite this rapid macroeconomic transformation, significant territorial disparities persist. Hinterland regions, home to the Amerindian population, continue to face structural constraints related to remoteness, limited services provision, and restricted economic opportunities. This is consistent with evidence showing that more than 67% of the country's extremely poor population is concentrated in rural and hinterland areas, geographically distant from the main centers of economic activity in Georgetown and along the coast (IDB, 2024^[2]).

The project implementation coincided with deteriorating conditions in neighbouring Venezuela, and the resulting influx of migrants, many crossing by land into Region-1. While the 2012 census enumerated 815 Venezuelans in Guyana, the 2022 Census recorded 12,654 Venezuelans, although UNDESA estimated 40,545 Venezuelan migrants in the country as of mid-2024^[3].

Guyana's food security evolution over the project life showed mixed results. The percentage of the population who could not afford a healthy diet fell from 41% in 2018 to 5% in 2024, while adult obesity moved from 24% in 2016 to 28% in 2022, and the retail value of ultra-processed foods more than doubled between 2017 (US\$116.30/per capita) and 2023 (US\$294.10/per capita)^[4]. The cost of a healthy diet in PPP dollars moved from US\$4.62 in 2017 to US\$6.83 in 2024^[5].

Overall, the context highlights the coexistence of rapid economic growth with persistent structural constraints in hinterland regions. This reinforces the continued relevance of targeted interventions to support livelihoods, build resilience and promote more inclusive and territorially balanced development for rural and Indigenous populations.

B.2. Project objectives

The overall development objective of the HESAD project was to improve livelihood resilience of rural households in targeted hinterland regions. This was to be achieved through increased income-generating opportunities, improved access to productive assets, enhanced food security and nutrition, and strengthened capacity to adapt to climate variability.

The project was designed to address the structural constraints affecting rural and Indigenous communities in Regions 1 and 9, including geographic isolation, limited access to markets and services, low agricultural productivity, and high exposure to climate-related risks. In line with this, the project adopted an integrated and demand-driven approach combining support to productive investments, community infrastructure and capacity building.

HESAD was structured around two main components. The first component focused on strengthening communities' and producer groups' capacities for investment planning, including the identification of economic opportunities and the preparation of Community Production Development Plans -afterwards renamed as Public/Collective Investment Plans (PCIPs) and related investment proposals. Thus, the expected outcome was to *increase investments in business plans that increase agriculture and related income-generating opportunities and increase market access*.

The second component supported the implementation of these plans, financing three main types of investments: (i) PCIPs, aimed at improving community infrastructure and access to basic services; (ii) Business Plans (BPs), supporting income-generating activities and small rural enterprises; and (iii) Community Training Plans (CTPs), designed to strengthen technical, managerial and organizational capacities. Additionally, this component addressed awareness raising and training activities aimed to increase knowledge on nutrition and balancing on diet. The expected outcome was to *improve diet of adequate quality and appropriate quantity, referring to context-appropriate food-based dietary guidelines and drawing insofar as possible on own-production and local markets in a context of effective behavior change and nutrition education activities*.

Through this combination of interventions, the project sought to simultaneously address immediate livelihood needs and longer-term structural constraints by promoting local economic development, strengthening human and social capital, and enhancing resilience to climate and economic shocks. The design also incorporated cross-cutting priorities on gender equality, youth inclusion, cultural capital of indigenous population and nutrition, reflecting the central role of women and vulnerable people in rural livelihoods and food systems in the hinterland.

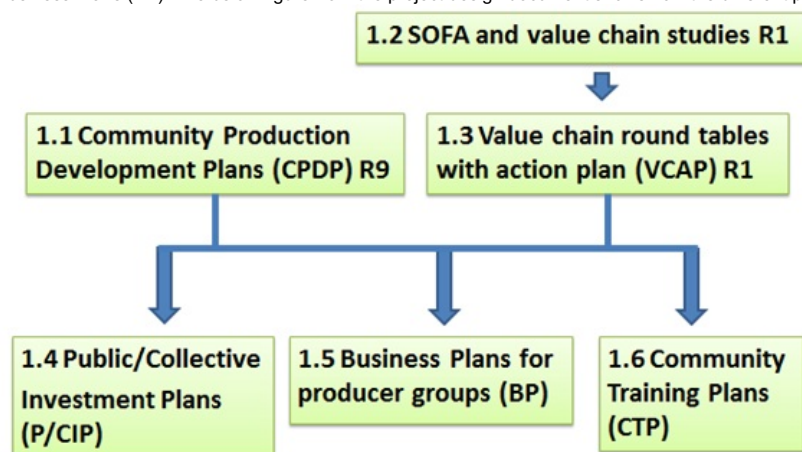
B.3. Implementation modalities

The HESAD budget at project approval was of US\$ 11.14 million, financed through a US\$ 7,952,000 IFAD loan, US\$ 500,000 IFAD grant, USD\$ 2,426,000 from the

Government of Guyana, and US\$ 265,000 in beneficiary contributions. At completion (as of 30/08/2025) the IFAD funding was fully implemented and the governments and beneficiaries' justified contributions were 83% (US\$ 2,010,000) and 231% (US\$ 610,000) of the design target, respectively. This shows significantly higher than expected buy-in from beneficiaries and slightly lower government buy-in. It is also noted that the government has significantly increased its financing to the Amerindian communities in the Hinterlands in parallel with the implementation of the HESAD project. US\$ 1,958,000 of the total budget was allocated for project and knowledge management and coordination, and US\$ 3,026,000 for strengthening of community planning and producer groups' investment and capacity building.

As planned at design, HESAD has been implemented by the Agriculture Sector Development Unit (ASDU) of the Ministry of Agriculture. The ASDU is also implementing projects financed by the Interamerican Development Bank (IDB) in the agricultural sector. The project design considered the significant progress made in land titles provided to indigenous communities in the hinterland, and in supporting the participatory development of community and village development plans (VDP/CDP) in hinterland regions driven by NGOs and the Ministry of Amerindian Affairs. This planning was the basis for funding different livelihood projects with the communities including through the Amerindian Development Fund (ADF).

As such, to achieve its objectives, the main implementation modalities of HESAD were to competitively hire service providers to support the participatory development of Community Production Development Plans (CPDP) for Region 9 villages and Value Chain Action Plans (VCAP) for Region 1 value chain actors based on the existing VDP/CDPs. The difference in approach in the two regions was requested by the government during the design to concentrate on opportunities in the spices and other value chain in Region 1. However, while there was a recent State of Food and Agriculture (SOFA) study for Region 9 at the time of the design, there was limited information on production and value chains in Region 1. Hence the design included a SOFA and value chain study for Region 1 as an initial activity. Another key modality was the Grant Investment Fund (GIF) to be administered by a fund manager (finance institution) and investing in three types of plans developed by the communities aligned with their CPDP and VCAP: Public/Collective Investment Plans (P/CIP), Community Training Plans (CTP), and Business Plans (BP). The below figure from the project design document shows how the different plans were connected.



Building on lessons learned from previous IFAD-funded projects in Guyana, the rationale for outsourcing the GIF was to gain efficiency in its management, solid assessment of business viability of BPs, and create a pathway for financial inclusion of the business groups in the communities by creating a connection with financial service providers. The design team held meetings with several banks already having some outreach in the hinterland communities who confirmed their interest in managing the GIF. However, in the first project years, where the competitive call was launched twice to identify the GIF manager, no proposals were received. At the same time the outsourcing was not the preferred option of the government. Together with slow government appointment of a qualified HESAD project manager and reluctance to work with service providers in general, the failed GIF procurement process was a key factor contributing to significant delays in operationalising the project in the first project years.

In addition, there were significant delays in contracting the combined SOFA and baseline study for Region 1 and the MoA opted for doing the value chain study in-house which did not lead to the formation of value chain round tables or concrete investment recommendations. In 2020 the project was also held back by the restrictions introduced under the COVID pandemic.

After four years of project life, considering the insignificant progress in implementation and the extremely low disbursement rate, IFAD and the GoG agreed to restructure the project in 2020. The restructured project, approved in October 2020, moved the management of the GIF into the ASDU among other changes. The implementation modalities were streamlined by changing the value chain approach in Region 1 to the same community-based approach used in Region 9. The October 2020 restructuring also agreed to award contracts to District Councils in Region 9 and competitively hire a service provider in Region 1 to support the planning and investment process on-the-ground and speed up the implementation. In May 2021, IFAD received an official communication from GoG stating that it had decided not to proceed with these actions but instead deploy MoA staff. The restructuring effectively kicked off the implementation. However, the quality of the support to the communities was adversely affected by difficulties in hiring qualified field facilitators and the inability of the project to sign MoUs with the Guyana Marketing Corporation (GMC), the National Agricultural Research, and Extension Institute (NAREI), and the Guyana Livestock Development Authority (GLDA) of the MoA to deliver training and capacity building to the business groups.

The MTR mission, held in October 2021 acknowledged a significant improvement in project performance, laying the groundwork for consideration of an extension of the project. The November 2022 supervision mission established that the criteria for an extension of the project had been met, and in December 2022, IFAD approved a 12-month extension of the project, as well as an increase in logframe targets, the incorporation of regions 7 and 8 and a reallocation among budget categories.

Involving local business people, financiers and other stakeholders in the evaluation panel approving the BPs was introduced as an important innovation when moving the GIF into the ASDU. This turned out to be a success with these representatives reporting that this role has made them aware of the business needs and opportunities in the communities. As such, it created new avenues for scaling up some of the good investment opportunities (e.g. a finance mechanism set up by CI is copying this approach, and the Nappi beekeeping is being scaled via a panel member in Region 9).

Another innovation in implementation modality brought in by the HESAD in the Guyanese context was the direct transfer of funds to the village/community councils and the business groups to implement their plans. This created ownership, procurement and implementation capacities in these groups not achieved by previous projects without this transfer of funds.

On the sidelines of the UN Food Systems Stocktaking Moment (July 2023), IFAD and the Government of Guyana agreed to consider a proposal for a scale up of the HESAD project through additional financing by both parties. However, due to the country having been classified as a high-income country by the World Bank in 2023 IFAD was not able to provide additional financing to Guyana. Instead, the Fund approved an additional extension to allow for an orderly wind-down of the project and to ensure sustainability of investments. HESAD's completion and closure dates were 30 September 2024 and 31 August 2025, respectively.

B.4. Target groups

The project targeted rural poor households in Regions 1 and 9, with pilots added in Region 7 and 8 after the MTR. Rural areas in these regions are characterized by persistent poverty, limited business and employment opportunities, and the impacts of climate change have continued to erode community resilience and social cohesion. Hinterland communities face limited livelihood opportunities, weak incentives for productive investments, and significant exposure to climate and economic shocks. These factors constrain their ability to respond effectively to emerging socio-economic and environmental challenges.

The project has overachieved on its outreach targets. The total outreach planned at design was 8,000 poor rural households, equivalent to 94% of all poor households in the project area at the time of the design, and 125% of the target households were intended to be female headed, reflecting the demographic composition of the area. At completion, the project reported to have reached 10,729 households (134% of target), 1,238 of which were female-headed-households (12%). The total number of beneficiaries was estimated at 38,400 people at design, overachieved with a total of 49,783 people (130% of target) reported at completion. At design, 75% of project beneficiaries were planned to be from Amerindian Peoples, at completion this percentage reached 97%. The project achieved participation levels of 49% women and 39% youth (15–44 years). Beneficiaries came from 128 villages/communities including all villages in Region 9, 4 pilot villages in Region 7 and 8 and most villages/communities in the Mabaruma and Maruka subregions in Region 1. It is important to highlight that outreach figures are

determined by the village-level PCIP infrastructure investments, and all household members are counted in most cases, the reported percentages of women, youth, and Indigenous Peoples largely reflect the demographic composition of the targeted communities.

Women: The UNDP 2015 Human Development Report showed that Guyana had a Gender Inequality Index (GII) value of 0.515, this same index was reported at 0.427 in 2023, underlining that in Guyana: (i) the share of parliamentary seats held by women increased from 31.3% to 36.6%; (ii) the proportion of adult women who attained at least secondary education remained relatively stable, from 60.3% in 2015 to 59.4% in 2023; (iii) maternal mortality declined substantially, from 250 to 112 deaths per 100,000 live births, while the adolescent birth rate fell from 88.5 to 69.9 births per 1,000 girls aged 15–19; and (iv) women's labour force participation decreased from 42.6% in 2015 to 39.7% in 2023, yet still trails men's participation, which dropped from 80.5% to 61.8% over the same period. The impacts of the COVID-19 pandemic may have contributed to these declines.

The project design recognized that women play a central role in traditional food systems and agricultural practices, as they are primarily responsible for planting, harvesting and transporting crops, as well as processing cassava and managing tasks such as preparing and preserving hunted catch, and collecting firewood and water, activities that are core to daily subsistence in many Amerindian communities. Men, while often considered heads of household, typically prepare land for cultivation (including those who return from migration during land preparation periods) and engage in hunting for household food security. Despite their key roles, women's participation in training and community meetings is often constrained by limited self-confidence, shyness in larger groups and discomfort speaking in front of men, and, in some cases, language barriers. The design also took into account several social challenges disproportionately affecting women, including domestic violence, child abuse and incest, teenage pregnancies and risks of human trafficking, all of which influence their ability to participate fully in community and project activities.

Among the activities targeting women foreseen in the design, the project placed strong emphasis on strengthening the productive and entrepreneurial capacities of Indigenous women and youth, supporting 297 investment plans—including 47 led exclusively by women—and achieving a 62% rate of women's participation in business planning, with reported increases in women's income and financial autonomy. Targeted grants enhanced women's ownership and control over productive assets, while technical training in areas such as agro-processing, shadehouse management, bakery skills, business improvement and quality control further supported the sustainability of their enterprises. Although some groups experienced dropout and gaps in training affecting performance, women's priorities were clearly reflected in PCIP investments such as school feeding, water tanks and renewable energy initiatives. More than 92% of respondents in the endline survey reported that PCIP services and BP production facilities continue to function.

Youth: The project also recognized the specific situation of youth, who represent a significant share of the project area's population, with those aged 19 and under accounting for about 58%. Within this group, 8–9% are aged 15–19, an important transition cohort that has typically completed primary or secondary education and is either working or seeking employment. This group faces limited livelihood opportunities which have driven many young people to migrate to Brazil or the Coastland regions in search of work or in logging and mining concessions. The project contributed to two key objectives of IFAD's Rural Youth Strategy: i) increased economic empowerment, helping young people access resources; and ii) increased participation of young people in organizations, promoting the importance of giving young people an increasing decision-making role. Activities such as the street theater and radio show how the project used relevant communication channels to establish a relationship with the youth.

Indigenous Peoples – or Amerindians as they are identified both collectively and in legislation – amount to 78,500 in Guyana, approximately 10.5% of the total population (2012). They are the fourth largest ethnic group. They comprise the majority of the project's beneficiaries. The project implemented its FPIC Implementation Plan, and the restructuring of the project led to an opportunity to strengthen the integration of the FPIC into the project documents. Indigenous Peoples' communities have traditionally managed their natural resources through well-established customary governance systems, resulting in generally low restoration needs. However, growing pressures from climate change and the shift toward new livelihood activities are creating emerging risks and opportunities the project implemented training programmes, which aimed to strengthen community capacities for sustainable resource management in a changing context.

C. Assessment of project relevance

The relevance of the project is rated as Satisfactory. The development challenges faced by the communities in Region 9 and Region 1 were adequately described in the project design, and for the most part backed by quantitative evidence with some data not existing for Region 1. The proposed solutions taking a community-based planning and demand driven approach allowed for designing public collective and livelihood investments consistent with the specific challenges in the communities and ensuring a vertical logic of the interventions to achieve the defined outcomes and impacts. The initial design was consistent with IFAD and Government policies at the time, prioritising value chain development for Region 1. The design has remained relevant until project completion, with the exception of the value chain approach in Region 1 that was changed to a community-based approach when it became clear that this was better aligned with changes in government priorities, and the reality and aspirations of the communities in Region 1.

C.1. Development challenge and project Theory of Change

Clear problem definition. Despite limited data on the hinterland, the project design report clearly identified the development challenges and underlying causes for the indigenous villages and mixed communities in the project area recognising also the differences between Region 1 and Region 9:

- Rural poverty, food and nutrition insecurity persistence and concentration. The rural interior regions (hinterland) have the highest poverty rates and concentration of indigenous people (i.e. 90% in Region 9) with three of four people being poor and with Region 1, Region 8 and Region 9 being the most affected.^[6] Food security in Region 9 is compromised and worsens during drought and flood seasons. The proportion of underweight (weight for age) children under the age of 5 was almost 12% in the Hinterland (15.5% Region 1, 11.5% Region 9). Nearly 13% of children were stunted (height for age) compared to 3.3% in coastal areas.^[7] Changes in the Amerindian diets in favour of refined carbohydrates, processed foods, and sweetened and calorie-dense foods, drives malnutrition and is accompanied by the rise in chronic diseases.^[8]
- High climate change vulnerability. Guyana's climate has experienced significant changes since the 1960s with increasing incidence of droughts, floods (mostly Region 9 but also in Region 1) and sea level rise/saltwater intrusion (Region 1). Projections predict further temperature increase, extreme weather patterns, and sea level rise by 1cm/year, with significant impacts on the coastal areas (Region 1).^[9] Guyana was ranked 13 out of 162 countries for flood risk and stresses on Guyana's internal water resources, aquifers and rivers are growing due to changing rainfall patterns, increases in the number of dry spells and drought conditions.^[10] Main drivers of vulnerability to these risks causing reduction in agricultural production in hinterland communities are: the dependence on cassava as a main crop (Region 9); limited adoption of climate resilient practices, and lack of infrastructure leaving the communities disconnected during floods (both regions). The transition to new more permanently settled and agricultural-based livelihoods in both regions makes traditional coping strategies that included more dependency on hunting and gathering and moving to higher grounds during the ones predictable flood season, no longer an option.
- Remoteness and underinvestment. The remoteness of communities in both regions hinders the development of business and income-generating opportunities. The lack of infrastructure (poor roads and bridges, access to internet and energy and telecommunication networks) significantly limits access to markets, information and technologies hindering the adaptation to the changing economic and environmental context, and the integration of local activities in the national economy. It drives high transportation costs, low incentives for investments in productive activities combined with low volumes, low productivity and high production costs.

Solutions articulated in coherent development pathways. Against the identified development problems and drivers, the project design defined a clear development objective to "improve livelihood resilience through income generation, access to assets, improved nutrition and adaptation to climate variability". Through the support for participatory community and producer group planning processes and development of Community Production and Development Plans (Region 9) and Value Chain Action Plans (Region 1) and aligned Public/Collective Investment Plans (P/CIP), Community Training Plans (CTP), and Business Plans (BP) in component 1 the design articulates demand-based pathways to achieve this objective. The facilitated participatory process sought to strengthen local development and investment planning capacities. The demand-based approach allowed for the identification of adapted pathways to the different conditions in the two regions and in the various villages and communities targeted. The subsequent implementation of the pathways in component 2 through: PCIPs provide solutions to the lack of water, road, bridges, internet and energy infrastructure and the risk of being disconnected from information and markets in particular during floods; the BPs provide solutions to the lack of investments in diversification in production and economic activities and the adoption of climate resilient technologies and practices; and the CTP provide solutions to the lack of access to knowledge and practices that can improve household nutrition and strengthen the resilience and business skills of the communities.

Logic theory of change. The project logframe has logical links from outputs to outcomes and development objective indicators as laid out in the theory of change described in the section B of the design document. Strengthened capacity of village and community councils and producer groups in investment and training planning and the implementation of context adapted PCIPs, CTPs and BPs giving solutions to the identified problems as described in the previous paragraph will

lead to: an improved investment environment for livelihood activities and businesses; production increase and diversification; increased sales and income, improved household diets and resilience.

C.2. Alignment

HESAD aligned fully with Guyana's priorities for poverty reduction, strengthening resilience in rural livelihoods and for environmentally sensitive hinterland economies as reflected in the LCDS, and both the Ministry of Agriculture's Strategic Plan (2013 – 2020) and its National Pathway for Food Systems Transformation (2021). The latter prioritized food security and resilience, and recognized the interconnected nature of poverty, climate shocks and food insecurity in the hinterland. More broadly the LCDS identified fostering sustainable development in the hinterland as a core priority outcome, coupling improved access to public goods (electricity, water, internet) and good governance (village planning), with investments in both climate resilient agriculture systems and micro and small enterprises for climate-proofing small hinterland economies. The project largely mirrors the ambitions of IFAD's Guyana Country Strategy Note (CSN) and its focus on improving livelihood resilience through participatory investment planning. The CSN's emphasis on climate-smart and regenerative agriculture; rights of indigenous peoples; youth-led investments; nutrition-sensitive interventions are well reflected in HESAD.

C.3. Adequacy of design changes

Changes introduced during project implementation were mostly addressing challenges in implementation modalities as described in section A.3. The project design stayed relevant to the context and was aligned with national processes. No changes were made to project objective and outcomes. The only change made was related to the approach at output level in Region 1. While a community investment and capacity building planning approach was designed for Region 9, the initial approach for Region 1 was focused on the development of government priority value chains (VC) using VC stakeholder platforms for participatory planning of investments and capacity building activities. Based on the conclusions of the VC studies done in Region 1, the feedback from the farmers that they did not want an approach focusing on limited VCs, and the emerging positive experience with the community approach to investment planning in Region 9, the October 2020 restructuring aligned the Region 1 approach to the approach in Region 9. This restructuring was instrumental in finally making the project operational in Region 1. This restructuring could have been performed earlier but was held up due to other issues in the project management at that time described in section A.3.

D. Assessment of project development effectiveness

The overall effectiveness of the program is rated as moderately satisfactory. HESAD has achieved its target outreach of families and beneficiaries, as well as its development objective. According to the endline survey, beneficiary households considerably increased their production and incomes, and diet quality improved substantially, especially for women. The survey also shows employment generation was one of the most significant outcomes of the project, with benefits spreading beyond the direct beneficiaries.

D.1. Effectiveness

Project Outreach. At completion, 10,729 households had received services from the project, exceeding the target by 34%. Services were provided to 53,645 household members, also exceeding the target of 40,000 people. Through inclusion and gender equality strategies, the program achieved the participation of 1,238 female heads of household (12% of all beneficiary households), exceeding the target by 29%. The restructuring of the project had a positive impact on its overall results, particularly to help accelerate delivery while maintaining the original development objective and targeting approach.

Achievement of project outputs. At output level, the project delivered a broad range of investments and capacity-building activities aligned with the targets set in the logical framework, although with some variation in timing and quality across components. The project successfully operationalized its demand-driven approach by supporting the preparation and implementation of Public/Collective Investment Plans (PCIPs) and associated BPs across targeted communities. Regarding **Component 1**, the project strengthened the capacity of communities and producer groups to identify and prioritize investment opportunities. Beneficiaries participated in the preparation of PCIPs, Business Plans (BPs) and Community Training Plans (CTPs), contributing to enhanced local ownership and participatory decision-making processes. Capacity-building activities covered a wide range of topics, including agricultural production, business management, financial literacy and climate-smart practices. Endline data indicates that over half of surveyed households reported having received some form of training, with higher participation rates observed in Region 9. However, participation in some technical areas directly related to climate resilience (such as pest and disease management) remained relatively limited.

In terms of specific outputs, the project achieved near-complete delivery of community infrastructure investments, with 128 PCIPs implemented against a target of 134 (96%). In contrast, employment generation through PCIPs significantly exceeded expectations, reaching 2,371 beneficiaries compared to a target of 1,600. This overachievement reflects the labour-intensive nature of infrastructure works and the high demand for short-term employment opportunities in hinterland communities.

Additionally, while Community Training Plans exceeded targets (93 developed compared to 50 planned), reflecting strong demand for capacity-building support, the number of individuals trained in several thematic areas (ICT, gender and other non-business-related topics) remained below targets, due to logistical challenges in remote areas, as well as limited availability of qualified service providers.

The delivery of knowledge products and information services was more limited. Only 7 market, weather and climate bulletins were produced against a target of 30, indicating that this aspect of the design was not fully operationalized. This reflects institutional capacity constraints and difficulties to integrate information services into the implementation model.

Output 1.1 PCIPs	
Indicator: 134 PCIPs developed	Achieved: 128 (96%)
Indicator: 1 600 people benefitting from casual labour opportunities (400 women, 1000 youth)	Overachieved: 2 371 (women 364, youth 1095)
Output 1.2 Business Plans (BP) for producer groups	
Indicator: 200 BPs developed	Underachieved: 169 BPs
Output 1.3 Training Plans (TP - Communities, Producer Groups, Groups of Agripreneurs)	
Indicator: 50 CTPs developed	Overachieved: 93 CTPs
Output 1.4 List of cross community investments, studies and TA for the implementation of P/CIPs, BPs and CTPs	

Indicator: 5 576 People trained in topics not related to business plans	Underachieved: 3 805 people trained in topics not related to BPs
Indicator: 2 688 people trained in gender	Underachieved: 1 875 people trained in gender
Indicator: 200 people trained in ICTs	Underachieved: 52 people trained in ICTs
Indicator: 2 688 people trained in other topics	Underachieved: 1 878 people trained in other topics
Output 1.5 Market, weather and climate bulletins	
Indicator: 30 bulletins developed	Underachieved: 7 bulletins developed

2. Under Component 2, a significant portfolio of investments was implemented. A total of 169 Business Plans (against a target of 200) were implemented across a diverse set of economic activities, including livestock, crop production, agro-processing and small rural enterprises. While this represents a strong level of delivery, the shortfall is largely explained by delays in project start-up and implementation during the early years, as well as the time required to support communities in preparing viable investment proposals. These delays also affected the time available for full maturation of business activities by project completion. Also, 128 Public/Collective Investment Plans were delivered (against a target of 134), primarily focused on community infrastructure such as public buildings, roads and bridges, water systems and school feeding facilities. These investments contributed to improving access to productive assets, basic services and local economic infrastructure in targeted communities.

Despite the achievement of these investments, **several output-level indicators related to quality enhancement and support services were only partially achieved.** While all Business Plans developed were implemented, only 50 received structured coaching, technical assistance or business incubation support, compared to a target of 200. This gap reflects constraints in the provision of sustained technical support, particularly following the initial investment phase, and is consistent with endline findings pointing to limited market integration and value chain development.

Outputs related to climate-smart agriculture were significantly underachieved with only 6 Business Plans integrating climate-smart interventions against a target of 40. This reflects both limited technical capacity and the limited prioritization of climate-smart practices within business development processes. The establishment of value chain coordination mechanisms was also partial, with only 2 studies completed out of 4 planned.

Outputs related to strengthening service provision also fell short of targets. 22 public sector and 25 civil society service providers were trained (against targets of 30 each), and no audio-visual or remote training materials were developed, pointing to missed opportunities for scaling knowledge dissemination in remote contexts.

Training in production practices slightly exceeded targets (1,822 individuals trained compared to 1,570 planned), reflecting strong demand and prioritization of core agricultural activities. Training in income-generating activities reached 2,486 beneficiaries (vs. a target of 3,000), **with notable overachievement in terms of women (65%) and youth (43%)** participation, indicating strong inclusion performance.

Outputs related to **nutrition awareness were only partially achieved.** While behaviour change and nutrition awareness activities were implemented, only 898 households were reached against a target of 4,800, and 1,984 households received targeted nutrition support compared to 3,600 planned. This reflects implementation delays as well as the complexity of delivering nutrition interventions in dispersed and remote communities. However, as evidenced in the endline survey, these outputs still contributed to significant improvements in dietary diversity outcomes, particularly among women.

Output 2.1.1 Business plans for the production and processing of cash crops and related value-adding activities approved	
Indicator: 200 BPs supported and implemented	Underachieved: 169 BPs supported and implemented
Output 2.1.2 Increase in volume sold through new or existing markets channels and coaching, technical assistance and business incubation activities provided for the implementation of business plans	
Indicator: 200 BPs that have received coaching, technical assistance and business incubation activities	Underachieved: 50 BPs that have received coaching, technical assistance and business incubation activities
Output 2.1.3 Sub-regional roundtables established to coordinate actions on key cash crops and commodities in Region 9 and studies for specific value chains and related markets opportunities	
Indicator: 4 studies carried out	Underachieved: 2 studies carried out
Output 2.2.1 Investments in public goods for improved water management, renewable energy and in public facilities and infrastructure that increase access to internet in target	
Indicator: 134 P/CIPs supported and implemented	Underachieved: 128 P/CIPs supported and implemented
Output 2.2.2 Investments for integrated soil fertility management, integrated pest management, and in technology for increasing efficient water use for productive activities in business plans	
Indicator: 40 BPs that have integrated and received technical assistance for climate smart interventions	Underachieved: 6 BPs that have integrated and received technical assistance for climate smart interventions
Output 2.2.3 Investments in the quality and availability of support services	
Indicator: 30 Public sector service providers (staff) with improved capacity to provide relevant services	Underachieved: 22 Public sector service providers (staff) with improved capacity to provide relevant services

Indicator: 30 Civil society service providers (staff) with improved capacity to provide relevant services	Underachieved: 25 Civil society service providers (staff) with improved capacity to provide relevant services
Indicator: 10 Audio-video and remote training courses and extension material provided by implementing and supporting partners	Underachieved: 0 Audio-video and remote training courses and extension material provided by implementing and supporting partners
Output 2.3.1 Target group aware of balanced diets (60%)	
Indicator: 4,800 households (15% female headed households)	Underachieved: 898 households (18.2% female headed households)
Indicator: 1.1.8 Households provided with targeted support to improve their nutrition, 3,600 households.	Underachieved: 1,984 households, 9 842 household members, 9,448 indigenous people, 555 women headed households.
Output 2.4 Increased knowledge on production and income generation through business support services and training	
Indicator: 1.1.4 Persons trained in production practices and/or technologies; 1,570 people trained.	Overachieved: 1,822 people trained (301 people trained in crop; 1,380 people trained in livestock; 141 people trained in fishery)
Indicator: 2.1.2 Persons trained in income-generating activities or business management, 3,000 people trained (50% women, 40% young)	Underachieved: 2,486 people trained (65% women, 43% young).

Under component 3, Knowledge Management and Coordination, two of the three outputs were overachieved and one was slightly underachieved.

Output 3.1 C3 - Participatory planning and M&E	
Indicator: Communities that monitor and evaluate their P/CIPs	Overachieved: 100% of the communities monitored and evaluated their P/CIPs
Indicator: Producer groups that monitor and evaluate their BPs	Overachieved: 100% of the communities monitored and evaluated their BPs
Indicator: Regional Evaluation and Planning Workshops organized in each region annually	Underachieved: 4 of 6 planned workshops were carried out

Overall, the project demonstrated a satisfactory performance in delivering core investment-related outputs, particularly infrastructure and enterprise development. However, outputs requiring sustained technical support, institutional coordination or specialized service provision were more unevenly achieved. These patterns are closely linked to early implementation delays, capacity constraints and the inherent challenges of operating in remote hinterland environments.

The project's effectiveness in turning these outputs into tangible outcomes is **rated as moderately satisfactory**. The project objective was mostly met, and the outcomes had an average achievement rate above 80%: total average 99% of targets, women average 87% of targets, youth average 169% of targets, and indigenous peoples 100%. This is detailed in the following.

The MoA decided to do the endline survey in-house to measure the achievement of outcome and development objective indicator targets. Subsequently, IFAD provided substantial support in data cleaning and analysis, comparing baseline data, midline and outcome surveys done during the course of the project. This was complemented by data collection for the end of project EFA led by IFAD and the PMU dashboard for BPs and CIPs. The following presents the results at outcome level evidenced by these efforts with reference to the HESAD endline report for further details.

Outcome 1: Communities and producer groups have identified investment opportunities and manage economic and climate change risk.	
Target: 4,400 Households (15% female headed) in targeted communities participate in developing or approving PCIPs/BPs	Overachieved with 6,253 households (142% of target) having participated in developing PCIPs and/or BPs of which 672 (11%) are female headed (73% of target) (project M&E dashboard).
Target: 5,000 people (50% women and 30% youth) in targeted communities participating in enterprises (group or individual) with established business plans.	Underachieved with 2,414 people (48% of target) participating in enterprises with an established business plans but overachieved in terms of percentage of women (62%) and youth (53%) participation (project M&E dashboard).

Capacities for investment planning strengthened. The project overachieved its target by 42% for households involved in planning of investments. This was achieved through a significantly higher participation than planned in public collective investments while the target for people involved in planning business investments was underachieved by 52%. However, the business planning achieved a strong inclusion of women (62% against 50% planned) and youth (53% against 30% planned) surpassing the planned targets.

Outcome 2.1: Increased investments in business plans that increase agriculture and related income-generating opportunities and increase market access	
Target: 1,000 Households (15% female headed) that invested in business plans have increased their income from agriculture and related activities	Overachieved with 1,891 households (189% of target) participating in BPs reported an increase in their income (endline survey).
Target: 25% of Households reporting an increase in production (CI 1.2.4)	Potentially achieved with 19% of households (76% of target) actively participating in BPs reporting an increase in production. Project monitoring data showed an upward trend in the number of households reporting increased production.

Target: 1,440 new part-time jobs created (50% women, 100% IP, 30% young)	Overachieved with a total of 1,794 new part time jobs created (125% of target) including 473 part-time jobs created (43% women, 46% youth) for members of groups with supported BPs, 1226 seasonal jobs created (22% women, 50% youth) for non-members, and an estimated 95 part-time jobs for operations of the PCIP investments. In addition, 1858 temporary jobs were generated mostly for PCIP construction work (project M&E dashboard and endline survey).
--	---

2. **Significant increase in incomes from implemented business plans.** According to the endline survey, among households participating in Business Plans, income gains were widespread. Nearly 87% of BP participants in Region 1 and about 71% in Region 9 reported that their household income increased due to the enterprises and business activities supported through the project. Approximately half of surveyed enterprises reported higher sales compared with the period before project implementation, while most of the remaining enterprises reported stable sales levels. These results are stronger for enterprises that have been in operation longer, suggesting that positive results may further increase over time.
3. **Indicative increase in production from implemented business plans.** The increase in income appears more related to processing and value addition since the endline survey did not render conclusive data on changes in production among business plan participants. Only 19% of respondents who answered the question on changes in production compared to the pre-HESAD period also indicated that either they or a household member were part of a Business Plan group. Among these respondents 29.6% (against a 25% target) reported an increase in production, compared to 16% among non-BP respondents. In addition, a smaller share of BP participants reported declines in production (21.1% compared to 26.3% among non-participants), suggesting that BP participation is associated with relatively better production outcomes. However, these findings should be interpreted with caution because of the relatively limited number of respondents to the production change question among BP participants. In addition, ambiguity remains regarding whether respondents referred to BP-related activities, individual production, or overall household production. The results are also not fully consistent with the higher rates of reported income improvements observed by the survey.
4. Across the broader group of respondents in both regions, 19% of the 371 respondents who answered the question on production changes compared to the pre-HESAD period experienced an increase in production, 25% reported a decrease, and 56% stated that production levels were similar to those before the implementation of the HESAD Project. There were stronger results in Region 9 where 23% of respondents reported that their production had increased, while 28% indicated a decline, and 49% stated that production levels had remained similar to the pre-project period. In Region 1, a smaller proportion (15%) reported increased production, 22% experienced a decline, and a majority of 63% indicated that their production remained unchanged. The reported changes in production appear to be closely associated with exposure to climatic shocks and external stressors. Among households that experienced significant climate events during the past two years, only 13.4% reported an increase in production (below the overall average), while 29.9% reported a decline, a higher-than-average share. In contrast, among households that had not been exposed to significant climatic events, 27.1% reported increased production (well above the overall average and the project target) while only 17.9% reported a decrease.
5. **Strong youth-inclusive employment generation.** Employment generation emerges as one of the most significant outcomes of the project, with benefits spreading beyond the direct beneficiaries. The project investments created employment through multiple channels for almost 100% indigenous peoples. According to the project's M&E dashboard for BPs and PCIPs the project created 473 part-time jobs for members of groups with supported BPs and 1,226 seasonal jobs for non-members surpassing the project target by 18%, overachieving on youth inclusion (50% against 30% target) and underachieving on women inclusion (28% against 50% target). In addition, 1,858 temporary jobs were generated mostly for PCIP construction work but also including an estimated 95 part-time jobs for operations of the PCIP investments. These employment outcomes are particularly significant in the hinterland context, where labour markets remain thin and opportunities outside subsistence agriculture are limited. By creating employment opportunities through both enterprise development and community investments, the project contributed to diversifying local income sources and strengthening economic resilience.

Outcome 2.2: Increased access to assets that build community resilience and create an enabling productive environment (water, energy, ICT, others)	
Target: 6,000 Households in targeted communities with access to public goods	Overachieved with more than 8,754 households (146% of target) living in communities with a new public collective investment (project M&E dashboard and confirmed in endline survey).
Target: 4,000 People in producer groups and agri-entrepreneurs in targeted communities with access to production infrastructure	Underachieved with slightly over 2,400 people (60% of target) participating in business groups with access to production infrastructure (project M&E dashboard and confirmed in endline survey)
Target: 5,000 People in producer groups and agri-entrepreneurs in targeted communities with access to technical assistance and agri-extension services	Underachieved with an estimated 1,200 people (24% of target) in business groups (52% of BP group members) having received training and business development support (endline survey). This estimation is well aligned to the figure reported by the project M&E dashboard, which accounts for 1,209 people.
Target: 5,200 People in producer groups and agri-entrepreneurs in targeted communities with access to business support services	547 people (11% of the target) (project M&E dashboard).
Target: 1,750 Number of households in target communities that adopt technologies for integrated soil fertility management, integrated pest management, and technology for increasing efficient water use that improved adaptability to climate change	Underachieved with an estimated 742 people (42% of target) in all crop, mixed farming and crop processing groups (41) having adopted climate resilient and improved technologies and practices corresponding to 33% adoption rate (endline survey)

6. **Widespread improvement in access to public goods in targeted communities.** Public and Collective Investment Plans (PCIPs) reached a large share of the population in project areas, with about 74% of surveyed households in Region 1 and more than 71% in Region 9 reporting benefits from at least one community investment. At the time of the endline survey, a large majority of investments financed under the project remain active including public and collective as well as production investments. About 81% of respondents reported that infrastructure created through the project is still in use, while more than 92%

reported that related services and activities continue to function. The PCIPs mostly addressed local infrastructure needs including roads, bridges, and walkways. Other widely reported benefits included access to agricultural tools, improved water supply systems, and community facilities.

7. **Access to production infrastructure increased.** Despite the significant delay in starting investments, the project managed to implement 169 BPs with the participation of 2,414 people improving their access to production infrastructure. While this is an impressive achievement in a short time period [\[11\]](#) it fell short of the planned target of 4,000 people supported with improved production infrastructure in business groups.
8. **Gaps in access to technical assistance and business support services for business groups.** The business group participants could have benefitted from more targeted technical assistance and business support services. The significant delays in starting investments and the inability to conclude the MoUs with GMC, NAREI, and GLDA adversely affected these services. This was to some extent mitigated though the engagement of private sector trainers and exchange visits taking advantage of more established business groups sharing their experience with newer groups. The endline survey found that just over half of all respondents (51.9%) reported receiving some form of training. Participation was notably higher in Region 9, where 75.6% had received training, compared to 55.2% in Region 1. The training content varied by region: Region 1 concentrated more on livestock and crop production, while Region 9 focused more broadly on agri-business, processing, and community development. This suggests a differentiated approach to skills development aligned with local priorities and capacities. However, access to and participation in some potentially relevant training categories specifically related to the improved resilience of production systems (like Pest, Disease control & Environmental Practices) was generally low across both regions, and especially in Region 1 (1.1%).
9. **Limited adoption of climate resilient and improved agricultural practices.** The limited access to and participation in training in climate resilient and improved production technologies and practices is reflected in low adoption. Based on the available data in the baseline survey, across the two regions only 27 respondents from 11 distinct BP groups working on crop production and processing reported that the group had adopted at least one of the listed improved crop production practices. This represent and adoption rate of 33% in these groups extrapolated to a total of 742 people (42% of target) across the project. As such, the findings suggest that the diffusion and uptake of regenerative and climate-adaptive techniques within groups and BP members remains extremely sparse. Soil fertility management emerged as the most widely used practice, used by 30% of the farmers having adopted practices in Region 1 and 20% in Region 9. In region 1 this was followed by the use of compost and manure, and rainwater harvesting and storage, each used by 20%, while in region 9, it was followed by disease management adopted by 10%.
10. The endline survey also enquired about which practices adopting farmers found more effective and useful. In Region 1, when assessing perceived effectiveness, soil fertility management remained the top-ranked practice, representing 22.2% of total "useful" responses, suggesting that most groups who implemented it found it beneficial. Similarly, the use of compost and manure and rainwater harvesting were each perceived to be useful by 22.2% of respondents, and planting methods (direct seeding, transplanting) were considered useful by 11.1%. These perceptions were somewhat similar in Region 9 where planting methods, soil fertility management, and use of compost and manure each accounted for 21.1% of total "useful" responses, and pest and disease management was found useful by 10.5% of respondents. This indicates clear opportunities for further hands-on training and encouragement of adoption of these practices important for healthy and climate resilient soils and local nutrient recycling.

Outcome 2.3: Improved diet of adequate quality and appropriate quantity, referring to context-appropriate food-based dietary guidelines and drawing insofar as possible on own-production and local markets in a context of effective behaviour change and nutrition education activities

Target: 60% of women reporting minimum dietary diversity (MDDW) (COI 1.2.8)

Overachieved with 85.6% of women (reporting minimum dietary diversity (endline survey)

11. **Diet quality improved substantially, especially for women.** The share of women achieving the Minimum Dietary Diversity threshold reached 85.6% at endline, exceeding the target of 60% (142.7% achievement). In Region 1 alone, the proportion increased from 65.4% at baseline to 88.3% at endline, reflecting significant improvements in food consumption patterns. However, during PCR preparation, some inconsistencies were identified in the logframe target-setting methodology for COI 1.2.8, particularly regarding the estimation of absolute targets and some disaggregations. Following guidance from IFAD nutrition specialists, the percentage result (85.6%) was retained as the most robust measure for assessing achievement, while absolute figures were recalculated using households reached under nutrition activities (CI 1.1.8) as the denominator. In addition, comparability for certain disaggregations (e.g. indigenous people and household members) remains limited, as original targets had been estimated using household member figures in outreach, rather than the standard MDD-W household-based approach.
12. **Achievement of development objective**
13. The outcome achievements have been translated into the achievement of the development objective indicator: 6,400 targeted households have increased their resilience (80%)
14. Despite the high exposure to climate hazards, the resilience analysis (through the RDMT and Simplified Resilience Index) shows that a substantial and widespread improvement in household resilience was achieved over the course of the project. Based on the combined analysis of the Simplified Resilience Index (SRI) and the Resilience Design and Monitoring Tool (RDMT) index, 80% of households experienced an increase in resilience between the baseline and endline surveys, indicating that the project successfully achieved its Development Objective indicator. As mentioned in the endline report, benefits were equally shared by female-headed households and male-headed households.

Importantly, households that declared having benefited from both Business Plans (BP) and PCIPs consistently achieved higher scores across the RDMT indices for adoption of resilience interventions offered by the project, and for the resilience results compared to households supported only through PCIPs. This finding points to strong complementarities between PCIP and BP interventions and suggests that stronger convergence and coordination between PCIP and BP instruments can generate important leverage effects.

D.2. Impact

15. Not applicable

D.3. Gender equality and women's empowerment

HESAD, through its Gender and SI officer, developed and led the implementation of the project's Gender and Social Inclusion Strategy, which ensured that gender and social inclusion considerations were effectively mainstreamed throughout project. As a result, women's participation was reported to reach 18,859 women (49% of total target population), 15,360 youth (40%), and 36,480 persons belonging to Indigenous Peoples (95% of target population).

Because outreach figures are determined by the village-level PCIP infrastructure investments, and all household members are counted in most cases, the reported percentages of women, youth, and Indigenous Peoples largely reflect the demographic composition of the targeted communities. A more meaningful measure of gender and youth inclusion is the share of women and youth among participants in production activities (group or individual) with established business plans. Endline data reported women represented 50% and youth 30% of beneficiaries. These results reflect the impact of targeted engagement efforts, which supported the participation of women and youth through a social inclusion strategy that facilitated their meaningful involvement.

Even if the project was designed before gender transformative guidelines were in place at IFAD, the project made a significant contribution to addressing gender needs and achieving GEWE, tackling all three gender policy objectives:

(1) economic empowerment to enable both rural women and men to participate in and benefit from profitable economic activities A strong emphasis was placed on strengthening the economic capacities of Indigenous Peoples' communities, particularly women and youth.

HESAD reported 169 business plans that benefited 2,414 people, 62% women and 53% youth. Survey data provided evidence that 76% of households that participated in business plans have increased their income, the women headed households reached also 76%, highlighting improved financial empowerment.

By providing grants targeted specifically for women entrepreneurs, the project has improved women's ownership and control over capital and business assets. Sewing and bakery business plans were particularly preferred by women, with 100% of these managed exclusively by them, while mixed groups primarily led poultry and agro-processing ventures. The most common business plan investments included poultry (36), cattle and sheep (34), crops and shade houses (25), and agro-processing (15). However, the completion mission noted a dropout from several investment groups, while many began with around 10 members, participation has since declined. Nonetheless, respondents in the endline survey reported that more than 90% remains operational. Past supervision missions noted that during implementation, several groups lacked training. For instance, sewing groups did not receive sewing training, bakeries required follow-up on nutrition aspects, and ecotourism groups had limited skills in business management, environmental practices, and tour guiding. Although the Guyana Tourism Authority assessed these groups, the approval of their training proposal by the PMU has been delayed, affecting their overall performance.

PCIPs covered aspects such as school feeding programmes, farming support, and renewable energy, reflecting women's priorities and demonstrating their active participation and empowerment.

Investments have been supported by 16 different technical trainings in areas such as agro-processing, packaging and labelling, business improvement, basic bakery skills, shadehouse management, apiculture, and quality control. These trainings aimed to improve income generation and ensure the sustainability of the investment plans.

The project contracted Blue Flames Women's Group and Mabaruma Premier Cocoa Growers (Region 1) to conduct training in finance, bookkeeping, monitoring and evaluation with the business beneficiaries including women-run businesses, which have an objective to strengthen women's technical as well as functional skills and further develop the women run businesses.

Overall, the project effectively supported women's access to and control over fundamental assets, both directly and indirectly. Through capacity development, awareness campaigns, and infrastructure investments, it enhanced women's knowledge, skills, and access to essential resources and services. Additionally, many women's groups were granted access to land through village councils, enabling the implementation of infrastructure to support their business activities.

According to endline survey data, women account for about 69 percent of individuals employed outside beneficiary groups, while young people aged 14–35 represent more than 40 percent of those employed, with young women forming the largest group among them. Nearly all employment generated through enterprises and community investments benefited Indigenous Peoples who account for 99.6 percent of those employed outside groups and more than 96 percent of enterprise co-managers.

(2) both women and men have equal voice and influence in rural institutions and organizations, including decision making processes at household, community or local level;

The project's Gender and Social Inclusion Specialist led capacity development and trained field staff and two individuals per community to act as gender focal points. Trainings covered gender-based violence, positive masculinities, women's leadership, and gender-sensitive planning, thereby strengthening community participation in planning processes. Field facilitators actively supported the organization of forums, conferences, and training sessions to promote women's and youth leadership, as well as social inclusion and gender awareness. These initiatives were implemented in Regions 1 and 9, and were expanded to piloted Regions 7 and 8, reaching a total of 791 female and male beneficiaries. Topics covered during the women and youth forums include (i) empowerment of indigenous women and youth through technical and life skills capacity building; (ii) women's and indigenous rights; (iii) environmental resources management; (iv) sustainable economic opportunities, (v) leadership and decision-making. Some of these capacity building and collaboration processes resulted in the creation of networks for women, such as the network of Mabaruma sub district and the Central Rupununi network. These engagement spaces continue to motivate women's participation, strengthening of women's collective, instrumental and intrinsic agency, and exploring issues related to gender, gender roles and workload, leadership and social inclusion

Many community-based planning processes took place during the COVID-19 emergency, which led to smaller groups being formed to plan project investments, typically composed of around ten members. Many participants were women and youth, including members of the village councils. The PMU noted that in some cases, male participation was low, as many men were occupied with work activities at the time of planning. The project put in place measures to facilitate the meaningful participation of women in planning processes, such as providing childcare support (linked to Pillar 3). Most frequent PCIP investments were public buildings including meeting spaces (46), roads and bridges (34), water ponds and tanks (19) and school kitchens and dining halls (12).

Actions were implemented in coordination with the Gender Affairs Bureau of the Ministry of Human Services and Social Security. HESAD has made significant efforts to ensure women's organizations are fully engaged, recognizing their strong linkages with beneficiaries, accountability, and community support. Key partners include the Wapichan Women's Movement in Region 9 (Deep South Rupununi), the Guyana Marine Conservation Society in Region 1, and the Kanuku Mountains Representative Community Group in Central Rupununi.

(3) more equitable balance in workloads and in the sharing of economic and social benefits between women and men.

The project implemented deliberate and practical measures to promote the meaningful participation and well-being of women. Recognizing the dual demands on women's time, childcare services were made available during community engagements, workshops, and other project-related events to ensure equitable participation. Furthermore, feminine care kits and breastfeeding support kits, as well as coordination with childcare services were provided to create a safe, comfortable, and inclusive environment for women participants, in particular young women assisting with their children. These actions facilitated women's active involvement and contributed to improving their overall well-being and reducing their workload.

Furthermore, the project supported balanced diet campaigns implemented at the community level by field facilitators trained by the Food Policy Unit, integrating local knowledge and promoting nutrition-sensitive agriculture. The Minimum Dietary Diversity for Women (MDD-W) indicator measured at project closure shows strong results: The share of women achieving the Minimum Dietary Diversity threshold reached 85.6% at endline. In Region 1 the proportion increased from 65.4% at baseline to 88.3% at endline, reflecting significant improvements in food consumption patterns.

The project also demonstrated strong cultural relevance by valuing Indigenous Peoples' food heritage and traditional knowledge. The planned launch of the Indigenous Recipe Booklet, developed with project beneficiaries and the Food Policy Unit, has not yet taken place; the PMU reports that the final review was ongoing at the time of the completion mission, with its launch expected by the end of 2025. As of April 2026, the recipe booklet was not finalized, nor launched yet. Regarding awareness and behavioral change on gender equality, the project implemented innovative outreach strategies, including street theatre performances and radio programs. These activities highlighted women's and men's roles and responsibilities in achieving a more equitable distribution of labor and benefits, fostering community dialogue and reflection on gender norms.

In terms of access to technology, some women expressed that this remained a limitation, noting the need for greater support in using digital tools to enhance their businesses.

Based on the combined analysis of the Simplified Resilience Index (SRI) and the Resilience Design and Monitoring Tool (RDMT) at endline, 80% of households experienced an increase in resilience between the baseline and endline surveys, indicating that the project successfully achieved its Development Objective indicator. Benefits were equally shared by female-headed households and male-headed households.

D.4. Climate change adaptation

The quality of the implementation of the project's climate change adaptation interventions is **rated as Moderately satisfactory**. The project was one of the early users of the IFAD Resilience Design and Monitoring Tool (RDMT) facilitating that adaptation interventions were well articulated and monitored and achieving more than 50% implementation of planned interventions. In particular, infrastructure supporting climate adaptation and resilience was implemented as planned in PCIPs and BPs such as:

- bridges, roads, and boat landing sites ensuring connectivity to markets, schools and health care facilities during floods for more than 4,600 people;
- village council production businesses increasing the food produced and sold locally, important in times of floods reducing mobility, and generating much-needed income for the Village Funds which are used for reinvestments in the production activities or for public services provided by the council including funds to support families in case of emergencies;
- livestock corals and pens on high grounds reducing exposure to floods, shade houses on high grounds reducing exposure to floods and extreme heat;
- water harvesting and irrigation ensuring access to water during dry seasons (more than 125 water storage tanks were installed, providing access to water for 5 school kitchens, 6 community bakeries/shops and 2 sanitary blocks, 5 crops cultivation plots, 8 poultry rearing facilities, 2 agro-processing facilities and households used by at least 950 people).

Some training led to limited adoption of climate resilient practices by 33% of farmers participating in crop related BP groups (crop production and processing as well as mixed farming). The operational shortcomings for the limited training and adoption were related to conditions outside of the control of the PMU such as lack of greenlight for hiring of service providers from the National Procurement Board and impossibility of concluding MoUs with NAREI, GLDA, and GMC.

During the course of the project, the RDMT was used to discuss risk vulnerabilities and resilience enhancing interventions related to the different types of BPs and PCIPs as well as for monitoring households' adoption of resilience building interventions and the resulting outcome in terms of household resilience. This was done through the baseline, midline and endline surveys also monitoring households' exposure to and impacts from climate events. The endline survey confirmed that

households in the project areas remain highly exposed to climate-related shocks. A large share of respondents reported experiencing prolonged dry spells, floods, and other climate stresses during the previous two years. These findings highlight the relevance of the HESAD design focusing on resilience in its development objective and the continued importance of strengthening climate resilience in agricultural production systems and rural livelihoods in the hinterland regions.

Against this challenging risk environment, the resilience analysis comparing midline and endline data shows clear evidence of progress. Using the RDMT resilience adoption and results indices and the Simplified Resilience Index (SRI), the analysis found that household resilience improved substantially with 80% of households experiencing an increase in resilience between the midline and endline surveys. The distributional analysis further indicates that improvements were widespread across the population and particularly pronounced among more vulnerable households.

The resilience trajectory tracked over time between the baseline, mid-term/outcome and endline survey shows a temporary deterioration at midline, followed by a strong recovery and improvement by endline. The midline survey was conducted in the aftermath of the COVID-19 pandemic and associated economic disruptions, which likely contributed to the temporary decline observed during that period. By endline, however, resilience levels had not only recovered but exceeded baseline levels for the majority of households, indicating that the project interventions contributed to strengthening households' ability to manage risks and adapt to shocks. Moreover, the data show a reduced severity of impacts from some types of climate events. For long dry seasons and floods, the share of households reporting high severity impacts appears to decline at endline compared to the mid-term, while the proportion reporting moderate impacts increases. This pattern indicates that, although these hazards continue to affect a large number of households, their perceived intensity has decreased over time. Furthermore, comparing the endline with the mid-term data, there was a substantial increase in the share of households reporting no climate-related losses for their crop or livestock production. While only 14% of crop producing households had reported "No losses" at midline, at endline this percentage had increased to 35.6% (32.6% in Region 1, and 37.6% in Region 9). A similar trend was observed for livestock, for which the percentage of no losses at midline was 39.8%, while at endline it had increased to 54% (51.4% in Region 1, and 56.5% in Region 9). Notwithstanding these improvements, climate-related losses of more than 50% of the production were still reported by 10% of livestock raising households, and 30.8% of crop producing households.

The RDMT analysis further suggests that the project was particularly successful in promoting adoption of the resilience-enhancing practices: participation in producer groups; diversification of livelihoods; improved nutrition practices; and investments in infrastructure that reduce climate risks. While some resilience outcomes may take longer to fully materialize, the evidence indicates that the project succeeded in establishing the foundations for sustained resilience improvements.

Importantly, the resilience benefits, as assessed through the RDMT, were equally shared by female-headed and male-headed households. At the same time, households that declared having benefited from both BPs and PCIPs consistently achieve higher scores across the RDMT adoption, and results, indices compared to households supported only through PCIPs. This gap is particularly pronounced for the adoption dimension but remains clearly visible for results, indicating that the combination of productive investments and community-level infrastructure creates reinforcing effects that enhance households' capacity to adopt improved practices and translate them into resilience outcomes. As such the combination generates both immediate improvements in practice uptake and stronger medium-term resilience outcomes. Overall, the RDMT resilience index reaches approximately 0.53 among households benefiting from both BP and PCIP, compared to roughly 0.45 among households supported only through PCIP. This difference points to strong complementarities when PCIP and BP interventions are aligned generating important leverage effects amplifying the effectiveness of both interventions.

Nevertheless, the findings also point to several challenges and areas where progress was more limited. Adoption of climate-smart and adaptive agricultural practices remained low, suggesting that knowledge, technical or investment barriers continue to constrain uptake. In addition, while economic activities supported by the project generated important benefits, the scale of income improvements remains modest due to the structural constraints faced by hinterland economies, including limited market access and high transport costs.

HESAD contributed to the Guyana National Determined Contribution (NDC) that prioritises the forestry sector for climate change mitigation and the agricultural sector for adaptation. HESAD contributed to the NDC priorities: Upgrading infrastructure and other assets to protect against flooding, and Hinterland Adaptation Measures. Through the purchase and installation of meteorological stations HESAD also contributed to the NDC priorities of Development and implementation of Early Warning Systems, and Enhanced weather forecasting including microclimate studies and localized forecasting.

D.5. Environment and natural resource management

The project is rated as **moderately satisfactory** in terms of achieved improvement in the environment or the natural resource base in the project target area. With the project area being thinly populated, pressures on the natural resources base are low. Limited training in integrated pest management reducing the use of pesticides as well as soil improving practices led to that 33% of crop producing farmers participating in the project shifted to less harmful agricultural practices. The project only invested in small-scale infrastructure mostly using local wood materials and high-standard environmental norms were followed for most project activities with no negative impact on the environment.

Environment and natural resources management was part of the format for BPs and PCIPs, including an annex checklist for environment and natural resources management (NRM) risks, and as such mainstreamed into the planned investments upstream. During missions, the IFAD NRM expert also had technical sessions with the HESAD's technical team and developed and kept updated a support tool for their work with the project participants detailing adaptation and resilience building actions as well as NRM and environmental activities by PCIP and BP plan type.

The indigenous villages participating in HESAD have traditionally managed their NR through their own governance systems, and restoration needs are in general low. However, the increasing challenges from climate change and engagement in new livelihood activities require new knowledge and practices and some risks and opportunities could have been addressed at broader scale. While there were no negative environmental impacts, the project missed the opportunity for training at scale and follow up on adoption of integrated pest and soil fertility management, and rangeland and water management. This was a consequence of the late start of investments in PCIPs and PBs and conditions outside of the control of the PMU such as lack of greenlight for hiring of service providers from the National Procurement Board and impossibility of concluding MoUs with NAREI, GLDA, and GMC to provide such training and follow up.

D.6. Social, Environment, and Climate Risks/Impact and Mitigation

At design, the 2017 SECAP was in place and the project was identified as **Category B**. It recognized the high levels of poverty and vulnerability in the Rupununi, particularly among Indigenous Peoples' communities. It identified challenges such as remoteness, weak market linkages, limited access to finance and energy, low technical capacity, high vulnerability to climate change, and the need to balance livelihood improvement with cultural preservation and environmental integrity. During implementation, Environmental and Climate safeguards were effectively applied. As the main instrument in implementing the ESMP, the BPs and PCIPs formats had an annex checklist for environment and natural resources management (NRM) risks ensuring that mitigation measures were mainstreamed into the planned investments upstream. When the concrete plans had been designed and started implementation in 2022 a matrix was developed with concrete measures for each approved plan type to improve environment, NRM and climate resilience aspects as another important instrument supporting the HESAD technical team in implementing the ESMP.

As the project area is thinly populated with low pressure on natural resources traditionally managed and conserved through indigenous governance systems, and as investments were small-scale and mainly based on local resources, risks were low and effectively managed. The infrastructure implemented through BP and PCIP supported climate adaptation and resilience (see the Climate Change Adaptation section). Even though the project did not have adverse environmental impacts and managed to substantially improve household resilience with 80% of households experiencing an increase in resilience between the midline and endline surveys, environmental, NRM and climate resilient practices could have been implemented at broader scale (see the Climate Change Adaptation section, and the Environment and NRM Section).

Likewise, during implementation, social safeguards were effectively applied through participatory planning and free, prior, and informed consent (FPIC) processes, which ensured broad community ownership of project activities. Village Councils played a central role in decision-making, financial management, and oversight, with targeted training provided to strengthen their capacity in administration, procurement, and safeguards. The project promoted the active participation of women and youth, with several productive activities led by these groups. Cultural practices and traditional governance systems were respected throughout, and community dialogue served as the main mechanism for grievance resolution.

Overall, HESAD contributed to enhanced social cohesion, empowerment, and institutional capacity within Amerindian communities. The participatory and culturally sensitive approach strengthened trust in local governance structures and increased the confidence of community leaders—particularly women and youth—to engage in local development processes. While logistical challenges and limited technical capacities continued to constrain the expansion of some enterprises, the project established a solid foundation for inclusive and sustainable rural development in the Rupununi. Social safeguard performance is therefore assessed as satisfactory, with good alignment to IFAD's Indigenous Peoples Policy and tangible improvements in participatory governance and social inclusion.

The activities implemented under HESAD were of limited scale, site-specific, and reversible. No interventions took place in protected areas, natural forests, wetlands, or other environmentally sensitive zones, as confirmed through field supervision and environmental screening.

Potential negative social impacts were largely mitigated through participatory planning processes at the community level, which enabled the early identification and management of risks. The project's demand-driven approach—anchored in Community Development Plans—ensured that local priorities guided subproject

selection, reducing the likelihood of unintended adverse effects. Furthermore, complementary training and awareness activities strengthened local capacities for environmental stewardship and social inclusion.

Complementary awareness-raising and training activities on healthy family diets, including street theatre performances and radio dramas, further strengthened the project's impact on food and nutrition security. These culturally adapted communication tools proved effective in reaching a wide audience, stimulating discussion, and reinforcing key messages on healthy eating and the use of locally available, nutrient-rich foods. Training sessions emphasized the value of traditional food practices and Indigenous Peoples' knowledge, developing an indigenous peoples' recipes cookbook which is still to be published. Encouraging communities to preserve and diversify their diets using local crops and ingredients.

D.7. Targeting and outreach

The project's **targeting strategy** combined direct targeting and self-targeting approaches guided by defined household profiles prioritizing the poorest and most vulnerable groups. Community Targeting Plans (CTPs) incorporated youth-focused skills development and vocational training. Business plans that demonstrated meaningful participation of youth, women and vulnerable households were prioritized for support.

Geographical targeting: The project envisaged its implementation in regions 1 and 9. These regions accounted for approximately 6.8% of the national population at the time of project design, both characterized by geographic isolation, limited market access and a high dependence on natural resources. In Region 1 (Barima–Waini), communities are widely dispersed along riverbanks, resulting in weak connectivity and predominantly subsistence livelihoods based on small-scale farming, fishing and craft production. Region 9 (Upper Takutu–Upper Essequibo) shows a comparatively higher sex ratio—more men than women—relative to the Coastland regions. Together, these demographic and spatial characteristics shape specific vulnerabilities, including labour constraints, reduced access to services and limited livelihood opportunities for women and youth.

As part of the Project's request for an extension, the Government requested that HESAD pilot a total of four community projects in Regions 7 & 8. This constitutes a key step taken by the ministry in charge of agriculture for institutionalising the HESAD approach to working with Hinterland Indigenous Peoples' communities.

General outreach: The project planned a total outreach of 8,000 poor rural households at design, equivalent to 94% of all poor households in the project area, 15% of the target households were intended to be female headed. At completion, the project reported to have reached 10,729 households, 1,238 of which were women-headed-households (12%). The total number of direct and indirect beneficiaries was estimated at 38,400 people at design, reporting a total of 49,783 people at completion.

Given the time of its design the project did not prioritize any of the mainstreaming themes, however a strong focus was placed on Indigenous Peoples, women and youth:

Women: The project reports that 49% of the total outreach were women. The project directly benefitted: 4,289 women in production activities (group or individual) with established business plans. These results reflect the impact of targeted engagement efforts, which supported the participation of women through a social inclusion strategy that facilitated their meaningful involvement.

Youth: The project reports that 39% of the total outreach were youth (15–44 years). The Project directly benefitted 3,414 youth, and considering indirect beneficiaries, it has reached 19,193 young people.

Indigenous Peoples: At design 75% of the project beneficiaries were planned to be from Amerindian Peoples, at completion this percentage reached 97%. Social safeguards were effectively applied through participatory planning and free, prior, and informed consent (FPIC) processes, which ensured broad community ownership of project activities. Village Councils played a central role in decision-making, financial management, and oversight, with targeted training provided to strengthen their capacity in administration, procurement, and safeguards.

D.8. Innovation

Street Theater & Radio Serial Drama. The project introduced an innovative, culturally adapted communication approach to drive engagement and behavioral change. By using street theatre and radio programs, it effectively reached youth and wider communities through accessible and locally relevant channels. These tools promoted gender equality by encouraging dialogue on shared roles and responsibilities, while also raising awareness on healthy diets and nutrition. The project combined creative media with training on traditional food practices and Indigenous Peoples' knowledge, including the development of a recipe cookbook. With this approach the project reinforced the use of local, nutrient-rich foods and allowed stimulating community reflection representing a key innovation of the project.

Multi-stakeholder evaluation panel HESAD pioneered the use of multi-stakeholder evaluation panels (one per region) within the operations of the Grant Investment Fund (GIF). The panels included representatives from the local private sector, NGO, Indigenous Peoples Organizations (IPO) and local government. HESAD provided resources that allowed Panel members to visit project sites, pre- and post evaluation, but there was limited uptake. Challenges: pressure to approve plans, tied to IFAD-MoA performance targets for continued financing established during the 2020 restructuring process. Number of projects likely overwhelmed the capacity of the panel to effectively review, respond, and approve. Capacity of the system to channel feedback from the panel back to community-based applicants.

However, some aspects of the GIF represent meaningful innovations compared to previous grant-mechanisms in the hinterland and are being replicated by other projects. The GIF localized its Evaluation Panels to each region, and constituted it from a mix of private sector, government and non-governmental organizations with intimate knowledge of the local context, and the capacity to identify synergies between HESAD-financed projects and other initiatives in the region.

Planning grants. The 2020 restructuring of HESAD introduced a small (max US\$500, ~1/20th to 1/50th of the value of BPs and PCIPs respectively) planning grant to GIF applicants to support access information and technical experts during the design and preparation of their substantive grant applications. The planning grant was never implemented, mainly because performance targets agreed by IFAD-MoA post restructuring, left no time for their disbursement.

Impoldering. In low-lying flood prone areas of Region-1, HESAD supported the introduction of large scale impoldering of farmlands using excavators. The use of excavators effectively doubled the efficiency; the community of St. Dominic's with support from HESAD initially impoldered 53 acres by hand at a cost of G\$5M, while the community of Three Brothers used their G\$5M HESAD PCIP grant to cover the operational cost of an excavator, impoldering 108 acres of farmland. In 2024-2025 state agencies adopted the use of excavators to impolder 72 acres of farmland, while MoA agencies have allocated resources for 2026 to impolder an additional 300 acres.

Direct community procurement. The Procurement Act 2003 created the possibility of Procurement through Community Participation "in circumstances where procurement is conducted in poor remote communities, where the competitive procedures described in this Act are not feasible." Commonly referred to as "Community Participation" this procurement avenue, with a ceiling of G\$5M presented a little used opportunity to directly contract community-based organizations, Village Councils and CDCs, to execute works in their communities. In 2025 the Ministry for the first time, sought a waiver the NPTAB to expand the Community Participation ceiling from G\$5M to G\$30M.

D.9. Scaling up

The scaling up of elements of instruments, solutions and approaches introduced by HESAD is already happening and rated as **satisfactory**. Development partners have in particular taken up the following instruments and approaches backed up by tangible funds already committed.

HESAD's successful beekeeping project in Nappi Village, and the launch of the NaBee brand by a group of community beekeepers, has drawn attention to beekeeping as a conservation-compatible livelihood strategy for communities bordering the Kanuku Mountains Protected Area in Region 9. Starting in 2025, WWF Guyana has committed US\$551,000 to support a scale up beekeeping in select Kanuku Mountain communities, Nappi included. In 2024 the Government of Guyana declared apiculture a priority value chain, with investments of G\$150M in 2024, G\$225M in 2025 and projected investment in the sector of G\$140M in 2026.

Conservation International -Guyana has leveraged insights from their involvement in HESAD's GIF innovative Evaluation Panel to develop their NODE mechanism for community financing. NODE is a finance and technical assistance mechanism for Indigenous People and Local Communities (IPLCs) providing financing and capacity building supporting these communities in initiatives to conserve their natural resources and improve their livelihoods. CI-Guyana is currently piloting the mechanism in Regions 1 & 9. NODE has used HESAD's grant proposal templates and feedback from HESAD grantees to refine its grant making process.

Central feedback from applicants to the HESAD GIF was the need for early and sustained access to technical assistance. Building on this, NODE has integrated a dedicated Technical Assistance Facility that parallels the grant making process. Several community representatives attending HESAD's close-out workshops in Mabaruma and Lethem have indicated that they now apply the project management tools introduced by HESAD to other projects including their LCDS grants. LCDS grants to Indigenous communities exceeded US\$22M in 2023, financing more than 1,200 community projects. Closer collaboration between the Office of Climate Change, the MoAA and the PMU in these closing stages of the HESAD project could transfer valuable lessons from HESAD to the management of LCDS grants.

E. Assessment of project efficiency

The **project's efficiency** in delivering results in an economic and timely manner is rated as **moderately unsatisfactory**. Initial assumptions regarding financial execution and implementation pace proved insufficiently robust: both execution and beneficiary onboarding were heavily concentrated in the later years, and the number of Business Plan (BP) beneficiaries (the project's main pathway for income generation) fell significantly short of expectations. As a result, economic benefit flows were substantially delayed and reduced compared to design projections. This led to a marked decline in key economic performance indicators relative to the ex-ante EFA and resulted in a negative IRR and NPV values if the same discount period used for the ex-ante analysis is applied ex-post.

However, the ex-ante EFA was performed with a 10-years' time horizon, that is the minimum discount period advised by the IFAD EFA Guidelines (Vol. 2, page 35) and only for project focused on crop enhancement through better inputs. Given that HESAD included investments with longer gestation periods (such as infrastructure and livestock development) a 15-year time horizon was considered more appropriate for the ex-post EFA. This allows for a more meaningful assessment of economic performance while maintaining a degree of comparability with ex-ante projections, as 15 years represents a midpoint between the 10-year period used ex-ante and the 20-year horizon recommended by IFAD guidelines. Moreover, in hindsight, a 10-year discount period is considered not in line with the complex realities of the Guyana Hinterland and the analysis is excessively influenced by the actual implementation difficulties experienced in the initial years by the HESAD project, that was eventually able to accelerate the rate of investment and funds utilization between 2021 and 2023.

With a 15 years discount period, the ex-post EFA based on actual project data yields positive economic performance indicators with an IRR of 19.5% (above the 5% social discount rate utilized for the ex-post analysis), an ENPV of USD 5.35 million and a BCR of 1.69 (see below and Appendix 6 for details). It is also noted that, when the analysis is conducted over a 13-year discount period (that is, reflecting 10 years of benefit flows following the initial project investments in BP and PCIPs, and thus more in line with the benefits accounting period used for the ex-ante EFA under the assumption of beneficiaries enrollment starting in PY2), the indicators remain positive with an IRR of 15.1%, an ENPV of USD 2.8 million and a BCR of 1.4.

Although the ex-post results are below the ex-ante estimates (IRR 21.0%, ENPV USD 6.97 million, BCR 2.01) and reflect the effects of implementation delays and lower-than-expected BP outreach, they nonetheless indicate that the project was, overall, a worthwhile investment. It should also be considered that a significant part of the benefits from collective project investment in PCIPs could not be monetized due to lack of mechanisms to capture and value, for example, the long-term health and human capital benefits linked to improved nutrition. Thus, the economic results mainly reflect the incremental benefit flows from BP, and only part of the resilience-enhancing effects from PCIP interventions (as captured by the RDMT increase) were estimated through a conservative valuation of incremental benefits from reduced crop and livestock losses. In light of this, and of the moderately satisfactory rating provided below for disbursement performance and financial management, the overall rating for project efficiency is considered moderately unsatisfactory.

E.1. Project costs and financing

1. Project costs

The total allocation for the HESAD project amounted to approximately USD 11.15 million, of which about USD 10.94 million (98%) was executed by project completion. While the overall disbursement rate appears high, this largely reflects downward adjustments and reprogramming during implementation rather than accurate initial costing.

A comparison between design estimates and actual expenditure suggests that financial projections at design were not sufficiently robust. Significant reallocations across years and financing sources, together with uneven annual expenditure patterns, indicate that initial cost assumptions did not adequately reflect implementation realities, absorption capacity, or sequencing of activities.

Execution was heavily concentrated in later years, with a sharp increase in disbursement between 2021 and 2023, following relatively low levels of expenditure in earlier years. This pattern points to delays in start-up and weak early financial planning, requiring subsequent acceleration to utilize available funds.

Although funds were ultimately utilized at a high rate, this outcome is less indicative of strong upfront planning and more the result of adaptive implementation and corrective financial management measures during the project lifecycle. Overall, the project achieved high financial absorption, but the quality of cost estimation at design stage can be considered weak, as evidenced by the need for adjustments and the mismatch between planned and actual expenditure profiles.

1. Disbursement by financier

Disbursement performance is assessed as **moderately satisfactory**, with total project execution reaching approximately USD 10.94 million, equivalent to 98 % of the total approved financing of USD 11.15 million.

At completion, the composition of financing shows some variation compared to design expectations, although overall mobilization of resources was largely successful.

IFAD financing was almost fully disbursed, reaching close to 100 % of its allocation, reflecting adaptive and efficient use of loan resources.

Government of Guyana (GoG) counterpart funding reached approximately 83 % of the approved amount, which is considered acceptable and demonstrates a solid level of commitment and contribution to project implementation. While slightly below full execution, this level of performance remains within reasonable expectations for counterpart funding.

Beneficiary contributions exceeded initial design targets, indicating strong ownership and demand for project-supported investments. This suggests that the project may have underestimated beneficiary capacity to co-finance activities at design stage.

Other financing sources, including grant resources, show comparatively lower execution rates, reflecting implementation dynamics and possible reallocations over the project lifecycle.

Overall, while total disbursement closely matches approved financing, the relative composition of funding at completion differs moderately from appraisal assumptions, particularly due to higher-than-expected beneficiary contributions. This reflects both adaptive implementation and some limitations in the accuracy of initial financing projections.

Annual expenditures by financier and by year (in USD)

	IFR Q3 2025	FA & PR	Amended FA and IFR Q3 2025	
Financier	Executed	Approved (Original)	Approved (Updated)	%
IFAD Loan 2000001704	7 957 474	7 960 000	7 960 000	100%
IFAD Grant 2000001705	352 642	500 000	500 000	71%
Government	2 018 219	2 430 000	2 426 000	83%
Beneficiaries	612 808	265 000	265 000	231%
TOTAL	10 941 143	11 155 000	11 151 000	98%

1. Disbursement by component

Expenditure across components shows divergent execution patterns between IFAD loan and IFAD grant resources, with overall execution reaching almost full utilization under the IFAD loan (USD 7.96 million, ~100%), while the IFAD grant reached 71 % execution (USD 0.35 million out of USD 0.50 million).

IFAD Loan: Under the IFAD loan, total expenditure reached USD 7.96 million out of USD 7.96 million approved, reflecting full utilization of available resources.

However, execution across components was uneven:

Component 1 – Strengthening of Community and Producer Groups: Execution remained significantly below allocation, indicating underutilization. This suggests that capacity-building and institutional strengthening activities were slower than anticipated or deprioritized during implementation.

Component 2 – Implementation of Investment Plans: This component absorbed the largest share of resources and exceeded its initial allocation, reflecting strong demand for productive investments and a strategic shift toward financing subprojects.

Component 3 – Project Management and Coordination: Execution was broadly in line with planned allocations, indicating stable and consistent support to implementation, despite successive project extensions. Overall, under the loan, internal reallocations allowed the project to compensate for weaker performance in Component 1 by scaling up Component 2, ensuring full absorption of funds.

Annual expenditures (Loan) by component and year (in USD)

	IFR Q3 2025	IFR Q3 2025	Amended FA and IFR Q3 2025	
Components	Executed	Approved (Original)	Approved (Updated)	%
Component 1 - Strengthening of C & PG	1 083 842	2 150 000	2 695 000	40%
Component 2 - Imp of Investment Plans	5 486 883	4 755 000	3 941 000	139%
Component 3 - Project Management & Coordination	1 386 750	1 055 000	1 324 000	105%
Total	7 957 474	7 960 000	7 960 000	100%

IFAD Grant: Under the IFAD grant, total execution reached USD 352,642 out of USD 500,000 (71%), indicating partial utilization of available resources.

Component 1 – Strengthening of Community and Producer Groups: Execution was limited, suggesting implementation constraints in grant-funded capacity-building activities.

Component 3 – Project Management and Coordination: Expenditures were relatively stable, in line with operational support needs.

The lower execution of the grant compared to the loan suggests that grant-funded activities faced greater implementation challenges, possibly due to their softer nature (capacity building, technical assistance) and weaker prioritization relative to investment-driven activities.

Annual expenditures (Grant) by component and year (in USD)

	IFR Q3 2025	IFR Q3 2025	Amended FA and IFR Q3 2025	
Componentes	Executed	Approved (Original)	Approved (Updated)	%
Component 1 - Strengthening of C & PG	206 227	247 000	247 000	83%
Component 2 - Imp of Investment Plans	-	-	-	-
Component 3 - Project Management & Coordination	146 415	253 000	253 000	58%
Total	352 642	500 000	500 000	71%

While IFAD loan resources were fully utilized through adaptive reallocation, the grant component shows moderate underperformance, highlighting differences in execution capacity across types of interventions.

The overall pattern confirms a shift in implementation focus on investment activities, with capacity-building components comparatively under-implemented.

1. Financial management

Financial management is assessed as **moderately satisfactory**. The project's financial management arrangements, overseen by the ASDU Finance Section in coordination with the HESAD Finance Officer, provided a functional and reliable framework to support implementation. Collaboration between the project and institutional finance teams contributed to maintaining continuity in financial operations and ensuring that funds were available when needed.

The project demonstrated strong performance in funds flow and disbursement, with no significant delays in the release of IFAD or counterpart funding. This facilitated steady implementation and ultimately contributed to the high overall financial execution rate achieved at completion.

Budgeting processes were conducted collaboratively and allowed the project to adapt annual plans in response to implementation realities, ensuring alignment between available resources and evolving priorities. While some revisions and delays were encountered, these adjustments reflect an adaptive management approach rather than structural weaknesses.

Financial reporting improved over time, with quarterly Interim Financial Reports (IFRs) being produced and a Chart of Accounts appropriately structured to support project needs. Audit processes were conducted regularly, providing continued oversight and transparency, and overall financial documentation was maintained at an acceptable standard.

At the same time, some areas presented opportunities for further strengthening. In particular, enhancing internal control systems, further systematizing the recording of beneficiary contributions, and reinforcing financial accountability mechanisms at community level would have improved overall efficiency and robustness.

Additionally, more explicit alignment with international accounting standards (IPSAS cash basis) could further strengthen compliance.

Overall, the project maintained effective financial management systems that supported implementation and enabled high levels of fund utilization, while some efficiency and control-related improvements remain necessary. These factors justify a moderately satisfactory rating, reflecting solid performance with scope for strengthening in key areas.

E.2. Timeliness

HESAD's high disbursement rate was achieved largely through budget adjustments and reallocations during implementation, as initial cost estimates were not accurate. Significant shifts in funding across years and sources, along with uneven spending patterns, indicate weaknesses in the original financial planning and wrong assumptions about implementation capacity and activity sequencing. Expenditure was also heavily concentrated in the final years (2021–2023), pointing to start-up delays and weak early financial management that required accelerated spending later to fully utilize available resources.

At start-up, there were significant delays in contracting the combined SOFA and baseline study for Region 1 and the MoA opted for doing the value chain study in-house which did not lead to the formation of value chain round tables or concrete investment recommendations. In 2020 the project was also held back by the restrictions introduced under the COVID pandemic.

After four years of project life, considering the insignificant progress in implementation both at output and outcome levels and the extremely low disbursement rate, IFAD and the GoG agreed to restructure the project in 2020. The restructured project, approved in October 2020, maintained the original development objective and targeting, but reduced logframe targets, and moved the management of the GIF into the ASDU. The restructuring effectively kicked off the implementation. However, the quality of the support to the communities was adversely affected by difficulties in hiring qualified field facilitators and the inability of the project to sign MoUs with the Guyana Marketing Corporation (GMC), the National Agricultural Research, and Extension Institute (NAREI), and the Guyana Livestock Development Authority (GLDA) of the MoA to deliver training and capacity building to the business groups.

The MTR mission, held in October 2021 acknowledged a significant improvement in project performance, laying the groundwork for consideration of an extension of the project. The November 2022 supervision mission established that the criteria for an extension of the project had been met, and in December 2022, IFAD approved a 12-month extension of the project, as well as an increase in logframe targets, the incorporation of regions 7 and 8 and a reallocation among budget categories.

In 2023 an additional 6 month extension was given to allow for an orderly wind-down of the project and to ensure sustainability of investments.

E.3. Key indicators from Economic and Financial Analysis and Value for Money analysis

This section summarizes the key findings from the ex-post economic and financial analysis (EFA) and Value for Money (VfM) assessment of the HESAD project. The analysis evaluates the project's economic performance based on observed results and compares them with the assumptions made at design, while identifying key drivers, constraints, and lessons for future interventions in Guyana's hinterland areas.

In line with IFAD EFA guidelines, the analysis is *primarily ex-post*, combining observed data on costs, outputs, and outcomes with forward-looking assumptions where benefit flows are expected to continue beyond project completion. This approach is particularly relevant for the HESAD project given that, as explained above, most investments under Business Plans (BPs) and Public and Collective Investment Plans (PCIPs) were implemented later than initially planned, resulting in delayed benefit flows.

The analysis is based on the triangulation of multiple data sources, including project M&E data, BP and PCIP dashboards, endline survey results, and 30 in-depth interviews with selected BP beneficiary groups that were performed partly during the endline survey and partly during the project completion mission. The in-depth interviews covered a significant share of the 168 BPs financed by HESAD (about 20% of the implemented plans), thus offering a valid basis to extrapolate (jointly

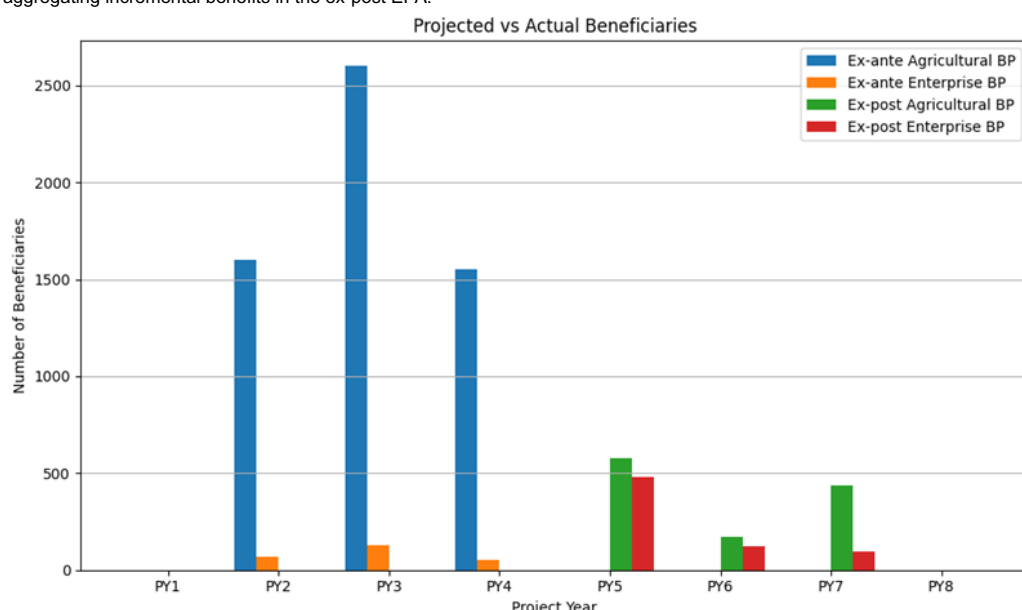
with other data) the financial economic results of project investments. The quantitative data were complemented by field observations and qualitative evidence collected during the completion mission to ensure a robust and comprehensive assessment.

Overview of the main changes compared to the ex-ante EFA Before presenting the results, it is useful to summarize the main changes in key parameters, as well as in the selection of models adopted for the ex-post analyses compared to the ex-ante EFA. There were in fact major deviations between ex-ante assumptions and actual implementation, primarily driven by delays in investment, reduced outreach, and lower effective realization of benefits.

At design, the ex-ante EFA assumed rapid implementation, with beneficiary onboarding starting in PY2 and largely completed by PY4, in particular reaching 6,000 households under Business Plans (BPs). In contrast, actual implementation was significantly delayed, with BP investments only scaling up from PY5 onwards, implying a delay of approximately three years in the onset of benefit generation. This delay translated into a markedly different onboarding profile: instead of early and front-loaded benefit flows, both investments and benefits were concentrated in the latter half of the project lifecycle. In addition to timing, outreach was substantially lower than expected. The total number of BP beneficiaries reached 2,414 households, compared to the 6,000 planned (around 40% of target). Figure 1 clearly illustrates both the delay in onboarding and the sharp reduction in total beneficiaries, highlighting their combined effect on the timing and magnitude of benefit flows.

A further key adjustment in the ex-post EFA concerns the difference between nominal participation and actual realization of benefits. In the ex-ante analysis, the estimation of aggregate project net incremental benefits was based on the "aggregate production of the 5,750 rural households and 25 enterprises that will be supported by the project" (PDR Annex 10, paragraph 60). However, endline data show that only 76.1% of participants reported increased incomes. This indicates that not all registered beneficiaries translated participation into effective economic gains. Evidence from interviews and field observations confirms that this gap is mainly due to underperforming or non-viable business plans (e.g. poultry activities constrained by high input costs), and to partial or declining participation of group members over time.

To reflect these realities, beneficiary numbers were conservatively adjusted downward to account for effective benefit realization. As a result, the number of households considered as actually benefiting from BP interventions is estimated at 1,890 (about 31.5% of the 6,000 initially projected) which forms the basis for aggregating incremental benefits in the ex-post EFA.



16. Figure 1: Projected vs actual BP beneficiaries

17. **Financial Analysis.** The ex-post financial analysis confirms that the business models supported under HESAD are, in general, financially viable at both farm and enterprise levels, generating positive incremental net benefits for participating beneficiaries. The analysis was conducted using representative farm and enterprise models, with results expressed at market prices and evaluated over a 10-year horizon at a 14 % discount rate, consistent with the assumptions used at design. The ex-post results are presented in Table X below.

18. Table 1 Results of the ex-post financial analysis for farm and enterprise models

FARM MODELS		Benefit (US\$ / year)			FIRR	FNPV 10yrs @14%
		Without project	With project (*)	Diff.		
Model A	Cattle - cassava production	736	2 539	1 803	120%	5 574
Model B	Ginger - cassava production	2 820	8 168	5 347	n / a	24 398
Model C	Poultry - cassava production	288	1 023	736	78%	2 276
Model D	Sheep - shadehouse production	266	681	415	78%	1 317
Model E	Purple potato - cassava production	288	813	525	244%	2 090

ENTERPRISE MODELS		Benefit (US\$ / year)			FIRR	FNPV 10yrs @14%
		Without project	With project	Diff.		
Model F	Cassava processing	-	34 268	34 268	88%	51 329
Model G	Peanut butter	-	1 174	1 174	25%	1 424

The analysis is based on a set of seven representative farm and enterprise models constructed to reflect the actual types of Business Plans (BPs) implemented and the production systems observed during fieldwork. Five farm models were developed by combining crop and livestock activities commonly reported by beneficiaries:

(i) cattle–cassava; (ii) ginger–cassava; (iii) poultry–cassava; (iv) sheep–shadehouse vegetables–cassava; and (v) purple potato–cassava. Cassava was included in all models as a core staple activity, reflecting its central role in both subsistence and commercialization, as well as to capture incremental benefits from the project-induced expansion of cultivated areas. Two enterprise models were also developed, focusing on agroprocessing activities: cassava processing and peanut butter production, selected as representative of the most widespread off-farm BPs.

A differentiated modelling approach was adopted to reflect the organization of production systems. Activities based on shared infrastructure and collective management (e.g. poultry, sheep, and shadehouse production) were modelled at group level, with per-capita benefits subsequently derived. In contrast, individually managed activities (e.g. cassava, ginger, purple potato) were modelled at the level of individual production units to better capture variations in scale, input use, and returns across beneficiaries. A similar approach was preferred for cattle production since, although activities were often organized under BP groups and Village Councils, there was substantial variation in herd size and the number of participants across groups. Enterprise models were estimated at group level to reflect collective investment and revenue generation; per-capita net incremental benefits were subsequently derived for the EFA incremental benefits aggregations based on the number of active BP participants.

Comparison with ex-ante results shows that financial performance at the model level has generally been maintained or improved. For the cassava–cattle model, for example, the FIRR was rather similar to that estimated at design (120% ex-post vs 101% ex-ante), while the ex-post FNPV rose from USD 1,436 to USD 5,574. Similarly, cassava processing shows a substantial increase, with FNPV raising from USD 17,473 at appraisal to USD 51,329 ex-post.

These results suggest that, while the number of active BP beneficiaries was lower than initially projected, the magnitude of benefits per beneficiary or per production unit was higher than anticipated. Overall, the analysis thus indicates that the reduction in beneficiary numbers has been at least partially offset by higher-than-anticipated returns, resulting in robust financial performance across the main assessed production and enterprise models.

Economic analysis. The ex-post economic analysis confirms that HESAD represents a worthwhile investment, although results are lower than estimated ex-ante due to implementation delays and reduced BP beneficiaries. The analysis was conducted in accordance with IFAD's Economic and Financial Analysis Guidelines, using a domestic numeraire approach and converting financial values into economic prices to reflect the opportunity cost of resources (details are presented in Annex 6). Economic performance was assessed through the Economic Internal Rate of Return (EIRR), Economic Net Present Value (ENPV), and Benefit-Cost Ratio (BCR), derived from the stream of incremental net benefits aggregated across beneficiaries based on the observed phasing.

The analysis builds on the farm and enterprise models used for the financial analysis, whose results were converted into economic values through the application of shadow prices and conversion factors. In addition, the economic analysis incorporates a conservative estimate of resilience-related benefits associated with PCIPs, which are not fully captured in the production models. These benefits were approximated using an "avoided agricultural production losses" approach applied to households not covered by the BP models. The estimation is based on endline survey evidence showing a substantial increase in the share of households reporting no climate-related losses between midline and endline (from 14% to 35.6% for crops and from 39.8% to 54% for livestock). To ensure a conservative estimate, only 50% of these improvements was considered, corresponding to reductions in loss incidence of 10.8% for crops and 7.1% for livestock. These benefits were phased in progressively in line with the PCIP beneficiaries onboarding and aggregated at economic prices with those derived from BP models.

A key methodological adjustment compared to the ex-ante analysis concerns the choice of the discount period. While the ex-ante EFA adopted a 10-year horizon, this corresponds to the minimum analysis period recommended by IFAD EFA Guidelines and is generally considered appropriate only for projects focused on short-cycle crop production. In the case of HESAD, which includes a significant share of investments with longer gestation periods (particularly in livestock development and resilience-enhancing infrastructure), as well as delayed implementation of BPs and PCIPs reflecting the complex implementation realities in the Guyana Hinterland, a 10-year horizon is not considered adequate to for assessing overall project performance.

The ex-post analysis therefore considers three scenarios: a 10-year horizon (Ex-post A) for direct comparability with the ex-ante analysis; a 13-year horizon (Ex-post B) capturing approximately 10 years of benefits following the delayed investment phase; and a 15-year horizon (Ex-post C), that is considered the most appropriate for assessing the project's economic performance ex-post. The latter represents a midpoint between the 10-year period used at design and the 20-year horizon typically recommended by IFAD for projects involving longer-term investments. A social discount rate of 5% was applied, compared to 4% at design.

The ex-post results are presented in Table 2 below. Under the 10-year scenario, the project yields negative indicators (EIRR -6.4 %, ENPV -USD 1.55 million, BCR 0.8), reflecting the concentration of costs in the early years and delayed benefit realization. Under the 13-year scenario, the indicators become positive (EIRR 15.1 %, ENPV USD 2.79 million, BCR 1.4). Under the 15-year horizon, the project demonstrates a positive economic performance, with an EIRR of 19.5 %, an ENPV of USD 5.35 million, and a BCR of 1.7, well above the social discount rate.

Comparison with ex-ante results (EIRR 21.0 %, ENPV USD 6.97 million, BCR 2.0) indicates that economic performance is lower than originally projected, primarily due to implementation delays, reduced outreach, and lower effective participation. However, the gap narrows substantially when a longer and more appropriate time horizon is considered. In particular, under the 15-year scenario, the EIRR approaches the ex-ante estimate, and the ENPV indicates that a substantial share of the anticipated economic value has been realized.

Overall, the analysis confirms that HESAD generated positive and substantial economic returns when assessed over an appropriate time horizon. At the same time, results should be interpreted as conservative, as a significant share of benefits, particularly those related to improved nutrition, human capital, and long-term resilience, could not be fully monetized.

19. Table 2: Results of the ex-post economic analysis under alternative discount periods

INDICATORS	EFA RESULTS			
	Ex-ante	Ex-post A	Ex-post B	Ex-post C
EIRR	21.0%	-6.4%	15.1%	19.5%
ENPV (USD)	6 970 000	-1 548 132	2 792 706	5 353 024
ENPVb (USD)		6 119 965	10 460 803	13 021 120
ENPVc (USD)		7 668 097	7 668 097	7 668 097
BCR	2.0	0.8	1.4	1.7
Discount period (years)	10	10	13	15
SDR	4%	5%	5%	5%

20. A basic sensitivity analysis was performed for Scenario C, considering possible variations to benefits flows over the future years (from PY10 to PY15); the results are shown in the table below. The results indicate that the economic performance of the project remains robust under a range of plausible assumptions and confirms that the project's economic viability is resilient to variations in future benefits flows. Even under a substantial reduction in benefits of 30 % in the remaining years considered in the 15-years horizon, the EIRR remains at 13.9 %, well above the 5 % social discount rate, and the ENPV remains positive. More moderate reductions in benefits (-10 % and -20 %) result in EIRRs of 17.8 % and 16.0 % respectively, confirming that the project's economic viability is not highly sensitive to downside risks in future benefit streams. Conversely, increases in benefits lead to further improvements in returns, with the EIRR rising to 21.0 %, 22.5 %, and 23.8 % under +10 %, +20 %, and +30 % scenarios respectively. These results highlight the potential gains associated with sustained support to the projects financed by the HESAD project and suggest that continued technical assistance and business development support over the coming years still have the potential to further enhance the project's economic returns.

21. Table 3: Sensitivity analysis on benefits PY10-PY15, Scenario C

Scenario		EIRR	ENPV (GYD '000)
Base scenario		19.5%	2 441 672.3
Benefits	+10%	21.0%	1 293 229.2
Benefits	+20%	22.5%	1 470 353.1
Benefits	+30%	23.8%	1 647 476.9
Benefits	-10%	17.8%	938 981.6
Benefits	-20%	16.0%	761 857.7
Benefits	-30%	13.9%	584 733.9

F. Partners' performance

F.1. Performance of IFAD

IFAD's performance is rated as **moderately satisfactory** with adequate support generally provided during the three stages of the project life cycle. The project design was relevant to the context and the QA contributed to enhance the quality of the design. Quality of supervision and implementation support missions were satisfactory with recommendations provided in agreed and relevant action plans, which were followed up in monthly meetings between missions in the period when the project was at risk of being or was a problem project. However, the first project years, where the PMU was struggling from low capacities, the missions could have been more frequent with more technical expertise and resources provided. Loan administration and procurement reviews were for the most part managed swiftly and funds' transfers were timely. IFAD worked tirelessly with the PMU and the government partners to design the restructuring, however the time for its approval as well as approval of subsequent project extensions took longer than expected. The completion review was effective but suffered from significant delays due to the lack of contracting of the endline survey by the government. When the government finally decided to do the survey in-house, IFAD did assign a consultant to support but unfortunately this support should have ensured better expertise in the areas where the government needed it the most, such as sample design, design and piloting of the survey instrument, and proper training of the enumerators.

Across the life of HESAD, IFAD carried out regular implementation support and supervision missions. Starting during the COVID-19 pandemic, these shifted to virtual missions, and then to some extent, to hybrid missions during the final project years. After a project coordinator was finally hired in September 2017, however with limited capacities resulting in little progress, IFAD fielded a project support mission in November 2017 led by the PTL. During the intensive work mission, IFAD worked with the coordinator and prepared the PIM, the full package of TORs and selection criteria for the remaining PMU staff, the full package of documents for hiring the baseline study including, TORs, Expression of Interest, and Request for Proposals (RFP), and a detailed action plan with step-by-step tasks and completion dates to be implemented to ensure the project would become fully operational. However, the project kept having major capacity limitations in the PMU until a new project coordinator was finally hired in 2019 and IFAD's support started to see results.

Given the very limited progress made by the PMU during the first years of the project IFAD recruited a local consultant to support the project's restructuring in 2020. This consultant remained active until project closure, providing ongoing support to the PMU both during and after supervision missions.

The restructuring surfaced that members of the PMU, and potentially many of the agency staff that the PMU had turned to for PCIP and BP design and implementation support, did not have a working knowledge of important concepts related to the approach proposed in the original HESAD project design. These include pro-poor value chain development, participatory approaches, and mainstreaming gender. They also lacked experience managing enterprises and specifically managing enterprises in the hinterland's particularly challenging business environment. Likely, a capacity assessment at project start-up in addition to focusing on the lack of capacities of the first project coordinator would have identified these and other capacity gaps earlier on in MoA and its agencies. This could have allowed for addressing these gaps simultaneously with addressing the low project management capacities and might have improved project performance earlier than achieved. One important barrier in addition to the low project management capacities was, however, MoA's reluctance to work with other partners in the country experienced in Hinterland livelihood and business development.

As part of the restructuring, IFAD established targets for approved investment plans that the PMU was required to meet to avoid a partial cancellation of funds. This led to focus on quickly developing and approving community investment plans with low thresholds for technical support in the plan development. The decision had far-reaching consequences for the operation and performance of the PMU (in the absence of field staff, central PMU staff were sent to the field to facilitate plan development), for the GIF's Evaluation Panels, and for the sustainability of many community investments.

Between 2022 and 2024, IFAD provided remote technical support to strengthen M&E processes within the PMU, backstopping the Project's KM and M&E Officer, including in preparation for the MTR and the project's endline survey.

In 2022, IFAD approved GoG's request for a level 2 modification of the project, including a 12-month extension of the project from March 31st 2023 to March 31st 2024, a reallocation of financial resources between categories, and an extension of the project area to include limited investments in Regions 7 & 8, with the intention of laying a foundation for the scaling up of HESAD to these regions. This extension recognized that the implementation period remaining (less than 5 months at the time the extension was considered) was not sufficient to complete and stabilize HESAD-financed community projects and ensure achievement of the PDO.

Subsequently, IFAD approved GoG's request for a no-cost extension of the project from March 2024 to September 2024, to allow the PMU to complete ongoing monitoring of start-up businesses financed by the project, and to implement measures aimed at strengthening the sustainability of community projects.

To address the shortcomings of the endline survey done in-house by the MoA, IFAD provided substantial support in data cleaning and analysis comparing data with the data from the baseline, midline and outcome surveys done during the course of the project. This was complemented by data collection for the end of project EFA led by IFAD and the PMU dashboard for BPs and CPIPs.

F.2. Performance of the Government

The governments' performance is rated as **moderately satisfactory**. Government demonstrated a general commitment to the project development objectives but had reluctance to build partnerships with strategic stakeholders that could have improved implementation on-the-ground. The PMU performance improved significantly after a new coordinator was appointed in 2019 and stayed generally satisfactory throughout the rest of the project implementation. However, it was still affected by the inability to hire more field facilitators and outsource the field implementation support to District Councils in Region 9, and an implementing partner in Region-1, which pulled the M&E specialists attention away from his main tasks while supporting the field implementation. Staff turnover only affected the implementation towards the end, including significant delays in the endline survey.

Central Government Level. Commitment to HESAD's implementation improved in 2019, when a new project coordinator was hired. IFAD and the government worked then towards a restructuring that would allow the project to start implementation including moving the GIF under the ASDU. The commitment increased further after the restructuring in 2020. Engagement at the level of the Minister was consistently high from 2020 through closure. GoG committed to retaining HESAD field staff within the MoA and Local Government structures. MoA had raised the possibility of establishing a Hinterland Development Unit within the Ministry, which would have contributed to the sustainability of HESAD's interventions post-closure, but this did not materialize, including because the PMU lost key staff towards the end of the project.

PMU. The performance of the PMU pre-restructuring was inadequate. At restructuring, almost 4 years after the financial agreement had been signed, no community investment plan had been completely developed, and no investments had been made in the targeted communities.

Post-restructuring, the PMU pragmatically dealt with a high degree of scrutiny from both Central Government and IFAD, to deliver investments on the ground, deploying the only personnel it had to facilitate project development in beneficiary communities. This resulted in the successful preparation and implementation of an impressive number of PCIPs and BPs in record time. However, this also delayed the development of robust M&E systems and undermined the use of data to

proactively guide adjustments to project implementation. KM and M&E responsibilities were merged in one role, and translated into delays for some knowledge products, limiting their ability to inform the actions of beneficiaries and partners. PMU presence at regional level came too late in the project, and with too little personnel to adequately influence the quality of the design and to some extent the implementation of investment plans. IFAD missions had repeatedly recommended intensifying the presence of field facilitators in each region however, steady political resistance hindered such increased field presence. The Project Restructuring had envisioned hiring the District Councils in Region 9, and an implementing partner in Region-1 to accelerate implementation and ensure local buy-in and sustainability. Although this was agreed upon in the Project Restructuring and in the Amendment to the Financing Agreement, the Government opted to cancel the hiring of these implementation service providers. Staff turnover was relatively low until project closure approached, when the PMU lost multiple staff members centrally (KM & M&E, GESI) and in the field offices. The PMU acted to fill some staff gaps through new recruitment and collaboration with other units of the Ministry of Agriculture.

G. Assessment of sustainability

The sustainability of the project is rated as **moderately satisfactory** with the majority of business plans showing indications of financial sustainability. MoA has integrated the field facilitators hired in Region 1 and 9 in their staff to continue to provide support for the business plan groups. The groups have also been integrated in the registries of NAREI and GLDA for them to continue to provide extension services. The village councils have the capacities to continue to maintain their PCIP investments also considering the substantial new resources going into the hinterland communities including from the Forest Carbon Credit Fund, the NODE, and the LCDS.

Social sustainability. The project had a strong focus on contributions to community empowerment, human capital development, and social cohesion in Hinterland communities. A key value added of the project has been its emphasis on community-led interventions, which, together with the strengthening of the social fabric, has enhanced ownership and collective agency. Village councils and business plan (BP) groups have played a central role in identifying priorities, managing resources, and implementing investments under the Community and Production Investment Plans (CPIPs). Through direct engagement in planning, procurement, financial management, and monitoring and evaluation, beneficiaries have developed practical skills in governance, accountability, and organizational management. The project invested significantly in capacity-building efforts, combining soft skills with technical and conceptual training. These were delivered by the Project Management Unit (PMU), including specialists in gender, social inclusion, and climate, as well as through partnerships with institutions such as Merundoi, the Gender Affairs Bureau, the Food Policy Unit of the Ministry of Health, the Carnegie School of Home Economics, and civil society organizations. This diversified approach contributed to strengthening both individual and collective capacities across communities.

The use of a Training of Trainers (ToT) model proved particularly effective in expanding outreach and reinforcing sustainability. Community-selected trainers were selected from school feeding programmes, health services, or local leadership, were equipped to deliver nutrition education at the community level. The establishment of a trainer network (e.g. through digital platforms such as WhatsApp) supported peer learning and continuity, demonstrating a scalable mechanism for strengthening human capital.

The project also ensured the application of Free, Prior and Informed Consent (FPIC) processes in close collaboration with field facilitators, reinforcing inclusive participation and respect for community governance structures. Training activities extended to a wide range of community actors, including Toshao (indigenous leaders), chairpersons, treasurers, cooks from school feeding programmes, and community mentors, contributing to broad-based empowerment.

Economic and financial sustainability. The results of the ex-post economic and financial analysis indicate that the investments supported under HESAD are, in general, both financially and economically viable. At the model level, farm and enterprise activities generate positive incremental net benefits and strong returns, suggesting that supported production systems are capable of generating sufficient income to cover operating and maintenance costs, as well as to sustain productive activities over time.

However, the long-term sustainability of these activities is subject to several important constraints. First, given that most benefit flows are directly linked to primary production and agro-processing, the sustained adoption of improved and climate-adapted technologies is critical. Evidence from the endline survey and fieldwork indicates that climate-related production losses remain significant, and that pressures associated with climate variability continue to heavily affect smallholder systems in the Hinterland. In this context, the adoption of practices to further enhance production systems resilience (such as integrated soil fertility management, integrated pest management, and improved water-use efficiency) is essential to sustain and protect the financial and productivity gains supported by the project. However, these practices received relatively limited emphasis in project-supported training and capacity-building activities, resulting in low levels of adoption among beneficiaries while being broadly recognized as useful and beneficial. This represents a key risk for long-term sustainability and highlights the need for continued and more targeted technical support focused on climate adaptation.

Second, market access and commercialization conditions remain a key constraint for BP consolidation and expansion. While local market participation is widespread, commercialization channels are still largely informal and concentrated. The endline survey indicates that direct sales to private consumers in local markets (e.g. weekly or bi-weekly markets) and institutional channels such as school feeding programmes remain the dominant outlets, with limited integration into more structured value chains. In addition, market diversification is weak, with more than half of producers relying on a single buyer for over 75 % of their production. This exposes producers to price volatility and demand risks, potentially undermining income stability and incentives for further investment.

Overall, while HESAD investments are financially and economically sound, their long-term sustainability can be further enhanced by strengthening institutional support for extension and advisory services (particularly with a stronger focus on climate-resilient practices) and by improving access to diversified and reliable markets, thus reinforcing the enabling environment for smallholder commercialization and value chain development in the Guyana Hinterland.

Technical sustainability. The investment made under the CPIP and BP are mostly in simple infrastructure and equipment purchased by the village councils and business groups themselves ensuring their suitability for their needs and operation capacities. The groups were trained in bookkeeping and management of cashflows to allow them to set aside budget for maintenance and operation. In the completion workshops, project participants were reporting that they would have appreciated more training but the fact that they managed and reported on the resources for the implementation of their PCIPs and BPs, including procurement processes, have strengthened their management capacities adding to the sustainability of their investments and businesses.

Institutional sustainability. The project worked with a limited number of partners at the level of the region, hence support for local institutions was limited. Partnerships with the District Councils in Region 9 did not materialize. HESAD invested in the Regional Agriculture Departments (RADs) in both regions (predominantly in mobility and equipment), and in supporting the establishment of an office of the Fisheries Department in the North Rupununi.

Environmental sustainability. Some of the activities promoted by the project have a direct positive impact on the conservation of watershed in the project area such as the honey production around the Konuka mountains in Region 9. The project area is thinly populated with low pressure on natural resources. Environmental and climate safeguards were adequately implemented with no adverse environmental impact of project activities. Limited training in integrated pest management reducing the use of pesticides as well as soil improving practices led to that 33% of crop producing farmers participating in the project shifted to less harmful agricultural practices. The project could have provided more training and follow up to achieve a higher adoption rate for these practices at a broader scale. The infrastructure implemented through BP and PCIP supported climate adaptation and resilience and the project managed to substantially improve household resilience with 80% of households experiencing an increase in resilience between the midline and endline surveys (see the Climate Change Adaptation section).

H. Lessons learned and knowledge generated

Village councils are not always suitable institutional vehicles for managing income-generating activities

The sustainability of productive investments under HESAD varied significantly depending on the institutional arrangements through which activities were managed. Experience from the project indicates that village or business councils, which are subject to electoral cycles and leadership changes approximately every four years, were often not well suited to managing income-generating activities over time. Changes in council composition and priorities disrupted continuity in decision-making, resource allocation and operational support for ongoing activities. This dynamic was evident, for example, in poultry investments managed through village councils. In these cases, councils initially played an active role in providing key inputs such as feed; however, following leadership changes, priorities shifted and support was withdrawn, undermining the viability of the activity. In contrast, producer groups with clearer mandates, stable internal governance and defined accountability arrangements demonstrated relatively stronger performance and continuity.

This experience highlights the importance of carefully assessing institutional arrangements at design stage and aligning them with the long-term operational requirements of income-generating activities. Where productive investments are concerned, relying on governance bodies with rotating leadership and broad mandates may increase sustainability risks, while dedicated producer organizations may offer more appropriate institutional anchoring.

Peer-to-peer learning and clustering can strengthen performance but need to be intentionally designed

Informal peer-to-peer learning among groups engaged in similar activities emerged during the later stages of HESAD and contributed to problem-solving and adaptation. However, these dynamics were not systematically planned or supported, limiting their potential impact. The experience suggests that deliberately clustering investments by value chain or geographic area and facilitating structured peer learning can enhance knowledge transfer, economies of scale and resilience of community-based enterprises.

Feasibility analysis and market assessment are critical before approving income-generating investments

The HESAD experience shows that demand-driven investment approaches, while important for ownership, need to be complemented by rigorous technical and market feasibility assessments to ensure viable outcomes. Stakeholder feedback indicates that several income-generating activities supported through business plans (particularly bakeries and shade houses) were approved and implemented without sufficiently robust analysis of production requirements, scale and market demand. Particularly at Mid-Term Review, pressure to accelerate delivery of business plans in order to recover implementation delays limited the scope for technical field assessments and market analysis. As a result, feasibility and profitability considerations were often addressed only partially, contributing to uneven performance and sustainability of income-generating activities. Future interventions should therefore combine participatory planning with field-based feasibility assessments to guide and, where necessary, redirect investment choices.

Newly created producer groups need time, facilitation and realistic expectations to become economically viable

HESAD demonstrated that newly formed groups faced greater challenges than more established ones in operating income-generating activities. Weak group dynamics, leadership turnover and large group sizes diluted individual economic returns and reduced incentives to sustain activities. In several cases, expectations regarding profitability were not aligned with realistic market prospects. This experience confirms that group-based business models require time to mature and should be supported by careful facilitation, realistic feasibility assessments and clear expectation management from the outset.

Community-driven investment approaches require balancing physical investments (“hardware”) with adequate non-physical (“software”) support

The experience of HESAD shows that business investments focused primarily on physical assets are more likely to be sustainable when accompanied by training and technical assistance. While the project assumed that line ministries would be able to provide technical assistance as part of their regular functions, in practice this capacity proved uneven and insufficient to support a large number of geographically dispersed investments. As a result, beneficiary groups often lacked timely and specialized advisory support on production techniques, business management, record-keeping and market access. This experience highlights that, in similar contexts, it may be more effective to explicitly budget for technical assistance and outsource its delivery to specialized service providers, while assigning the ministry a supervisory and quality assurance role. In such a model, public institutions focus on coordination, oversight, reporting and accountability for results, rather than on direct service delivery. Future projects should therefore treat non-physical support as an integral investment cost, clearly define institutional roles in technical assistance delivery and supervision, and ensure that adequate resources are allocated to sustain advisory services throughout the investment cycle.

I. Conclusions and recommendations

HESAD addressed highly relevant development challenges affecting Indigenous and hinterland communities in Guyana, including remoteness, limited access to basic services and markets, weak productive capacities and high exposure to climate variability. Throughout its implementation period, the project remained aligned with national priorities and IFAD's strategic objectives, despite a rapidly evolving political, economic and climatic context.

HESAD introduced new innovations in Guyana's development interventions in the Hinterland including the transfer of funds directly to village councils and producer groups for them to implement their public investment and business plans. It also introduced the involvement of local actors (private sector, NGOs and finance institutions) in the plan approval panel creating interesting opportunities for synergies with other initiatives. It managed to change the MoA's engagement from a knowledge and technology transfer approach to a community planning based approach in the Hinterlands suitable to the village culture and aspirations in the Regions.

The project applied participatory engagement practices consistent with the principles of Free, Prior and Informed Consent (FPIC), with strong emphasis on consultation, community meetings and engagement with village governance structures throughout planning and implementation. This approach contributed to legitimacy, community ownership and access to remote communities. At the same time, it entailed longer preparation times and more complex coordination processes, highlighting the need to explicitly recognise and manage these trade-offs when designing and implementing interventions in Indigenous contexts. Overall performance was affected by a very slow project start-up with many years lost at the beginning and rapid pick up with an impressive amount of investments implemented in the last three project years. While the project delivered a broad mix of public, collective and business investments, results and sustainability prospects varied across intervention types. While the project reached its targets with successful public/collective investments, the business investments were much less than planned which affected the outreach in increased production and income. This is as expected, since the late implementation of many Business Plans limited the time available for these activities to mature and generate sustained effects by project completion.

Public and collective investments addressing basic services and community infrastructure generally demonstrated stronger performance and sustainability, while income-generating activities proved more vulnerable to technical, institutional and market-related constraints and need more time to become sustainable. These constraints were particularly evident in the limited integration of producers into structured value chains, with many beneficiaries continuing to rely on small and localized markets. This highlights the importance of complementing productive investments with more explicit market development strategies, including value aggregation mechanisms, buyer linkages and post-harvest support.

Institutional arrangements and implementation capacity played a central role in shaping outcomes. Decentralised presence and collaboration with regional structures was limited in the beginning but improved over time improving outreach and responsiveness. However, the inability to systematically engage external partners in implementation support and staffing levels constrained the depth and continuity of follow-up on the many groups and investments as required. The project experience underscored the importance of clearly defined institutional roles and realistic assumptions regarding the capacity of public institutions to support implementation in remote and resource-constrained environments.

Despite the many challenges, through the achievement of key outcomes in job creation and income generation and diversification in livelihoods, the project managed to deliver on its development objective with 80% of households experienced an increase in resilience between the baseline and endline surveys. This achievement was equally distributed between men and women headed households and was higher for households that both benefitted from PCIPs and BPs, showing the relevance of the combination of these two main instruments of the project. This finding suggests that integrated approaches combining community-level infrastructure and individual or group-based productive investments are more effective than single interventions in generating sustainable livelihood outcomes. Overall, HESAD provided IFAD and government counterparts with a valuable operational learning experience on the opportunities and constraints of implementing rural development interventions in Guyana's hinterland. The project generated relationships, systems and practical knowledge that can inform future engagement in Indigenous and remote rural areas, particularly with regard to decentralised delivery models, participatory approaches and institutional arrangements.

In light of current Guyana's transition to high-income country status following the expansion of the oil sector, future investment in the country will need to rely on modalities other than traditional intervention. The experience and learning generated by HESAD suggest that, where engagement is feasible, donor's value added may lie in supporting the Government of Guyana through targeted technical assistance, reimbursable advisory services and South-South and Triangular Cooperation, particularly in areas where development challenges persist despite improved macroeconomic conditions.

HESAD demonstrated the complexity of designing and implementing development interventions in hinterland and Indigenous contexts, where poverty, food insecurity and limited access to services remain concentrated. Future engagement modalities should therefore focus on consolidating and transferring the operational knowledge generated by the project, including approaches to decentralised delivery, participatory engagement consistent with FPIC principles, and

institutional coordination in these areas. Given the limited scope for large-scale investment operations, future engagement could prioritise strengthening government systems and capacities. This includes supporting ministries and regional institutions to play coordination, supervision and quality assurance roles, while drawing on specialised service providers for technical delivery where appropriate. Finally, future activities in Guyana should continue to recognise the importance of inclusive and participatory engagement in Indigenous areas, while explicitly accounting for the additional time, resources and coordination requirements associated with such approaches. This will be essential to ensure legitimacy, ownership and sustainability.

Footnotes

[1] <https://data.worldbank.org/indicator/DT.ODA.ALLD.KD?locations=GY>

[2] <https://publications.iadb.org/en/ten-findings-about-poverty-latin-america-and-caribbean>

[3] https://www.iom.int/sites/g/files/tmzbd12616/files/country/docs/migration-data-report-dutch-and-english-speaking-caribbean-countries-n2_2024.pdf

[4] <https://www.foodsystemsdashboard.org/countries/guy#cost-of-an-energy-sufficient-diet-co-ca>

[5] <https://databank.worldbank.org/source/food-prices-for-nutrition>

[6] The 2009 HIES referenced in Guyana's PRSP 2011-2015. <https://www.mindbank.info/item/6053>

[7] Demographic and Health Survey. Ministry of Health, 2009

[8] Conservation International-Guyana, 2015. The Rupununi Economic and Environmental Baseline Report.

[9] The second National Communication to the United Nations Framework Convention on Climate Change, 2012)

[10] United Nations Office for Disaster Risk Reduction

[11] In less than one year (2020/21), 103 Business plans (out of 200 BP planned until project end) were developed. In the following 3 years 66 additional plans were developed, and all 169 plans were implemented.

Guyana

Hinterland Environmentally Sustainable Agricultural Development Project **Project Completion Report**

Appendix 1: Project logical framework

Mission Dates: 21/10/2025 - 29/10/2025
Document Date: 24/06/2026
Project No. 2000001472
Report No. 7531-GY
Loan ID 2000001704

Latin America and the Caribbean
Programme Management Department

This document will be publicly disclosed unless there is written dissent on its disclosure by the Borrower at the time of this document submission to IFAD or no later than the project closing date.

Hinterland Environmentally Sustainable Agricultural Development Project

Logical Framework

Results Hierarchy	Indicators							Means of Verification			Assumptions		
	Name	Baseline	Mid-Term	End Target	Annual Result (2024)	Cumulative Result (2024)	Cumulative Result % (2024)	Source	Frequency	Responsibility			
Outreach	1.a Corresponding number of households reached							Baseline studies Impact study Verification in the field	Mid Term Before Closing	PMU, MOA			
	Women-headed households (number)	0		960	541	1 238	128.958						
	Non-women-headed households (number)	0		7 040	3 642	9 491	134.815						
	Households (number)	0		8 000	4 183	10 729	134.112						
	1 Persons reached by project-supported activities							Baseline studies Impact study Verification in the field	Mid Term Before Closing	PMU MOA			
	Males (number)	0		19 541	9 681	25 354	129.7						
	Females (number)	0		18 859	9 560	24 429	129.5						
	Young (number)	0		15 360	7 136	19 193	125						
	Indigenous people (number)	0		36 480	18 444	48 099	131.9						
	Total number of persons receiving services (number)	0		38 400	19 241	49 783	129.6						
	1.b Estimated corresponding total number of households members												
	Household members (number)	0		40 000	20 915	53 645	134.1						
	Project Goal												
	Development Objective Improved livelihood resilience through income generation, access to assets, improved nutrition, and adaptation to climate variability	Targeted households have increased their resilience (80%)							Baseline studies Impact study Verification in the field	Mid Term Before Closing		PMU MOA	Economic risks: Productive specialization (vs traditional diversification strategy): vulnerability to market shocks; increased seasonality effects on income and labour cycles Competition for labour from other sectors
Households (number)		0		6 400	8 798	8 798	137.469						
Female-headed households (%)		0		15	82	82	546.667						
Outcome 1. C1 - Communities and producer groups have identified investment opportunities manage economic and climate change risk	Households in targeted communities participate in developing or approving PCIPs/BPs							Reports M&E Supervision reports Progress reports	Semi-annually Annually Mid Term Before Closing	PMU MOA			
	Households (number)	0		4 400	0	6 253	142.114						
	Female-headed households (%)	0		15	0	11	73.333						

Results Hierarchy	Indicators							Means of Verification		Responsibility	Assumptions	
	Name	Baseline	Mid-Term	End Target	Annual Result (2024)	Cumulative Result (2024)	Cumulative Result % (2024)	Source	Frequency			
	People in targeted communities participating in enterprises (group or individual) with established business plans.							Reports M&E Supervision reports Progress reports	Semi-annually Annually Mid Term Before Closing	PMU MOA		
	People (number)	0		5 000	0	2 414	48.3					
	Females (%)	0		50	0	62	124					
	Youth (%)	0		30	0	53	176.7					
Outcome 2.1 C2 - Increased investments in business plans that increase agriculture and related income-generating opportunities and increase market access	Households that invested in business plans (80%) have increased their income from agriculture and related activities							Baseline studies Impact study Progress reports Verification in the field	Annually Mid Term Before Closing	PMU MOA	Climate change risks: Productive transformation without access to adequate technology and information for water and soil management Shift to less diversified farming systems Social risks: Weakening of social capital and organization capacity at community level Exclusion of vulnerable groups including women and youth Risks for nutrition and food security: Increased complexity of nutritional problems (e.g., transition to unhealthy diets) Decrease of food security Loss of traditional knowledge, food culture and agro-biodiversity Institutional risks: Limited inter-institutional coordination for actions at the regional level Incipient managerial and organizational capacity to implement investments at the local level (communities and producers' organizations)	
	Households (number)	0		1 000	406	1 891	189.1					
	Female-headed households (%)	0		15	12	12	80					
	1.2.4 Households reporting an increase in production											
	Households (%)	0		25	19	19	76					
	Households (number)	0		2 000	2 039	2 039	102					
	Number of new part-time jobs created							MIS	Annual	PMU		
	Males (number)	0		720	1 236	1 290	179.2					
	Females (number)	0		720	339	504	70					
	Indigenous people (number)	0		1 440	1 555	1 758	122.1					
	Young (number)	0		432	763	869	201.2					

Results Hierarchy	Indicators							Means of Verification		Assumptions
	Name	Baseline	Mid-Term	End Target	Annual Result (2024)	Cumulative Result (2024)	Cumulative Result % (2024)	Source	Frequency	Responsibility
Outcome 2.2 C2 - Increased access to assets that build community resilience and create an enabling productive environment (water, energy, ICT, others)	Households in targeted communities with access to public goods							Baseline studies Impact study Progress reports Verification in the field	Annually Mid Term Before Closing	PMU MOA
	Households (number)	0		6 000	2 208	8 754	145.9			
	People in producer groups and agri-entrepreneurs in targeted communities with access to production infrastructure									
	People (number)	0		4 000	161	2 414	60.4			
	People in producer groups and agri-entrepreneurs in targeted communities with access to technical assistance and agri-extension services									
	People (number)	1 994		5 000	0	1 269	25.4			
	People in producer groups and agri-entrepreneurs in targeted communities with access to business support services									
	People (number)	1 823		5 200	0	547	10.5			
	Number of households in target communities that adopt technologies for integrated soil fertility management, integrated pest management, and technology for increasing efficient water use that improved adaptability to climate change									
	Household (number)	1 050		1 750	551	742	42.4			
Outcome 2.3 C2 - Improved diet of adequate quality and appropriate quantity, referring to context-appropriate food-based dietary guidelines and drawing insofar as possible on own-production and local markets in a context of effective behaviour change and nutrition education activities	1.2.8 Women reporting minimum dietary diversity (MDDW)									
	Women (%) (%)	65.4		60	85.6	85.6	142.667			
	Women (number) (number)	1 122		2 160	1 698	1 698	78.611			
	Households (%) (%)	65.4		60	85.6	85.6	142.667			
	Households (number) (number)	1 715		3 600	1 698	1 698	47.167			
	Household members (number)	8 575		14 400						
	Indigenous (number)	5 471		8 487						
	Women-headed households (number)	404		540						
Outcome 3. C3 - Efficient and adequate management and implementation of planned activities and effective coordination and planning between institutions at the national, regional and local level	Evidence based knowledge products developed (written, video or oral/radio)							Knowledge products MOUs Supervision reports Progress reports	Annually Mid Term Before Closing	PMU MOA
	Products (number)	0		5	5	5	100			
	MOUs signed with public institutions to provide services to the project							Knowledge products MOUs Supervision reports Progress reports	Annually Mid Term Before Closing	PMU MOA
	MOUs (number)	0		7	0	3	42.9			
	AWPB is implemented each year.							AWPB Supervision reports Progress reports	Annually Mid Term Before Closing	PMU MOA
	AWPB Implementation (%)	0		90	107	107	118.9			
Output 1.1 C1 - Public/Collective Investment Plans (P/CIP)	P/CIPs developed							P/CIPs M&E reports Progress reports	Semi-annually Annually	PMU
	P/CIPs (number)	0	0	134	0	128	95.522			
	Number of people benefitting from casual labour opportunities							MIS	Annual	PMU
	Males (number)	0		1 200	911	2 007	167.3			

Results Hierarchy	Indicators							Means of Verification		Responsibility	Assumptions
	Name	Baseline	Mid-Term	End Target	Annual Result (2024)	Cumulative Result (2024)	Cumulative Result % (2024)	Source	Frequency		
	Females (number)	0		400	206	364	91				
	Young (number)	0		1 000	544	1 095	109.5				
Output 1.2 C1 - Business Plans (BP) for producer groups	BPs developed							Business Plans M&E reports Progress reports	Semi-annually Annually	PMU	
	BPs (number)	0	0	200	0	169	84.5				
Output 1.3 C1 - Training Plans (TP - Communities, Producer Groups, Groups of Agri-preneurs)	TPs developed							M&E reports Business Plans Progress reports	Semi-annually Annually	PMU	
	CTPs (number)	0	0	50	0	93	186				
Output 1.4 C1 - List of cross community investments, studies and TA for the implementation of P/CIPs, BPs and CTPs	People trained in topics not related to business plans							M&E reports Business Plans Progress reports	Semi-annually Annually	PMU	
	people trained in gender (number)	0		2 688	1 084	1 875	69.754				
	people trained in ICT (number)	0		200	36	52	26				
	people trained in other topic (number)	0		2 688	0	1 878	69.866				
Output 1.5 C1 - Market, weather and climate bulletins	Bulletins developed										In 5 areas (3 District Councils in R9 and 2 sub-regions in R1) at least three quarterly bulletins starting in 2021
	Bulletin (number)	0		30	0	7	23.333				
Output 2.1.1 C2 - Business plans for the production and processing of cash crops and related value-adding activities approved	BPs supported and implemented							Baseline studies Impact study Progress reports Verification in the field	Annually Mid Term Before Closing	PMU MOA	
	BPs (number)	0		200	0	169	84.5				
Output 2.1.2 C2 - Increase in volume sold through new or existing markets channels and coaching, technical assistance and business incubation activities provided for the implementation of business plans	BPs that have received coaching, technical assistance and business incubation activities							Baseline studies Impact study Progress reports Verification in the field	Annually Mid Term Before Closing	PMU MOA	
	BPs (number)	0	0	200	0	50	25				
Output 2.1.3 C2 - Sub-regional roundtables established to coordinate actions on key cash crops and commodities in Region 9 and studies for specific value chains and related markets opportunities	Studies carried out							Baseline studies Impact study Progress reports Verification in the field	Annually Mid Term Before Closing	PMU MOA	
	Studies (number)	0		4	0	2	50				
Output 2.2.1 C2 - Investments in public goods for improved water management, renewable energy and in public facilities and infrastructure that increase access to internet in target communities	P/CIPs supported and implemented							Baseline studies Impact study Progress reports Verification in the field	Annually Mid Term Before Closing	PMU MOA	
	P/CIPs (number)	0		134	0	128	95.522				
Output 2.2.2 C2 - Investments for integrated soil fertility management, integrated pest management, and in technology for increasing efficient water use for productive activities in business plans	BPs that have integrated and received technical assistance for climate smart interventions							Baseline studies Impact study Progress reports Verification in the field	Annually Mid Term Before Closing	PMU MOA	
	BPs (number)	0		40	1	6	15				
Output 2.2.3 C2 Investments in the quality and availability of support services	Public sector service providers (staff) with improved capacity to provide relevant services										
	People (number)	0		30	0	22	73.333				
	Civil society service providers (staff) with improved capacity to provide relevant services										
	People (number)	0		30	0	25	83.3				
	Audio-video and remote training courses and extension material provided by implementing and supporting partners										
	Videos (number)	0		10	0	0	0				

Results Hierarchy	Indicators							Means of Verification		Assumptions
	Name	Baseline	Mid-Term	End Target	Annual Result (2024)	Cumulative Result (2024)	Cumulative Result % (2024)	Source	Frequency	Responsibility
Output 2.3.1 C2 -Increased knowledge on nutrition and balancing of diet through awareness raising and training	Target group aware of balanced diets (60%)							Baseline studies Impact study Progress reports Verification in the field	Annually Mid Term Before Closing	PMU MOA
	Households (number)	80		4 800	898	898	18.708			
	Female-headed households (%)	20		15	18.2	18.2	121.333			
	1.1.8 Persons provided with targeted support to improve their nutrition									
	Households (number)	0		3 600	531	1 984	55.1			
	Household members benefitted (number)	0		18 000	2 467	9 842	54.7			
	Indigenous people (number)	0		13 500	2 311	9 448	70			
	Women-headed households (number)	0		432	222	555	128.5			
Output 2.4 Increased knowledge on production and income generation through business support services and training	1.1.4 Persons trained in production practices and/or technologies							MIS	Annual	PMU
	Total number of persons trained by the project (number)	0		1 570	1 593	1 822	116.051			
	Men trained in crop (number)	0		304	78	122	40.132			
	Women trained in crop (number)	0		304	135	179	58.882			
	Young people trained in crop (number)	0		182	92	124	68.132			
	Indigenous people trained in crop (number)	0		608	213	301	49.507			
	Men trained in livestock (number)	0		456	823	823	180.482			
	Women trained in livestock (number)	0		456	557	557	122.149			
	Young people trained in livestock (number)	0		274	556	556	202.92			
	Indigenous people trained in livestock (number)	0		912	1 380	1 380	151.316			
	Men trained in fishery (number)	0		40	0	92	230			
	Women trained in fishery (number)	0		10	0	49	490			
	Young people trained in fishery (number)	0		15	0	84	560			
	Indigenous people trained in fishery (number)	0		50	0	140	280			
	Total persons trained in crop (number)	0		608	213	301	49.507			

Results Hierarchy	Indicators							Means of Verification		Assumptions
	Name	Baseline	Mid-Term	End Target	Annual Result (2024)	Cumulative Result (2024)	Cumulative Result % (2024)	Source	Frequency	
	Total persons trained in livestock (number)	0		912	1 380	1 380	151.316	MIS	Annual	PMU
	Total persons trained in fishery (number)	0		50	0	141	282			
	2.1.2 Persons trained in income-generating activities or business management									
	Males (number)	0		1 500	774	861	57.4			
	Females (number)	0		1 500	1 393	1 625	108.3			
	Indigenous people (number)	0		3 000	2 167	2 438	81.3			
	Young (number)	0		1 200	940	1 080	90			
	Persons trained in IGAs or BM (total) (number)	0		3 000	2 167	2 486	82.9			
	Output 3.1 C3 - Participatory planning and M&E	Communities that monitor and evaluate their P/CIPs								
Communities (%)		0		80	100	100	125			
Producer groups that monitor and evaluate their BPs							Progress reports Regional Workshop reports	Semi-annually Annual	PMU	
Groups (%)		0		80	100	100				125
Regional Evaluation and Planning Workshops organized in each region annually							Progress reports Regional Workshop reports	Semi-annually Annual	PMU	
Workshops (number)		0		6	2	4				66.7

Guyana

Hinterland Environmentally Sustainable Agricultural Development Project

Project Completion Report

Appendix 2: COI surveys

Mission Dates: 21/10/2025 - 29/10/2025
Document Date: 24/06/2026
Project No. 2000001472
Report No. 7531-GY
Loan ID 2000001704

Latin America and the Caribbean
Programme Management Department

This document will be publicly disclosed unless there is written dissent on its disclosure by the Borrower at the time of this document submission to IFAD or no later than the project closing date.



Endline survey for the Hinterland Environmentally Sustainable Agricultural Development (HESAD) Project – Region 1 and Region 9

Planning Unit

Ministry of Agriculture

Regent and Vlissengen Roads

Georgetown, Guyana

12th August, 2025

Introduction

The Hinterland Environmentally Sustainable Agricultural Development Project (HESADP) was conceived within the framework of Guyana's National Strategy for Agriculture 2013–2020, the Low Carbon Development Strategy (LCDS), and the Food and Nutrition Security Strategy (FNSS) 2011–2020. Targeting the predominantly Amerindian communities of Regions 1 and 9, the project sought to address persistent rural poverty, food insecurity, and the growing threats posed by climate variability.

¹Region One (1) – Barima-Waini stretches from the Atlantic Ocean along its northern coastline, across a narrow strip of coastal plain, and inland to the tributaries of the Cuyuni and Waini rivers. Covering an area of approximately 7,560 square miles (19,580 square kilometers), the region is recognized for its extensive hinterland forests and diverse hardwood species. The regional economy is driven by logging, gold and diamond mining, as well as agriculture.

²Region Nine (9) – Upper Takutu–Upper Essequibo is characterized by its expansive savannahs and the Kanuku and Kamao highlands. Its southern and western boundaries are defined by the international border with Brazil. As the largest of Guyana's ten administrative regions, it covers approximately 21,340 square miles (55,280 square kilometers) and encompasses both hinterland forests and the Rupununi Savannahs. The region's economy is

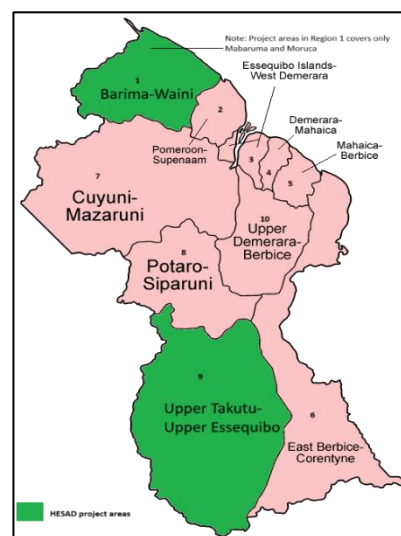


Figure 1: Map of Guyana showing HESAD project areas (Original image – HESADP endline survey)

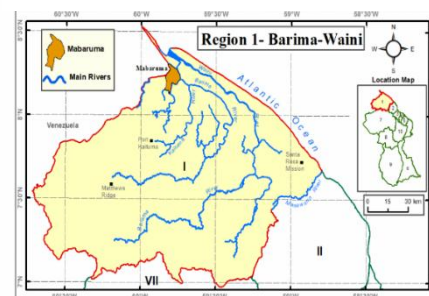


Figure 2: Map of Region 1 - Barima-Waini

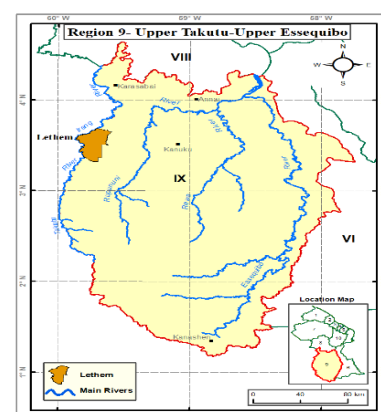


Figure 3: Map of Region 9 - Upper Takutu - Upper Essequibo

¹ Image obtained from Guyana Lands and Surveys Commission. (n.d.). Fact Page of Guyana. Retrieved from: <https://factpage.glsc.gov.gy/home/region-1/>

² Image obtained from Guyana Lands and Surveys Commission. (n.d.). Fact Page of Guyana. Retrieved from: <https://factpage.glsc.gov.gy/home/region-9/>

supported by cattle ranching, crop production, as well as the mining of semi-precious stones.

These regions face unique challenges, including remoteness from major markets, limited infrastructure, high transportation costs, low agricultural productivity, and environmental vulnerabilities such as flooding, prolonged dry spells, and saltwater intrusion.

The project's development objective was to improve livelihood resilience through income generation, access to productive assets, improved nutrition, and adaptation to climate variability.

To respond to these challenges, HESADP was implemented with financial support amounting to US\$11,143 million, which enabled the roll-out of a wide range of interventions including support for business plans, Public/Collective Investment Projects and trainings. The project supported a diverse range of 169 Business Plans (BP) across priority livelihood areas. The largest share focused on cattle rearing (26), poultry production—broilers (21) and layers (15), and agro-processing (16). Other notable ventures included crop farming (10), eco-tourism/guest houses (10), bakeries and snackettes (11), sewing (9), shade houses (8), sheep rearing (8), mixed farming (7), and smaller-scale activities such as pork production (6), grocery shops (5), fishing (5), honey production (2), and other enterprises (10). This wide distribution demonstrates the project's role in promoting both traditional agriculture and diversified rural enterprises.

Complementing these initiatives, the project implemented 128 Public/Collective Investment Plans (PCIPs) aimed at strengthening communal infrastructure and services. The majority of investments focused on public buildings (47) and bridge/road/revetment works (33), addressing urgent needs for service delivery, transportation, and flood resilience. Additional investments were made in water systems (19), school feeding programs (12), and smaller but significant areas such as sports facilities (6), farming support (4), sanitary blocks (3), and ICT infrastructure (3). Together, these PCIPs complemented individual and group businesses by improving the enabling environment for agricultural production and market access, and by contributing to households' and communities' strengthened resilience capacities.

The project aims to strengthen resilience to climate vulnerabilities, build capacity on gender issues, and promote women's and youth leadership—achieving close to 50%

women beneficiaries. Working with the Wapichan Women's Movement and the North Rupununi Macushi Research Unit, the project supported forums that enhanced women's and youth participation and linked them to national bodies such as the Gender Affairs Bureau. Innovative methods, including radio dramas and street theatre, were also used to address gender roles in nutrition and social issues such as domestic violence, teenage pregnancy, and alcohol abuse.

Nutrition-focused initiatives were successfully implemented, including awareness and behavior change communication activities with Merundoi and the development of an indigenous recipe book in partnership with the Carnegie School of Home Economics. These interventions demonstrate strong potential to enhance the project's nutrition-related outputs and outcomes. Nutrition monitoring and training were integrated into these efforts, emphasizing participants' understanding of a balanced diet. In addition, supplementary behavior change measures were embedded within the collaboration with Merundoi, which is critical for strengthening dietary diversity (MDD-W) across both Region 1 and Region 9.

Central to HESADP was a strong focus on capacity building and training, ensuring that households, producer groups, and community leaders were equipped with the knowledge and skills to sustain investments. Training activities were wide-ranging, with a strong emphasis on livestock and crop extension, financial management, and business management, which were repeated across dozens of sessions. Specialized training in climate-smart agriculture, agro-processing, fish conservation awareness, apiculture, beekeeping, baking, garment construction, ICT, and leadership development further diversified skills development. Full scholarships were awarded to eight (8) students to pursue studies at the Guyana School of Agriculture while capacity building and institutional strengthening for village councils reinforced local governance and decision-making. Region-specific activities included leadership development, packaging and labeling, livestock husbandry and disease management, poultry management, and training in weather and climate data use.

Taken together, these interventions reflect HESADP's holistic approach—strengthening individual livelihoods through business ventures, enhancing community resilience through infrastructure, and building human capital through extensive training and education. This integrated model aimed not only to generate income and improve nutrition but also to equip hinterland communities with the capacity to adapt to climate variability and sustain development gains.

Executive Summary

The Hinterland Environmentally Sustainable Agricultural Development (HESAD) Project is a six-year initiative funded by the International Fund for Agricultural Development (IFAD) and implemented by the Ministry of Agriculture, Guyana. The project aims to enhance livelihood resilience for approximately 10,111 households across 125 communities in Regions 1 and 9. It focuses on improving income generation, access to assets, nutrition, and climate adaptation.

As part of the project's comprehensive evaluation, the endline survey for the Hinterland Environmentally Sustainable Agricultural Development Project (HESADP) was conducted between May and June 2025 in Regions 1 and 9, targeting 800 beneficiary households across 40 communities. The survey assessed changes in livelihoods, resilience, dietary diversity, and access to services to evaluate project outcomes.

Methodology & Coverage

A two-stage stratified sampling design was used to ensure representation across sub-districts. Data were collected from 340 households in Region 1 and 460 in Region 9, alongside 18 groups in Region 1 and 40 groups in Region 9. Both household and group questionnaires were administered via KoboToolbox, covering demographic, economic, and production indicators. Enumerator training, pilot testing, and field verification were implemented to ensure data quality. Notably, the non-response rate was 1.25%.

Key Findings

1. Demographic Profile

Female respondents accounted for 58.8% of the total sample, with Region 1 showing a slightly higher rate of female participation (61.5%) compared to Region 9 (56.7%). The average household size across both regions was 4.72 persons, with Region 1 reporting a marginally larger household size of 4.93 persons, while Region 9 averaged 4.55. The population was predominantly Amerindian, representing 79% of the sample. Ethnic diversity was more pronounced in Region 1, whereas Region 9 displayed a more homogenous demographic composition.

2. Livelihoods and Economic Activity

Agriculture remains the backbone of the local economies in both regions. In Region 1, crop production was the dominant livelihood activity, accounting for 35.6% of

households, followed by livestock rearing at 17.8%. These were complemented by smaller contributions from service-based activities (9.9%) and agro-processing (9.4%). Region 9 reflected a similar economic profile, with 38.1% of households engaged in crop production and 16.6% in livestock. Service activities accounted for 13.8%, while agro-processing contributed 8.6 %.

Additional sources of income included fisheries and trade in Region 1, and trade along with small-scale mining and forestry in Region 9. Both regions also reported minor but meaningful income from home-based enterprises such as baking, sewing, catering, and furniture making. The economic landscape in both areas presents clear opportunities for growth through strategic investments in agro-processing, eco-tourism, and small enterprise development, which could further diversify income and build resilience.

3. Training and Capacity Building

Just over half of all respondents (51.9%) reported receiving some form of training. Participation was notably higher in Region 9, where 75.6% had undergone training, compared to 55.2% in Region 1. The training content varied by region: Region 1 concentrated more on livestock and crop production, while Region 9 focused more broadly on agri-business, processing, and community development. This suggests a differentiated approach to skills development aligned with local priorities and capacities. However, participation in some potentially relevant training categories specifically related to the improved resilience of production systems (like Pest, Disease & Environmental Practices) was generally low across both regions, and especially in Region 1 (1.1%)

4. Public and Collective Investments

Approximately 72% of households across both regions benefited from at least one Public or Collective Investment Project (PCIP). These investments most commonly addressed local infrastructure needs, including roads, bridges, and walkways. Other widely reported benefits included access to agricultural tools, improved water supply systems, and community facilities. At the time of the endline survey, a large majority of investments financed under the project remain active. About 81 percent of respondents reported that infrastructure created through the project is still in use, while more than 92 percent reported that related services and activities continue to function. Employment generation has been one of the most significant and visible effects of PCIPs across both

regions. For example, permanent part-time employment was reported by 22.1% of respondents in Region 1 and 19.1% in Region 9, making it one among the most frequently cited benefits in both regions..

5. Changes in Production and Income

When compared to conditions prior to the HESADP intervention, 19% of households reported an increase in production, while 25 % experienced a decline. The majority– 56%– reported no significant change in production levels. When the analysis is restricted only to respondents involved in Business Plans (BPs), results suggest a more positive trend in production outcomes. Among BP participants who responded to the question (71 individuals), 29.6 per cent reported increased production, compared to 16 per cent among non-BP respondents. Similarly, a smaller share of BP participants reported declines in production (21.1 per cent vs 26.3 per cent). This indicates a positive association between BP participation and production performance. However, these findings should be interpreted with caution. The number of responses is relatively limited, and ambiguity in the question may affect consistency, as it is unclear whether respondents referred to BP-related activities, individual production, or overall household production. In addition, the results are not fully consistent with the higher rates of reported income improvements observed elsewhere, and cannot be triangulated with Dashboard data. As such, the findings should be considered indicative rather than conclusive.

A particularly relevant finding is that, among the respondents for whom information on land size change was collected, more than one third (35.2%) reported that the area they farm had increased compared to the period before HESAD. Income trends followed a similar pattern: 24% of households saw income gains, 6% experienced a decline, and 69% reported stable earnings. Region 1 recorded a stronger upward shift in household income, with 28% of respondents reporting increases, compared to 22% in Region 9.

However, Business Plans (the main project intervention directly linked to income generation) were a particularly effective driver of income growth. Among households participating in Business Plans, income gains were in fact widespread. Nearly 87 percent of BP participants in Region 1 and about 71 percent in Region 9 reported that their

household income increased due to the enterprises and business activities supported through the project.

6. Dietary Changes and Food Security

Overall, 61% of households reported maintaining or improving the diversity of their food consumption. Region 9 performed better on this indicator, with 67 % of households maintaining or increasing dietary diversity, while Region 1 stood at 53 %. Despite this, food insecurity remains a concern, as 48 % of all households reported reducing food consumption due to shortages. Region 9 experienced higher levels of food-related stress, with 60 % of respondents reporting reductions, compared to 31 % in Region 1. On a more positive note, 79 % of respondents indicated that their diets had shifted toward healthier food choices in the past two years.

7. Minimum Dietary Diversity for Women (MDD-W)

The results found that 85.3 % of women met the minimum dietary diversity threshold of at least five food groups. Region 1 performed slightly better, achieving 88.3 %, while Region 9 reached 83.4 %. These results reflect meaningful improvements in women's nutritional outcomes, supported in part by increased access to diverse food sources and nutrition awareness through project interventions.

8. Rural Business and Employment

Enterprise scale expanded or stabilized across most supported businesses. Approximately half of the surveyed enterprises reported higher sales compared with the period before project implementation, while most of the remaining enterprises reported stable sales levels. All gains were attribute to project-related support. Results are stronger for enterprises that have been in operation longer, suggesting that results may further consolidate over time. The enterprises supported through the Business Plans were

Employment generation emerges as one of the most significant outcomes of the project-supported Business Plans, with benefits spreading beyond the direct beneficiaries. Enterprise activities supported under Business Plans generated employment for 232 individuals outside the beneficiary groups, in addition to 88 co-managers engaged in enterprise management and operations. The workforce composition indicates strong

progress toward inclusive development. Women made up over 60 % of co-managers and 69 % of employees across the two regions. Youth aged 14 to 35 represented 75 % of the workforce, while Indigenous people formed the majority of workers. These figures highlight the project's role in fostering employment opportunities for traditionally underrepresented groups and strengthening local economies through inclusive business growth.

Market access remains constrained in many project areas. A large share of producers reported relying primarily on direct sales to private individuals or to institutional buyers such as schools, while sales through more structured commercialization channels such as traders, cooperatives, or agro-industrial buyers remain relatively limited. This suggests that local value chains remain weak and that opportunities for scaling up production and commercialization are still constrained. Moreover, dependency on the main buyer remains extremely high, given that for more than 50% of respondents, the share going to the main buyer is above 75%. At the same time, this also indicates that the support offered by the project to strengthening village-level school feeding programmes has contributed to some extent to generating demand for local products.

9. Community and Household Resilience

Climate risks remain a major challenge for hinterland livelihoods, as households remain highly exposed to climate shocks. More than 60 percent reported experiencing prolonged dry spells in the previous two years, and more than half reported flooding events, often with severe impacts on production and livelihoods.

Despite the high exposure to climate hazards, the resilience analysis (through the RDMT and Simplified Resilience Index) shows that a substantial and widespread improvement in household resilience was achieved over the course of the project. Based on the combined analysis of the Simplified Resilience Index (SRI) and the Resilience Design and Monitoring Tool (RDMT), 80% of households experienced an increase in resilience between the baseline and endline surveys, indicating that the project successfully achieved its Development Objective indicator. Benefits were equally shared by female-headed households and male-headed households.

The resilience trajectory tracked over time between the baseline, mid-term /outcome and endline survey shows a deterioration at midline, followed by a strong recovery and

improvement by endline. The midline survey was conducted in the aftermath of the COVID-19 pandemic and associated economic disruptions, which likely contributed to the temporary decline observed during that period. By endline, however, resilience levels had not only recovered but exceeded baseline levels for the large majority of households, indicating that the project interventions contributed to strengthening households' ability to manage risks and adapt to shocks.

Moreover, the data show a reduced severity of impacts from adverse some types of climate events. Comparing the endline with the midterm data, there was a substantial increase in the share of households reporting no climate-related losses for their crop or livestock production. With regard to crops, while only 14% of households had reported "No losses" at midline, at endline this percentage had increased to 35.6% (32.6% in Region 1, and 37.6% in Region 9). A similar trend was observed for livestock, for which the percentage of no losses at midline was 39.8%, while at endline it had increased to 54% (51.4% in Region 1, and 56.5% in Region 9).

Importantly, households that declared having benefited from both Business Plans (BP) and PCIPs consistently achieved higher scores across the adoption, results, and RDMT. The RDMT Overall index reaches approximately 0.53 among households benefiting from both BP and PCIP, compared to roughly 0.45 among households supported only through PCIP. This finding points to strong complementarities between PCIP and BP interventions, and suggests that stronger convergence and coordination between PCIP and BP instruments can generate important leverage effects. Overall, while some resilience outcomes may take longer to fully materialize, the evidence indicates that the project succeeded in establishing the foundations for sustained resilience improvements.

10. Conclusion

The endline survey confirms that the HESADP generated substantial gains in community participation, agricultural development, women's dietary diversity, and resilience. Public investments delivered concrete benefits, especially in infrastructure and employment. While a majority of households maintained steady levels of production and income, a significant portion of the households engaged in Business Plans reported clear economic gains linked to project interventions. These results provide a strong

foundation for continued support and future programming focused on inclusive, climate-resilient, and community-driven rural development.

AT A GLANCE

SURVEY REACH



800 households surveyed



40 beneficiary communities



1.23% non-response rate



NUTRITION AND DIETARY DIVERSITY (MDD-W)

- 85.6% of women met the MDD-W threshold (≥ 5 food groups)

- Region 1: ↑ from 65.4% to 88.3%

- Region 9: 83.4% adequacy

- 79% of households made **healthier food choices**



INCOME GROWTH



24% of households reported increased income

- Region 1: 28%
- Region 9: 22%



95% of income increases in Region 1 linked to **HESADP**



93% of income increases in Region 9 linked to **HESADP**

BENEFICIARIES OF HESADP TRAINING

 **52 %** of respondents or household member received training.

- Region 1: **55%**
- Region 9: **75%**

ENTERPRISE AND EMPLOYMENT

 **49%** of businesses increased sales

 **60%+** of co-managers were women

 **75%** of employees were youths (14–35 yrs)

 **90%+** of workforce were Indigenous

Contents

Introduction	1
Executive Summary	4
AT A GLANCE	10
List of Tables	14
List of figures	16
Abbreviations	18
Methodology	19
2.1. Survey Design and Implementation	19
2.2. Sampling and Coverage	19
2.3. Selection of Respondents	20
2.4. Survey respondent coverage	21
2.5. Non-response rate	22
2.6. Interviewer training (training of enumerators), pilot and data collection activities	22
2.7. Data Collection Tools	23
2.8. Data Processing and Cleaning	23
RESULTS AND INTERPRETATION	24
3. Respondent Characteristics	24
4. Household Demographics	27
5. Primary Economic Activity	29
6. HESADP project benefits	35
6.1. Households Benefitting from Training or PCIPs (HESADP)	35
7. Household Income Compared to the Pre-Implementation Period	46
8. Production/output when compared to the pre-implementation period (before HESAD project)	49
9. Group and Household Participation in HESAD-Supported Business Plans	51
10. Dietary Changes and Food Security Trends	54
11. Minimum Dietary Diversity for Women (MDD-W)	58
12. Access to resources	72

13.Group information analysis	80
14. Rural Business Enterprise analysis.....	107
15. Resilience analysis.....	118
16. Comparative analysis: Endline vs. Baseline	Error! Bookmark not defined.
17.Summary of Findings and Conclusion.....	164
Appendix	172

List of Tables

Table 1: Proposed number of communities to be sampled in each sub-district	20
Table 2: Planned vs. Actual Household Interviews by Region and Sub-district	21
Table 3: Age Statistics by Region	26
Table 4: Key Demographic Indicators of Surveyed Households by Region	27
Table 5: Education and ethnicity of household members	28
Table 6: Distribution of Main Economic Activities by District/Sub-Region	30
Table 7: Economic Activity Participation Rates by District/Sub-Region (% contribution to region)	31
Table 8: Participation in Training Courses by Category and Region	36
Table 9: Types of Public and Community Investment Projects Implemented by Region	40
Table 10: Post-Implementation Status of Project Infrastructure and Operations – Region 1	45
Table 11: : Post-Implementation Status of Project Infrastructure and Operations – Region 9	46
Table 12: Benefits of Project – Regional Comparison.....	43
Table 13: Reported Reasons for Lower Income – Region 1 ...	Error! Bookmark not defined.
Table 14: Reported Reasons for Lower Income – Region 9...	Error! Bookmark not defined.
Table 15: Involvement of Respondents and Household Members in HESAD-Supported Business Plans and Decision-Making.....	Error! Bookmark not defined.
Table 16: Household Food Production, Consumption, and Dietary Changes – Region 1.	56
Table 17: Household Food Production, Consumption, and Dietary Changes – Region 9.	57
Table 18: Minimum Dietary Diversity for Women (MDD-W).....	59
Table 19: Minimum Dietary Diversity for Women (MDD-W) – Region 1.....	61
Table 20: Minimum Dietary Diversity for Women (MDD-W) – Endline vs. Baseline	Error! Bookmark not defined.
Table 21: Calculation of adequacy rate	Error! Bookmark not defined.
Table 22: Minimum Dietary Diversity for Women (MDD-W) – Region 9	66
Table 23: Household access to good quality water over the past two years by region ..	75
Table 24: Land Ownership and Tenure Arrangements by District/Sub-Region.....	76
Table 25: Farm Size Statistics – Regional Breakdown.....	Error! Bookmark not defined.
Table 26: Group Respondent Size and Distribution – Mabaruma and Moruca.....	81
Table 27: Table 26: Group Respondent Size and Distribution – Mabaruma.....	81
Table 28: Table 26: Group respondent Size and Distribution – Moruca	82

Table 29: Group Crop Production Statistics for Region 1	Error! Bookmark not defined.
Table 30: Group Crop Production Statistics for Region 9	Error! Bookmark not defined.
Table 31: Livestock Types Managed by Groups – Region 1	93
Table 32: Livestock Types Managed by Groups – Region 9	94
Table 33: Livestock Production Statistics by Sub-District in Region 1	Error! Bookmark not defined.
Table 34: Livestock and Egg Production Statistics in Region 1	Error! Bookmark not defined.
Table 35: Livestock Production Statistics by Sub-District in Region 9	Error! Bookmark not defined.
Table 36: Livestock and Egg Production Statistics in Region 9	Error! Bookmark not defined.
Table 37: Fish Catch Statistics by Species	98
Table 38: Distribution of First, Second, and Third Choice Market Choices – Regional Comparison.....	Error! Bookmark not defined.
Table 39: Mode of Transportation and Travel Time to Market by Region ..	Error! Bookmark not defined.
Table 40: District-Level Operating Cost Statistics for Group Activities in Region 1....	Error! Bookmark not defined.
Table 41: Sales Statistics – Region 1	Error! Bookmark not defined.
Table 42: Minimum and Maximum Sales by Group and District in Region 1	Error! Bookmark not defined.
Table 43: District-Level Operating Cost Statistics for Group Activities in Region 9 ...	Error! Bookmark not defined.
Table 44: Sales Statistics – Region 9.....	Error! Bookmark not defined.
Table 45: Minimum and Maximum Sales by Group and District in Region 9	Error! Bookmark not defined.
Table 46: Group co-managers information by district in Region 1	114
Table 47: Group employees information by district in Region 1.....	115
Table 48: Group co-managers information by district in Region 9	116
Table 49: Group employees information by district in Region 9	117
Table 50: Community Investments in Drainage and Bridges and Impact of Bridge Access by Region.....	Error! Bookmark not defined.
Table 51: Adoption of Climate Adaptation Practices in Regions 1 and 9	Error! Bookmark not defined.

Table 52: Region 1 – Impact Severity, Actions Taken, and Recovery Extent	Error! Bookmark not defined.
Table 53: Region 9 – Impact Severity, Actions Taken, and Recovery Extent	Error! Bookmark not defined.
Table 54: Resilience Index Scores and Categories by Region	Error! Bookmark not defined.

List of figures

Figure 1: Sex of respondents.....	24
Figure 2: Sex of respondents by region	25
Figure 3: Age range of respondents by region (%).....	26
Figure 4: Primary economic activity of Region 1.....	32
Figure 5: Primary economic activity of Region 9.....	33
Figure 6: Households benefitting from training or PCIPs (HESADP)	35
Figure 7: Households benefitting from training	35
Figure 8: Beneficiaries of training courses.....	35
Figure 9: Households benefitted from PCIPs	Error! Bookmark not defined.
Figure 10: Production/output when compared to the pre-implementation period... Error! Bookmark not defined.	
Figure 11: Production/output when compared to the pre-implementation period by region	Error! Bookmark not defined.
Figure 12: Current household income compared to before the HESAD project	47
Figure 13: Current household income compared to before the HESAD project by region	48
Figure 14: Current household income compared to before the HESAD project by region	49
Figure 15: Production/output when compared to the pre-implementation period by region	50

Figure 16: Participation in HESAD Project Decision-Making and Business Plan Implementation by Region	52
Figure 17: Effect of business plan on increased household income over the past 2 years	Error! Bookmark not defined.
Figure 18: Household Dietary Changes, Food Security, and Resource Diversity in Regions 1 and 9 (Past 2 Years).....	55
Figure 19: MDD-W Endline vs. Baseline for Region 1.....	Error! Bookmark not defined.
Figure 20: Nutrition information outreach by gender for Region 1.....	64
Figure 21: Foods consumed by women in one day in Region 1	68
Figure 22: Selected Food Group Intake of WRA by Age.....	69
Figure 23: Foods consumed by women in one day in Region 9	70
Figure 24: Selected food intake of WRA by age-range for Region 9	71
Figure 25: Nutrition Information outreach by Gender for Region 9	71
Figure 26: Irrigation source for crop production	Error! Bookmark not defined.
Figure 27: Irrigation source for livestock production.....	73
Figure 28: Adequacy of Water Supply for Livestock and Crop Production in Regions 1 and 9	74
Figure 29: Farm size change compared to pre-implementation period ...	Error! Bookmark not defined.
Figure 30: Access to a reliable internet in community center	79
Figure 31: Group switched from original business plan	85
Figure 32: Group switched from original business plan for Region 9	86
Figure 33: Production practices usage vs. usefulness for Region 1	Error! Bookmark not defined.
Figure 34: New crops introduced by HESADP in Region 1.....	89
Figure 35: HESADP fund usage for crops in Region 9	Error! Bookmark not defined.
Figure 36: Livestock ownership by region	93
Figure 37: HESADP fund usage for livestock by region	Error! Bookmark not defined.
Figure 38: HESADP fund usage for Fisheries by Region.....	99
Figure : Type of Market by Frequency	103
Figure : Distance to market facilities compare to before the HESAD project	107
Figure 41: Sales compared to the pre-implementation period for Region 1	Error! Bookmark not defined.
Figure 42: Sales compared to the pre-implementation period for Region 9.....	110
Figure 43: Sales performance relative to pre-implementation period.....	111

Abbreviations

AFPS – Aranaputa Processors Friendly Society

ATVs – All-Terrain Vehicles

BP – Business Plan

CSO – Civil Society Organization

FANTA – Food and Nutrition Technical Assistance

FAO – Food and Agriculture Organization

GYD – Guyana Dollar

ha – Hectares

HESADP – Hinterland Environmentally Sustainable Agricultural Development Project

ICT – Information and Communication Technology

IFAD – International Fund for Agricultural Development

km – Kilometers

kg – Kilograms

LTD – Limited (used in organization names)

MDD-W – Minimum Dietary Diversity for Women

mm – Millimeters

PCIPs – Public/Collective Investment Plans

PICSA – Participatory Integrated Climate Services for Agriculture

R1- Region One (1)

R9 – Region Nine (9)

SPSS – Statistical Package for the Social Sciences

WRA – Women of Reproductive Age

Methodology

2.1. Survey Design and Implementation

The endline survey for the HESAD Project was designed to assess changes in household livelihoods, groups, resilience, dietary diversity, and access to services in Regions 1 and 9. The data collection was implemented using KoboToolbox and included both demographics, household and group-level sections.

The questionnaires were adapted for each region, Region One (1) and Region Nine (9) to capture local context in these hinterland regions.

2.2. Sampling and Coverage

The HESAD Project benefitted approximately 10,111 households in 125 communities in Moruca and Mabaruma in Region One (1) and South Pakaraimas, North Rupununi, Central Rupununi, South Central Rupununi and Deep South Rupununi in Region Nine (9). This data collection exercise therefore sought to gather vital data on the outcomes of this intervention on the targeted households and producer groups.

A two-stage stratified probability design was employed to identify a representative sample to collect the required data from HESADP beneficiaries. With consideration of the timeline for implementation, resource availability, logistics concerns and the level of precision desired, the recommended sample size was 800 beneficiary households. The

sample size in each region was allocated proportionally to the number of beneficiaries in each region. As such, data was collected from 340 households in Region One (1) and 460 households in Region Nine (9).

The first-stage sampling was conducted using stratified random sampling. The level of stratification is at the sub-district level as the project was implemented in seven (7) subdistricts in Regions 1 and 9. Further, 125 communities in these sub-districts benefited from Business Plans (BP) and Public/Collective Investment Plans (PCIPs).

Thereafter, a random selection of 40 (at least 30%) of the identified communities was made. The number of communities selected for each region was allocated proportionally to the number of beneficiary communities in each region. However, given the variation in the beneficiary communities, the square root allocation method was used to determine the most appropriate sample of communities for each sub-district. Data was collected from beneficiary households in 17 communities in Region 1 and 23 communities in Region 9.

Table 1: Proposed number of communities to be sampled in each sub-district

Region	Sub-districts	No. of Beneficiary Communities	SQRT N	%	No. of Communities to be Sampled	No. of Households to be sampled	No. of Producer Groups to be sampled
1	Mabaruma	41	6	23%	10	200	18
1	Moruca	27	5	18%	7	140	10
9	South Pakaraimas	8	3	10%	4	80	8
9	North Rupununi	14	4	13%	5	100	10
9	Central Rupununi	13	4	13%	5	100	7
9	South Central Rupununi	12	3	12%	5	100	7
9	Deep South Rupununi	10	3	11%	4	80	7

	Total	125	28	100%	40	800	67
--	--------------	------------	-----------	-------------	-----------	------------	-----------

A key element of the project was the distinction between beneficiaries who benefitted from Business Plans (BP) and those who benefitted from Public/Collective Investment Plans (PCIP). In order to ensure that data for these two levels of beneficiaries are captured adequately, the BP beneficiaries was oversampled. The sample included 67 BPs and 40 PCIPs . In addition to households, the survey covered business and farming groups across the regions, collecting data on income-generating activities, production, group participation, and business outcomes.

2.3. Selection of Respondents

The respondents were pre-selected, and a list was provided to the Enumerator. The proposed respondents for the BP households included the executive and ordinary members of the beneficiary groups while the respondents from the PCIP households were randomly selected members of the beneficiary communities. In instances where several attempts were made to contact a respondent, the respondent was replaced with someone from the preselected replacement list.

2.4. Survey respondent coverage

The endline survey was designed to cover a total of 40 beneficiary communities across Regions 1 and 9, targeting 800 households. The implementation of the sampling plan was successfully executed, with all identified communities included in the data collection and the overall household target fully achieved.

Data collection commenced in Region Nine, covering all five districts: South Pakaraima, North Rupununi, Central Rupununi, South Central Rupununi, and Deep South Rupununi. While, simultaneously, data collection activities were conducted in Region 1 covering Mabaruma and Moruca districts.

Table 2: Planned vs. Actual Household Interviews by Region and Sub-district

Region	Sub-districts	No. of Communities Sampled	No. of Households to be sampled	Actual number of households interviewed
1	Mabaruma	10	200	200
1	Moruca	7	140	140
9	South Pakaraimas	4	80	81
9	North Rupununi	5	100	99
9	Central Rupununi	5	100	102
9	South Central Rupununi	5	100	96
9	Deep South Rupununi	4	80	82
	Total	40	800	800

In Region 1, all 240 targeted respondents from the two districts—Mabaruma and Moruca—were successfully surveyed, resulting in full coverage with no non-responses. In Region 9, the overall target was achieved across all districts; however, some districts exceeded their quotas due to higher-than-expected interest from community members., while others fell slightly below their target.

Despite minor variations at the sub-district level, these deviations were minimal and balanced across the region.

2.5. Non-response rate

Overall, the non-response rate was 1.25%. In Region Nine, there were 10 instances of non-response, where selected individuals refused to participate in the survey.

2.6. Interviewer training (training of enumerators), pilot and data collection activities

2.6.1. Interviewer Training & Supervision

The trainings of enumerators for the HESADP endline survey were conducted on May 12–13, 2025, in Region 9, and on May 19–20, 2025, in Region 1. Participants included representatives from the survey team—such as a data processing and analysis expert, staff from the Ministry of Agriculture Planning Unit, HESADP staff from both regions), the survey trainer, and the enumerators. The sessions were expertly facilitated by the survey trainer, who provided comprehensive guidelines and best practices to ensure participants were well-prepared with the knowledge and skills required to effectively conduct the surveys.

Furthermore, a comprehensive explanation of the survey instrument was provided, given that the participants were required to utilize this tool for conducting the survey.

2.6.2. Pilot

Following this, the pilot phase was conducted in Region 9 from May 14–15, 2025, and in Region 1 on May 21, 2025.

This phase of the survey had a twofold objective: firstly, to meticulously identify any potential errors or ambiguities within the questionnaire, and secondly, to ensure that all participating individuals had a thorough grasp of the survey instrument.

This pivotal pilot phase yielded positive outcomes, as it not only detected and rectified any issues in the survey instrument but also provided valuable insights and feedback that led to subsequent refinements in the questionnaire and survey methodology. Also, enumerators were informed of their mistakes and solutions were provided to avoid future errors.

2.6.3. Data collection and data verification activities

After completing the pilot phase, fieldwork commenced in Region 9 on May 20, 2025, and in Region 1 on May 23, 2025. Region 9 had 460 respondents while Region 1 had 340 respondents. The data collection process in each region took three weeks to complete.

During data collection activities, the project team conducted verification in most of the areas to ensure that data collection was actively taking place, to provide guidance to

enumerators, and to address any issues encountered in the field. This support proved effective and valuable, contributing to the successful completion of the survey.

2.7. Data Collection Tools

The instrument was developed with guidance from IFAD and digitized using kobo toolbox. The instrument included the following sections:

- **Household** : Demographic profile, resilience , dietary diversity, group participation, water and energy access, market distance, and livelihood changes.
- **Group** Crop and livestock production, business activities, profit and employment data, and HESAD-related support.

The instrument was administered using trained enumerators and monitored for completeness and consistency.

2.8. Data Processing and Cleaning

Data was exported from KoboToolbox and cleaned in Microsoft Excel and SPSS. Cleaning involved:

- Removing duplicates and incomplete submissions
- Identifying outliers and contacting respondents for correct information
- Standardizing variables for analysis (e.g., food groups, resilience scoring, business indicators)
- Generating derived variables for MDD-W and resilience index (RDMT)

Analysis was conducted using structured summary tables by district and sub-region to ensure comparability across Region 1 and Region 9. Also, comparison to baseline survey was done for some key indicators in specific regions.

RESULTS AND INTERPRETATION

3. Respondent Characteristics

3.1 Sex

Across both Region 1 and Region 9, female respondents accounted for 59% of the total survey population, while males represented 41%. This consistent trend of higher female participation ensures strong gender representation within the sample and

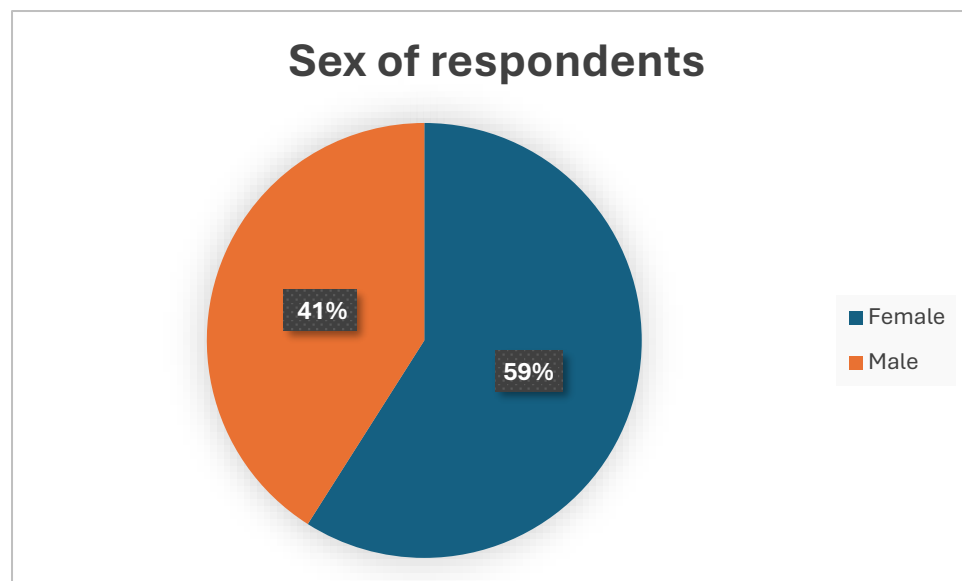


Figure 4: Sex of respondents

supports robust analysis of gender-related Logframe indicators, including the Minimum Dietary Diversity for Women (MDD-W).

The endline survey achieved balanced representation across sex in both Region 1 and Region 9, with a notable predominance of female respondents.

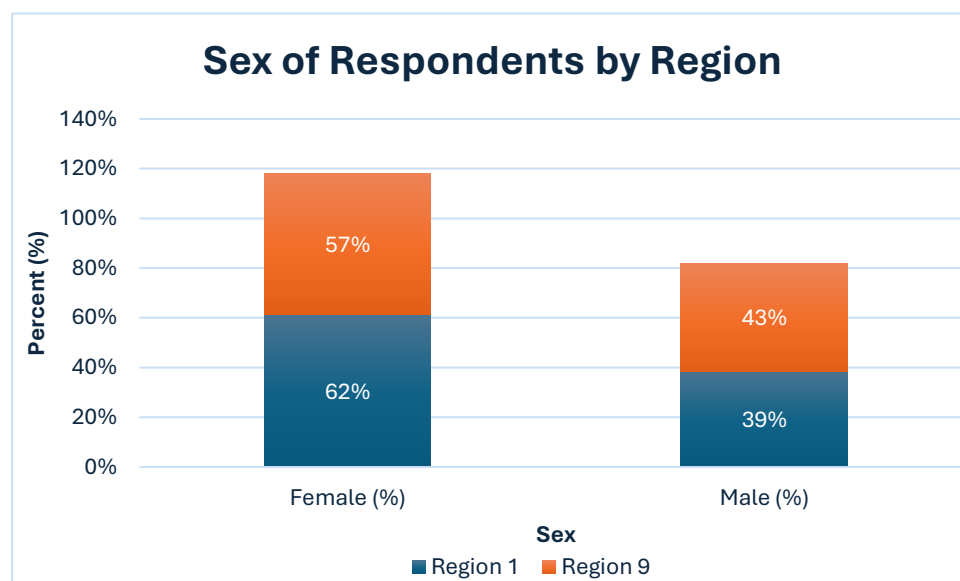


Figure 5: Sex of respondents by region

In Region 1, out of 340 respondents, 61.5% were female and 38.5% were male. The distribution by district shows that Moruca recorded the highest proportion of female respondents at 67.9%, followed by Mabaruma at 57.0%.

In Region 9, of the 460 respondents interviewed, 56.7% were female and 43.3% were male. A district-level breakdown reveals that North Rupununi had the highest share of female respondents at 65.7%, while South Pakaraimas was the only district where male respondents slightly outnumbered females (50.6% male vs. 49.4% female).

3.2 Age of Respondents

The age distribution of respondents across Region 1 and Region 9 reflects a predominantly working-age population, with most individuals falling between 20 and 60 years. In Region 1, the majority of respondents were aged 31–40 (24.4%), 41–50 (25.0%), and 51–60 (20.6%), indicating a slightly older demographic profile.

Conversely, Region 9 had a younger age distribution, with 21.1% aged 20–30, 25.7% of respondents aged 31–40, and 21.5% in the 41–50 range.

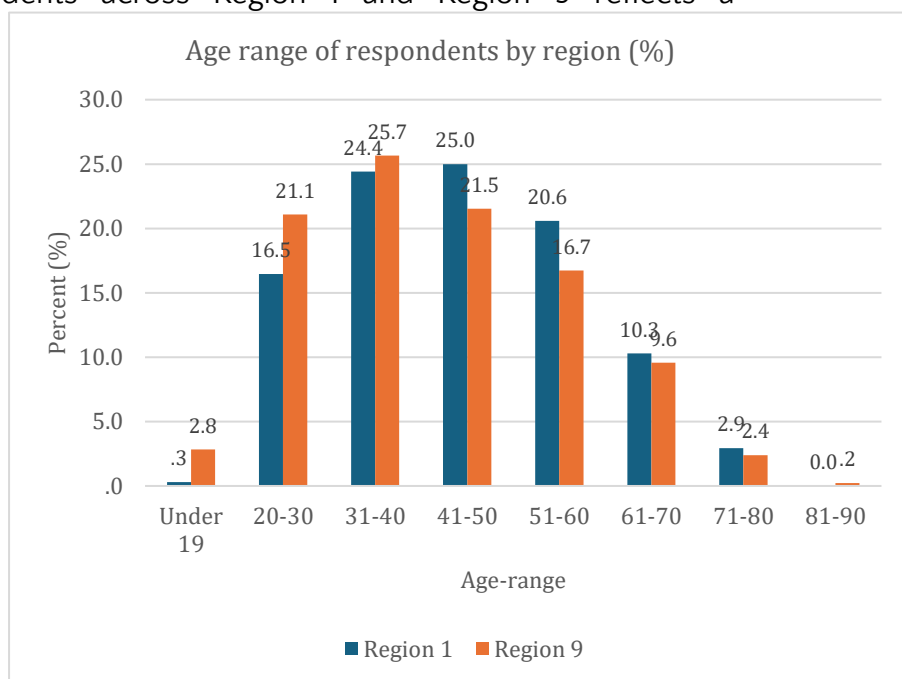


Figure 6: Age range of respondents by region (%)

While only 0.3% of respondents in Region 1 were under 19 years of age, Region 9 recorded a higher proportion in this category at 2.8%. Representation of older adults aged 61–70 was relatively similar in both regions—10.3% in Region 1 and 9.6% in Region 9.

A marginal number of elderly respondents were recorded in either region, with those aged 71–80 comprising 2.9% in Region 1 and 2.4% in Region 9, while only one respondent (0.2%) aged 84 years, in Region 9 was in the 81–90 age bracket. These findings confirm that both samples were heavily concentrated in the working-age adult population, particularly those aged 31–50.

In Region 1, respondents ranged from 19 to 79 years, with a mean age of 44.6 years and a median of 44 years. Meanwhile, in Region 9, respondents were slightly younger overall, with a mean age of 42.2 years and a median of 41 years. The age range extended from 18 to 84 years, with 24 being the most frequent age

Table 3: Age Statistics by Region

Metric	Region 1	Region 9
Sample Size (n)	340	460

Mean Age	44.6 years	42.2 years
Median Age	44 years	41 years
Mode	43 & 49	24
Minimum Age	19 years	18 years
Maximum Age	79 years	84 years
Dominant Age Group	41–50 (25.0%)	31–40 (25.9%)

4. Household Demographics

Guyana's Human Development Index (HDI) has shown steady progress, rising from 0.494 in 1990 to 0.776 in 2023. In that year, life expectancy stood at 66.5 years for males and 73.9 years for females. Education indicators also reflected advancement, with mean years of schooling recorded at 8.6 for males and 8.7 for females, and expected years of schooling at 12.7 and 13.3, respectively. Furthermore, 57% of men and 59% of women aged 25 years and older had attained at least some level of secondary education.

At the household level, the survey found that the average household size was five persons (exactly 4.72) (Table 4), ranging from as few as one person to as many as 20 in Region 1 and 13 in Region 9. This figure is slightly above the national average of 4.7 persons which was reported for Indigenous communities (Regions 1,7,8 and 9) in the 2012 National Population and Housing Census . The typical household resident is relatively young, with an average age of 25.6 years across both regions. Household heads are generally older, with a combined average age of 46.8 years, suggesting multigenerational household compositions are common.

Table 4: Key Demographic Indicators of Surveyed Households by Region

Indicator	Region 1 (N=240)	Region 9 (N=460)	Combined
Average number of household members	5 (exact 4.93)	5 (exact 4.55)	5 (exact 4.72)

Average age of household members	26.58	24.54	25.56
Average age of household head	48.33	45.35	46.84
Female household members (%)	49.2%	49.6%	49.4%
Female-headed households (%)	17.6%	20.0%	19.3%
Male-headed households (%)	82.4%	80.0%	80.7%

Females make up approximately 49.4% of the household population across both regions. Household headship remains predominantly male, with about 80.7% of households headed by men. Female-headed households account for 19.3% of the total.

Regionally, there are slight variations. Region 1 households tend to be slightly larger (4.93 persons) than those in Region 9 (4.55 persons), and household heads in Region 1 are older on average (48.3 years compared to 45.4 years in Region 9). While female residents are nearly equally represented in both regions, Region 9 shows a marginally higher proportion at 49.6%. Female headship is also more common in Region 9 (20.0%) compared to Region 1 (17.6%).

Table 5: Education and ethnicity of household members

Education Level	Region 1 (%)	Region 9 (%)	Combined (%)
None	12.80%	23.10%	18.60%
Partial Primary	13.20%	7.90%	10.20%
Primary	35.60%	39.60%	37.80%
Partial Secondary	13.30%	8.50%	10.60%
Secondary	19.60%	16.30%	17.80%
Certificate	0.40%	1.40%	1.00%

Post Graduate	--	0.30%	0.30%
Partial Tertiary	1.50%	0.30%	0.80%
Tertiary	3.60%	2.50%	3.00%

Approximately 66.6% of household members across both regions have completed at most primary education, including those with none (which includes nursery education and infants), partial primary, and primary levels. By region, 61.6% of household members in Region 1 and 70.6% in Region 9 have attained education at or below the primary level.

Ethnicity	Region 1 (%)	Region 9 (%)	Combined (%)
Amerindian	66.5%	89.0%	79.0%
African	0.9%	0.3%	0.6%
Mixed	32.2%	9.6%	19.6%
East Indian	0.3%	0.7%	0.5%
Chinese	0.1%	0.1%	0.1%
European	--	0.0%	0.0%
Portuguese	--	0.1%	0.1%

Ethnicity data aligns with the expected demographic profile of hinterland regions, with Amerindian ethnicity predominating—66.5% in Region 1 and 89.0% in Region 9. Mixed ethnicity is reported more frequently in Region 1 (32.2%) than in Region 9 (9.6%), contributing to greater ethnic diversity in Region 1. Minority ethnic groups, including African, East Indian, and Chinese, each represent small proportions in both regions, while European and Portuguese appear only in Region 9 at marginal levels.

5. Primary Economic Activity

In both Region 1 and Region 9, respondents reported involvement in primary production activities, including crop cultivation, livestock rearing, and fisheries. They also participated in agro-processing, encompassing the processing of both crop and livestock products. Beyond these, a range of “other activity options” were identified, such as sewing, resale of products, grocery shops, furniture making, block or burnt brick making,

baking, and food catering/snackette services. Some respondents further engaged as input suppliers or service providers, including public servants, Community Services Officers (CSOs), Community Enhancement Workers (CEWs), and part-time workers. Additional livelihood activities noted included mining, forestry, and related occupations.

Table 6 shows the distribution of primary economic activities within each district/sub-region – that is, the share of the sampled households or groups that identified each activity as their main or primary economic activity, relative to the total number of households or groups interviewed in that district.. This highlights the internal composition of reported primary livelihoods within each district.

Table 6: Distribution of Primary Economic Activities by District/Sub-Region

District/Sub-Region	Primary Production (%)	Agro-Processing (%)	Other (%)
Region 1			
Mabaruma	59.6%	8.5%	31.9%
Moruca	53.9%	14.2%	31.9%
Region 9			
Central Rupununi	56.4%	21.8%	21.8%
Deep South Rupununi	77.8%	2.2%	20.0%
North Rupununi	42.6%	8.2%	49.2%
South Central Rupununi	49.5%	4.0%	46.5%
South Pakaraimas	61.4%	13.9%	24.8%

The distribution of primary economic activities varied notably across districts and sub-regions, reflecting differences in economic focus and livelihood strategies.

In Region 1, Mabaruma recorded the highest concentration in primary production (59.6%), with a comparatively small share in agro-processing (8.5%) and nearly one-third of activities classified as “other” (31.9%). In the same Region, Moruca showed a slightly lower reliance on primary production (53.9%) but a higher share in agro-processing (14.2%), while its “other” activities mirrored Mabaruma’s at 31.9%.

In Region 9, Deep South Rupununi stood out with the strongest emphasis on primary production (77.8%) and the lowest proportion in agro-processing (2.2%), suggesting limited processing capacity and a heavier dependence on raw production. Central Rupununi also maintained a high primary production share (56.4%), but with the highest

agro-processing proportion in the region (21.8%), indicating more value-addition activities compared to other districts. North Rupununi, by contrast, had the lowest share of primary production (42.6%) and the highest share of “other” activities (49.2%), pointing to a more diversified or service-oriented local economy. South Central Rupununi displayed a balanced structure between primary production (49.5%) and “other” activities (46.5%), with minimal agro-processing (4.0%). South Pakaraimas maintained a relatively strong primary production base (61.4%), moderate agro-processing engagement (13.9%), and just under one-quarter in “other” activities (24.8%).

Overall, the data show that, while primary production remains the dominant activity across all districts, there are marked differences in the extent of agro-processing and diversification into other sectors, with Region 9 exhibiting greater variability between districts compared to Region 1.

Table 7: Primary Economic Activity Participation Rates by District/Sub-Region (% contribution to region)

Table 7 presents the contribution of each district/sub-region to the region’s overall total activities. In other words, it shows how much each district accounts for in the regional %ages, allowing for comparison of each district’s relative weight within the region as a whole.

District/Sub-Region	Primary Production (%)	Agro-Processing (%)	Other (%)
Region 1			
Mabaruma	62.6%	47.4%	60.2%
Moruca	37.4%	52.6%	39.8%
Region 9			
Central Rupununi	21.0%	44.4%	13.9%
Deep South Rupununi	23.7%	3.7%	10.4%
North Rupununi	17.6%	18.5%	34.7%
South Central Rupununi	16.6%	7.4%	26.6%
South Pakaraimas	21.0%	25.9%	14.5%

In Region 1, Mabaruma accounted for the majority share of the region’s primary production activities (62.6%), nearly half of its agro-processing activities (47.4%), and 60.2% of “other” activities. Moruca, while contributing a smaller share to primary production (37.4%), led slightly in agro-processing (52.6%) and accounted for 39.8% of the region’s “other” activities.

In Region 9, the contribution of districts to overall primary production was more evenly distributed, with Deep South Rupununi (23.7%) and Central Rupununi (21.0%) being the largest contributors, followed by South Pakaraimas (21.0%), North Rupununi (17.6%), and South Central Rupununi (16.6%). For agro-processing, Central Rupununi made the highest contribution (44.4%), with South Pakaraimas (25.9%) and North Rupununi (18.5%) following. The share of “other” activities was highest in North Rupununi (34.7%), followed by South Central Rupununi (26.6%) and South Pakaraimas (14.5%), with the remaining districts making smaller contributions.

5.1. Breakdown of primary economic activities by Region – Region 1 and Region 9

Region 1

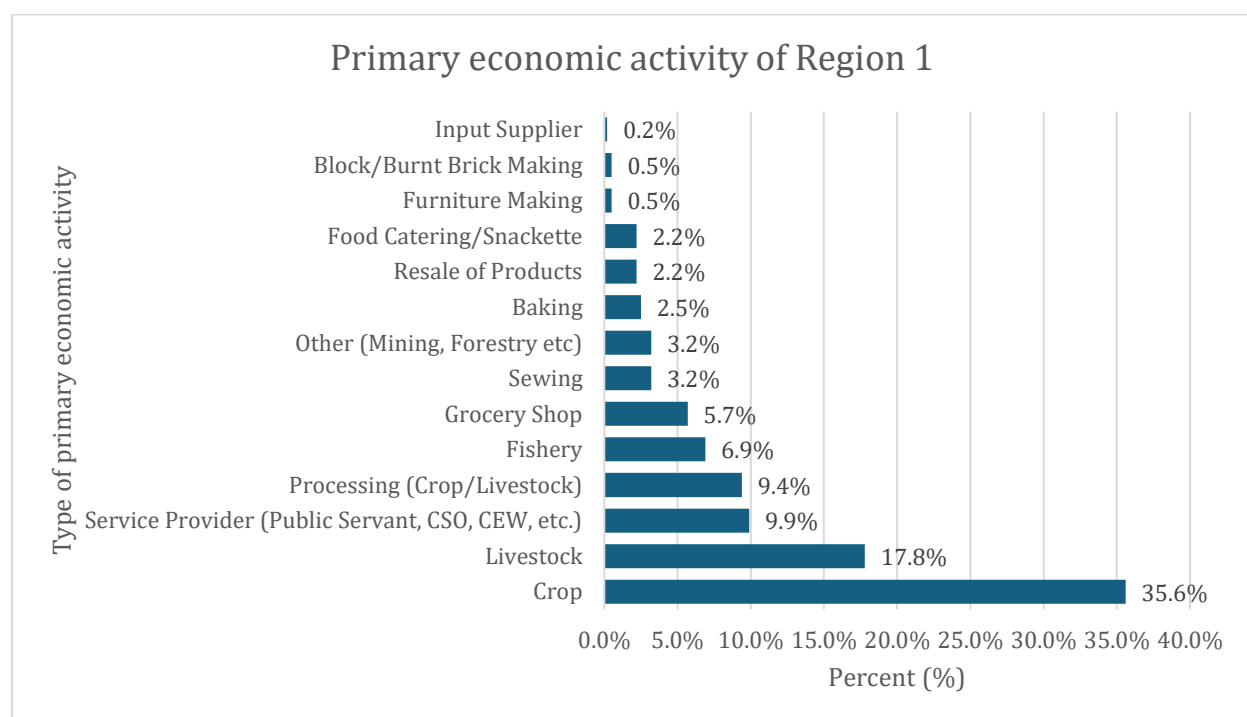


Figure 7: Primary economic activity of Region 1

For Region 1, the livelihood profile is also dominated by agriculture, with crop production emerging as the primary activity at 35.6% of responses, followed by livestock rearing at 17.8%. Together, these account for more than half of all reported activities, highlighting the region’s strong reliance on primary agricultural production.

Beyond farming, there is a meaningful share of service provision roles—such as public servants, CSO staff, and community extension workers—at 9.9%, alongside agro-processing (crop/livestock) at 9.4%, indicating some capacity for value addition to

agricultural commodities. Fishery contributes 6.9%, reflecting the significance of coastal and riverine resources, particularly in Moruca and Mabaruma.

Smaller but important livelihood sources include grocery shops (5.7%), sewing (3.2%), and other sectors like mining and forestry (3.2%). Additional niche activities, such as baking (2.5%), resale of products (2.2%), and food catering/snackette services (2.2%), further diversify income sources, albeit at lower levels of participation.

A very small segment of the population engages in specialized trades, such as furniture making (0.5%), block/burnt brick making (0.5%), and input supply (0.2%).

Overall, Region 1's economy remains anchored in agriculture, supported by modest engagement in services, fisheries, and small-scale commerce. While there is some diversification, the predominance of crop and livestock production suggests that expanding agro-processing and non-agricultural enterprises could strengthen economic resilience in the region.

Region 9

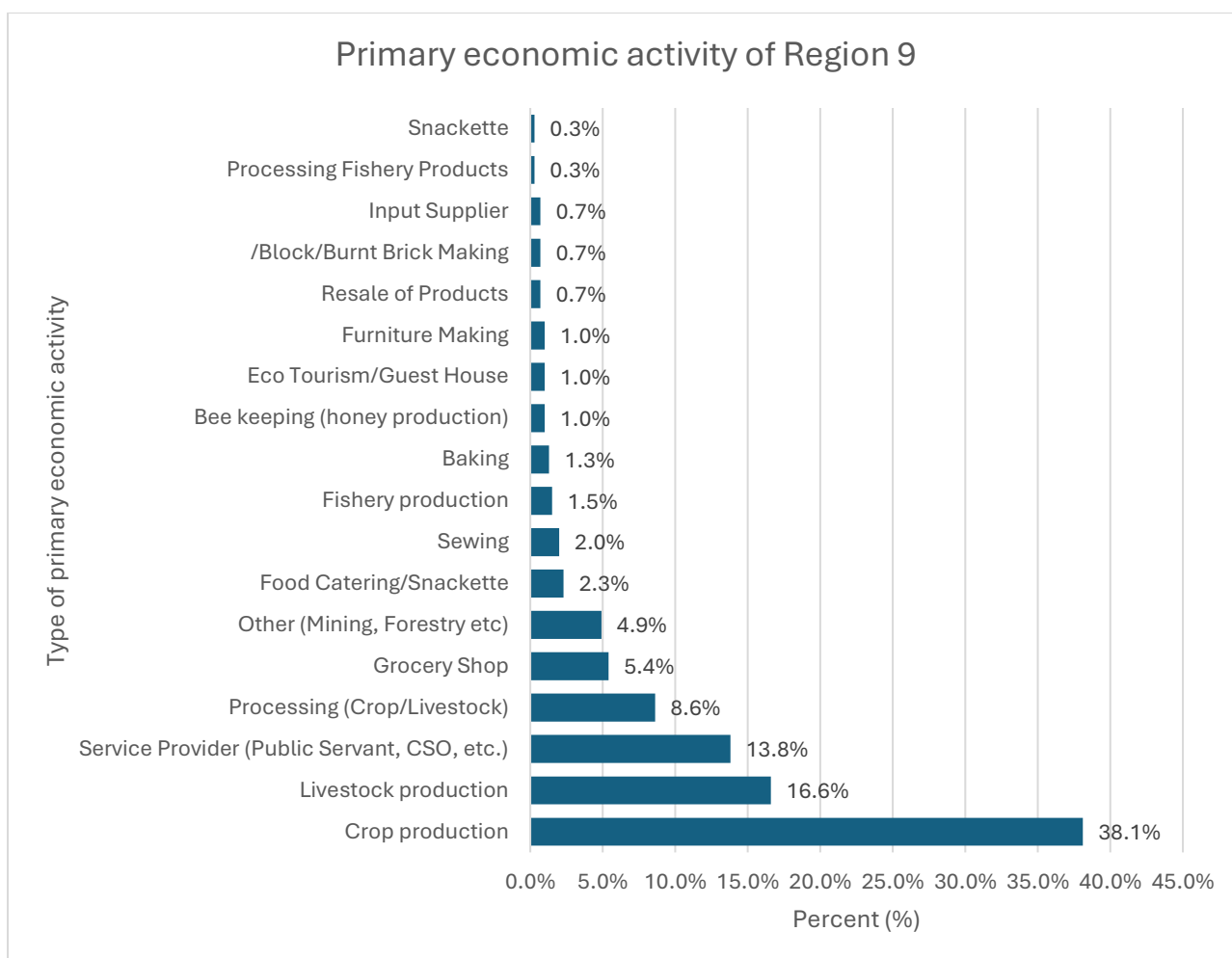


Figure 8: Primary economic activity of Region 9

For Region 9, the activity breakdown shows a strong agricultural foundation, with crop production as the leading livelihood source at 38.1%, followed by livestock production at 16.6%. Combined, these account for over half (54.7%) of all reported activities, underscoring the region's heavy dependence on primary agriculture.

The third largest category is service provision—including public servants, CSO staff, and community workers—at 13.8%, reflecting the role of administrative, social, and extension services in supporting communities. Agro-processing (crop/livestock) ranks next at 8.6%, showing some level of value addition to raw agricultural products.

Smaller shares of the economy are tied to trade and alternative resource-based activities, such as grocery shops (5.4%) and other livelihoods like mining and forestry (4.9%). Food-related microenterprises—food catering/snackette services (2.3%), baking (1.3%), and

processing fishery products (0.3%)—together represent modest but present opportunities for local income generation.

Other livelihood options include sewing (2.0%), fishery production (1.5%), beekeeping (1.0%), eco-tourism/guest houses (1.0%), and furniture making (1.0%). Less common activities such as resale of products (0.7%), block/burnt brick making (0.7%), input supply (0.7%), and small snackette operations (0.3%) remain niche and supplementary.

Overall, Region 9's economy is firmly rooted in agricultural production, supported by a modest but diverse set of services, small-scale processing, and non-agricultural ventures. The data suggests scope for expanding agro-processing, eco-tourism, and small-scale enterprise development to complement the dominant agricultural base and improve economic resilience.

6. HESADP project benefits

6.1. Households Benefitting from Training or PCIPs (HESADP)

Across Regions 1 and 9, the majority of respondents reported benefiting from training participation or the PCIPs delivered through the HESADP. In Region 1, 279 respondents (82%) indicated they had benefited, while 61 respondents (18%) reported no benefit. In Region 9, 370 respondents (80%) stated they had benefited, compared to 90 respondents (20%) who did not.

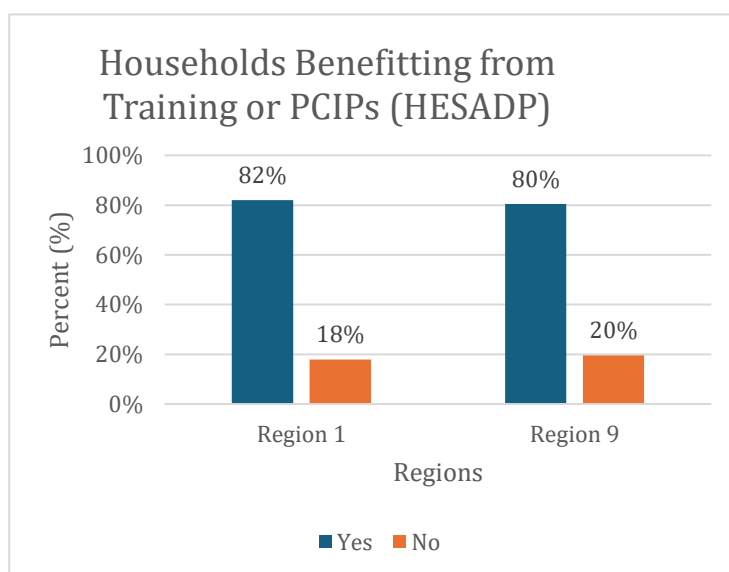


Figure 9: Households benefitting from training or PCIPs (HESADP)

While both regions recorded high levels of respondents benefiting from project-supported training and PCIPs, Region 1 reported a slightly higher proportion compared to Region 9 (82% vs. 80%), indicating a marginal difference in reach.

6.1.2 Training

Figure 10: Households benefitting from training

Out of the 800 respondents surveyed, 415 individuals (51.9%) reported that they or a household member had received training, while 385 (48.1%) indicated they had not. This shows that just over half of the surveyed population

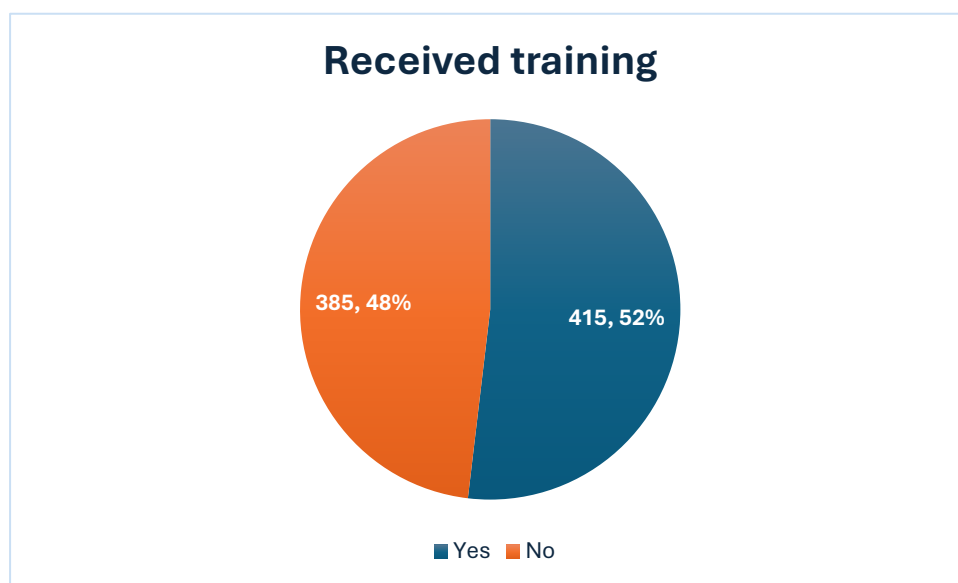


Figure 11: Beneficiaries of training courses

participated in at least one training opportunity during the project period—demonstrating a commendable level of outreach and engagement. Specifically, 55.2% of respondents in Region 1 and 75.6% in Region 9 reported that they or a household member had received training.

Overall, about 48.1 % of respondents reported that neither they nor their household members participated in any training activity. This share was significantly higher in Region 1, where nearly half (44.8%) reported no participation, compared to only 24.4 % in Region 9.

Participation patterns differed significantly between regions. In particular, Region 9 recorded substantially higher participation in training on Agri-Business and Processing (29.4%) and Monitoring and Social Development (10.7%), suggesting a greater emphasis on value-added and community development topics in that region. Region 1 respondents were more engaged in Agriculture and Livestock training (22.8%), reflecting a stronger focus on primary production activities.

Nutrition and Food Preparation showed moderate and comparable participation in both regions (Region 1: 11.1%, Region 9: 15.2%).

Participation in ICT and Technical Skills was relatively balanced between the two regions (Region 1: 4.6%, Region 9: 4.8%), indicating a consistent level of access or interest across locations.

Participation in Pest, Disease & Environmental Practices training was low across both regions, and especially in Region 1 (1.1%).

The data indicate varying levels of training participation between Region 1 and Region 9, with Region 9 demonstrating higher overall engagement in several thematic areas, particularly agri-business and social development. Conversely, Region 1 respondents showed greater involvement in agricultural and livestock training but had a significantly higher rate of non-participation overall. A detailed breakdown of participation rates in specific training categories and courses for each Region is provided in Table 8.

Table 8: Participation in Training Courses by Category and Region

Training Group	Training Course	Region 1 (%)	Region 9 (%)	Total (%)
None Reported	None	44.8	24.4	30.9
Nutrition and Food Preparation	Nutrition Awareness (Meal Prep)	9.1	13.3	12
Agriculture and Livestock	Livestock Production Practices	15.9	4	7.8
Agri-Business and Processing	Financial Management	2.8	9.2	7.1
Monitoring and Social Development	Social and Gender Equity	0	6.9	4.7
Agri-Business and Processing	Business Management	1.8	5.2	4.1
Agri-Business and Processing	Project Management	4.8	3.4	3.9
Agriculture and Livestock	Crop Production Practices	5.3	2.9	3.7
Agri-Business and Processing	Marketing	2	4.2	3.5
Agri-Business and Processing	Packaging and Labeling	1.3	4.6	3.5
Agri-Business and Processing	Agro-processing	2.5	2.8	2.7
Monitoring and Social Development	Monitoring and Evaluation	0.5	3.8	2.7
ICT and Technical Skills	Garment Construction (Sewing)	4.6	1.5	2.5
Nutrition and Food Preparation	Catering/Baking	2	1.8	1.8
Agriculture and Livestock	Good Agriculture Practices	1.3	1.6	1.5
Pest, Disease & Environmental Practices	Beekeeping	0.3	1.5	1.1
ICT and Technical Skills	Livestock Housing Construction	0	1.6	1.1
Pest, Disease & Environmental Practices	Pest and Disease Management	0.5	0.9	0.8
Pest, Disease & Environmental Practices	Climate Awareness	0.3	0.9	0.7
Pest, Disease & Environmental Practices	Environmental Awareness	0	1.1	0.7
Pest, Disease & Environmental Practices	Fish Farming (Aquaculture)	0	1.1	0.7
Agriculture and Livestock	Climate Smart Agriculture / Shade House Production	0.3	0.6	0.5
ICT and Technical Skills	Information and Communication Technology (ICT)	0	0.7	0.5
ICT and Technical Skills	Joinery / Furniture Making	0	0.5	0.3
ICT and Technical Skills	Construction (Block Making)	0	0.5	0.3

Agriculture and Livestock	Participatory Integrated Climate Services for Agriculture (PICSA)	0	0.2	0.2
Agriculture and Livestock	Animal Husbandry (access to clean water, shelter, sanitation, stocking density)	0	0.4	0.2
Pest, Disease & Environmental Practices	Organic Pest and Disease Management Practices	0	0.1	0.1
Pest, Disease & Environmental Practices	Inorganic Pest and Disease Management Practices	0	0.1	0.1
Nutrition and Food Preparation	Feeding and Nutrition (Pasture mgmt, Feed quality, Feeding strategies)	0	0.1	0.1

In Region 1, the training course with the highest reported participation was *Livestock Production Practices* with 15.9 % of respondents indicating engagement. The second-highest training in Region 1 was *Nutrition Awareness (Meal Preparation)*, with 9.1 % of the responses. This suggests a robust interest in nutritional practices, though still secondary to production-based training. On the other end of the spectrum, Region 1 recorded zero participation in several technical and social development trainings. These included *Social and Gender Equity*, *Livestock Housing Construction*, *Environmental Awareness*, *Fish Farming*, as well as all other ICT and pest management-related courses beyond sewing and beekeeping.

In contrast, Region 9 showed a slightly different pattern of engagement. The highest reported training course in this region was *Nutrition Awareness (Meal Preparation)*, with 13.3 % of respondents participating, suggesting a stronger emphasis on dietary and household well-being. The second-highest participation was in *Financial Management*, under Agri-Business and Processing, with 9.2 %. This indicates a strong interest in business-related competencies and financial literacy in Region 9. Several courses, however, recorded no participation at all. These include *Participatory Integrated Climate Services for Agriculture (PICSA)*, *Organic and Inorganic Pest and Disease Management Practices*, and *Feeding and Nutrition (Pasture Management, Feed Quality, Feeding Strategies)*. The absence of uptake in these specialized topics may suggest either insufficient outreach or limited contextual relevance within communities.

When considering the total combined responses across both regions, the most widely attended course was *Nutrition Awareness (Meal Preparation)*, with 12.0 % of respondents indicating participation. This was followed by *Livestock Production Practices* at 7.8 %, reinforcing the importance of both nutritional and agricultural knowledge across project areas. In terms of lowest participation overall, three courses recorded the lowest participation rates, each with only 0.1 % of respondents reporting

participation. These were *Organic Pest and Disease Management Practices*, *Inorganic Pest and Disease Management Practices*, and *Feeding and Nutrition (Pasture Management, Feed Quality, Feeding Strategies)*.

6.1.3 Households benefitted from Public/Collective Investment Plans as a result of the HESAD Project

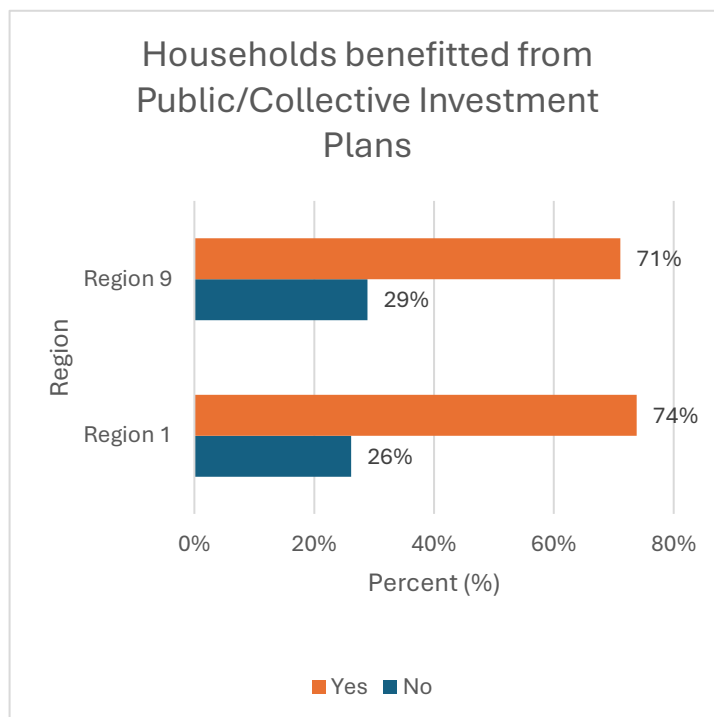


Figure 12: Share of households that benefitted from PCIPs

The results show that a large majority of interviewed households in both regions reported benefiting from Public/Collective Investment Plans (PCIP) under the HESAD Project. In Region 1, nearly three-quarters of respondents (251 respondents, 73.8%) reported benefiting from at least one PCIP, while in Region 9 just over 71% (327 respondents) did so. This indicates that PCIPs achieved broad coverage across communities and were widely perceived as delivering tangible results.

At the same time, benefits were not universal. In Region 1, 26.2% of respondents reported that they did not benefit from any PCIP, while in Region 9 the corresponding share was 28.5%. Thus, despite notable investments, about one in four surveyed households in each region did not directly benefit from infrastructure or community interventions undertaken in their communities under the PCIPs.

Across both regions, the most frequently reported type of investment under the PCIPs was the construction or revetment of community bridges, roads, or walkways; this type of investment was cited by 25.9% of respondents in Region 1 (88 respondents) and 22.4% of respondents in Region 9 (103 respondents). Transport- and access-related infrastructure therefore represents the most widely distributed and tangible form of public investment under the project.

In Region 1, other investment types were also prominent. Implementation of rainwater harvesting and storage was reported by 13.5% of respondents, construction or upgrading of school meal kitchens by 12.9%, and provision of farming tools by 10.3%. These figures reflect a relatively strong emphasis on agricultural production, water security, and food systems support in Region 1.

In Region 9, the investment profile shows instead a stronger concentration on community facilities and public infrastructure. Construction or upgrading of multi-purpose centers or village benabs (11.7%), sports grounds (11.3%), and sanitary blocks (11.3%) rank among the most frequently cited interventions. Extension of water systems (7.2%), installation of street lights (7.0%), and upgrading of village offices (6.1%) were also notable. Overall, the pattern suggests that Region 9's investments were more strongly oriented toward community buildings, public amenities, and sanitation infrastructure

More specifically, differences in PCIP investment profiles across the two regions can be characterized as follows (see Table 9):

- Implementation of rainwater harvesting and storage was notable in Region 1 (13.5%) but minimal in Region 9 (0.4%).
- Construction or upgrade of hot meal kitchens was more balanced, reported by 12.9% of respondents in Region 1 and 9.1% in Region 9.
- Provision of farming tools benefitted 10.3% of Region 1 respondents, compared to only 2.4% in Region 9.
- In Region 9, community facilities such as multi-purpose centers or village benabs (11.7%), construction of pavilions/sports grounds (11.3%), and sanitary blocks (11.3%) ranked highly, but these interventions saw minimal uptake in Region 1 (each below 1%).
- Other PCIP project types also showed strong regional bias. Installation of street lights (7.0%) and extension of water systems (7.2%) were more prevalent in Region 9, whereas acquisition of tablets and ICT equipment (5.0%) and impoldering of farmland (3.2%) were more common in Region 1.

Table 9: Types of Public and Collective Investment Plans Implemented by Region

Public/Community Investment Project	Reg 1	Reg 9
None	26.2	28.5
Construction/Revetment of Community Bridge/Road/Walkway	25.9	22.4

Construction or Upgrade of Hot Meal Kitchen (School Feeding Programme)	12.9	9.1
Construction or Upgrade of Multi-purpose Center or Village Benab	0.3	11.7
Construction of Pavilion, Fencing and/or Revetment of Sports Ground	0.3	11.3
Construction or Upgrade of Sanitary Block	0	11.3
Implementation of Rainwater Harvesting and Storage	13.5	0.4
Provision of Farming Tools	10.3	2.4
Extension of Water System	2.6	7.2
Installation of Street Lights		7.0
Construction/Upgrading/Extension and Furnishing of Village Office	0.3	6.1
Acquisition of Tablets, Printers and Computers for ICT Hub	5.0	0.7
Impoldering of Farm Land	3.2	1.3
Construction of Market	0.6	1.3
Cassava Germplasm Bank		1.7
Fencing of Farmlands	0.3	3.5
Acquisition of Boat and Engine	2.1	0
Construction/Upgrade of Multi-purpose Center or Village Benab		
Construction/Upgrading/Extension and Furnishing of Village Office		
Fencing of Farmlands/Paddocks		
Construction/Upgrade of Sanitary Block		

It is also important to note that 17.7% of respondents in Region 9 reported benefiting from two or more types of interventions under the PCIPs, indicating that in a significant number of cases the PCIP investments addressed multiple community needs simultaneously. In Region 1, the share reporting multiple PCIP benefits was considerably lower (around 3%), suggesting a more limited overlap of interventions.

6.1.3.1. Direct Benefits to respondents and household members from the Public/Community Investment Projects

Respondents were asked to further indicate how the PCIPs had directly benefited them and/or their household members. Table 10 presents the aggregate results and the regional comparison of reported benefits. Importantly, all respondents who indicated in the previous question that they had benefited from a PCIP also identified at least one specific benefit associated with their participation. The full consistency between the two questionnaire items offers further supporting evidence of the perceived effectiveness of the PCIP interventions. Moreover, 16.7% of respondents in Region 9, and 11% of respondents in Region 1, reported two or more distinct benefits arising from the PCIPs,

confirming that in a significant share of cases the PCIP interventions addressed more than one household need simultaneously.

The findings highlight that employment generation has been one of the most significant and visible effects of PCIPs across both regions. Permanent part-time employment was reported by 22.1% of respondents in Region 1 and 19.1% in Region 9, making it one among the most frequently cited benefits in both regions. Temporary or casual employment was particularly prominent in Region 9 (25.9%), while still present in Region 1 although at a lower level (7.1%). This pattern seems consistent with the stronger emphasis on construction-related and infrastructure investments in Region 9. Permanent full-time employment was reported by a smaller share of respondents in both regions (2.4% in Region 1 and 2.8% in Region 9), indicating that, while PCIPs generated significant employment opportunities, these were more commonly part-time or temporary rather than long-term full-time positions. Thus, in total, some type of employment benefit from PCIPs was reported by 31.6 of respondents in Region 1, and 47.8% of respondents in Region 9.

Beyond employment, improved access to water was reported by 13.5% of respondents in Region 1 and 6.5% in Region 9, reflecting the relatively stronger focus on water-related investments in Region 1. Improved transportation was also more frequently reported in Region 1 (10.9%) than in Region 9 (2.2%), consistently with the somewhat higher importance given to road infrastructure in that region. In Region 9, improved sanitary facilities (9.8%) and improved access to farm (9.8%) feature prominently among reported benefits, aligning with the region's stronger relative emphasis on sanitation and community infrastructure.

There are indications that PCIPs also contributed to building local market linkages in both regions. Selling products to school kitchens was reported at similar levels in both regions (5.0% in Region 1 and 6.5% in Region 9), while improved or better access to community markets was reported by 5.6% of respondents in Region 1 and 1.7% in Region 9.

Conversely, production-oriented benefits were reported only by a small share of respondents in both regions. Improved access to agricultural equipment and tools was cited by 2.4% in Region 9 and 0.7% in Region 1, while access to improved planting material was reported by 1.5% in Region 9 and 0.3% in Region 1. Overall, these findings suggest that production-oriented benefits from PCIPs were relatively limited in scope: while infrastructure, employment, sanitation, and community facilities were widely

reported, direct support to strengthen agricultural production conditions (such as access to equipment, tools, or improved planting material) reached only a small proportion of households in both regions. This pattern is consistent with the training analysis presented above, which shows comparatively low participation in specialized agricultural and pest management courses, particularly those related to improved production practices and climate-smart agriculture. Taken together, the evidence indicates that collective-oriented interventions under the project (both PCIPs and training) placed comparatively less emphasis on strengthening primary agricultural production conditions than on infrastructure, community services, and employment-related outcomes.

Table 10: Benefits of Public/Community Investment Projects – Regional Comparison

Benefit	Reg 1 rev	Reg 9 rev	Total %
Permanent part-time employment	22.1	19.1	19.2
None	26.2	28.5	16.9
Temporary or casual employment	7.1	25.9	14.0
Improved access to water	13.5	6.5	9.0
Improved transportation	10.9	2.2	5.5
Selling products to school kitchen	5.0	6.5	5.5
Improved access to farm		9.8	5.3
Other	2.5	8.0	5.3
Improved sanitary facilities (washroom)		9.8	5.3
Better access to farm	7.6	9.8	3.1
Access to technological devices for online education	5.0	1.1	2.6
Permanent full-time employment	2.4	2.8	2.5
Better access to community market	5.6		2.2
Access to agricultural equipment and tools	0.6	2.4	1.5
Improved access to community market		1.7	0.9
Access to improved planting material	0.3	1.5	0.8
Access to better planting material			0.1

6.1.3.2. Focus on employment generation from PCIPs

Across both regions, employment generation emerges therefore as one of the most frequently reported benefits associated with PCIP participation. Given the prominence of employment among the reported outcomes, it is relevant to examine which types of PCIPs were most effective in generating jobs for local community members, and whether these jobs were primarily short-term or more long-term in nature. The results for the most relevant types of PCIP investments are reported in Tables 11 and 12 below, respectively covering Region 9 and Region 1.

In Region 9, employment effects were strongest for infrastructure-related investments. Bridge and road projects generated employment for 65% of respondents, largely through temporary jobs (over 50%). Sports grounds show an even higher overall employment effect (nearly 77%), again primarily driven by temporary employment. Street lighting and sanitary facilities follow a similar pattern, with employment effects concentrated in short-term work.

However, some PCIPs in Region 9 were more clearly associated with longer-term employment opportunities. Multipurpose facilities and village offices show particularly high shares of permanent part-time employment (around 40–46%), while water supply systems stand out for the highest share of permanent full-time employment (over 18%). School meal kitchens PCIPs also combine temporary employment with a meaningful share of more permanent roles. Overall, employment outcomes in Region 9 appear largely driven by temporary construction activities, with more durable employment emerging mainly in facilities and investments requiring ongoing management or service provision.

In comparison, employment benefits in Region 1 are more strongly oriented toward longer-term roles. Bridge and road infrastructure generated employment for half of participants, predominantly through permanent part-time positions (over 45%) rather than purely temporary jobs. Also in Region 1, school meal kitchens generated substantial employment, combining temporary employment (over 40%) with a significant share of more permanent roles. Overall, the evidence suggests that while Region 9 employment impacts are more closely tied to short-term infrastructure works, Region 1 interventions (particularly those related to road infrastructure and productive support) are more strongly associated with longer-term job creation.

Table 11: Employment generation by the main types of PCIP (Region 9)

PCIP type	Any employment benefit (%)	Permanent part-time (%)	Permanent full-time (%)	Temporary / casual (%)
Bridge and road infrastructure	65	10.7	1	53.4
Multipurpose facility	61.1	40.7	0	22.2
Sports ground development	76.9	25	11.5	50
Sanitary facilities (washrooms)	46.2	15.4	0	30.8
School meal kitchen	64.3	35.7	11.9	26.2
Water supply system	60.6	24.2	18.2	30.3
Street lighting	53.1	15.6	0	37.5
Village office construction/rehabilitation	85.7	46.4	0	39.3

Table 12: Employment generation by the main types of PCIP (Region 1)

PCIP type	Any employment benefit (%)	Permanent part-time (%)	Permanent full-time (%)	Temporary / casual (%)
Bridge and road infrastructure	50	45.5	1.1	4.5
Rainwater harvesting system	6.5	6.5	0	0
School meal kitchen	68.2	13.6	11.4	43.2
Farming tools and equipment	74.3	68.6	5.7	0

6.1.3.3. Use of Project Infrastructure

Region 1

In Region 1, the majority of respondents reported that both the infrastructure and the projects supported under the initiative remain active.

Table 13: Post-Implementation Status of Project Infrastructure and Operations – Region 1

Question	Yes %	No %
6.3 Is the infrastructure still being used?	84.4	15.6
6.5 Is the project still operating?	83.1	16.9

For infrastructure use (Q.6.3), 84.4% confirmed continued use, while 15.6% indicated it was no longer in use. Similarly, for project operations (Q6.5), 83.1% stated that activities

such as livestock rearing, retail outlets, or processing facilities were still running, compared to 16.9% who reported they had ceased.

It was noted from the reasons provided that the infrastructure is no longer in use due to either the construction being on hold or a loss of interest among group members.

Overall, the findings suggest that Region 1 has a high rate of sustained infrastructure and project activity, with discontinuation in a small minority of cases largely linked to operational pauses or dissatisfaction among members.

Region 9

Table 14: : Post-Implementation Status of Project Infrastructure and Operations - Region 9

Question	Yes %	No %
6.3 Is the infrastructure still being used?	81.0	19.0
6.5 Is the project still operating?	92.8	7.2

In Region 9, a large majority of respondents indicated that the infrastructure constructed under the project is still in use, with 81.0% reporting continued use compared to 19.0% who said it is no longer being used.

An even higher share, 92.8%, stated that the project itself is still operating (e.g., livestock rearing, grocery shop/bakery/snackette, garment or agro-processing facility are still active), while 7.2% reported that operations had ceased.

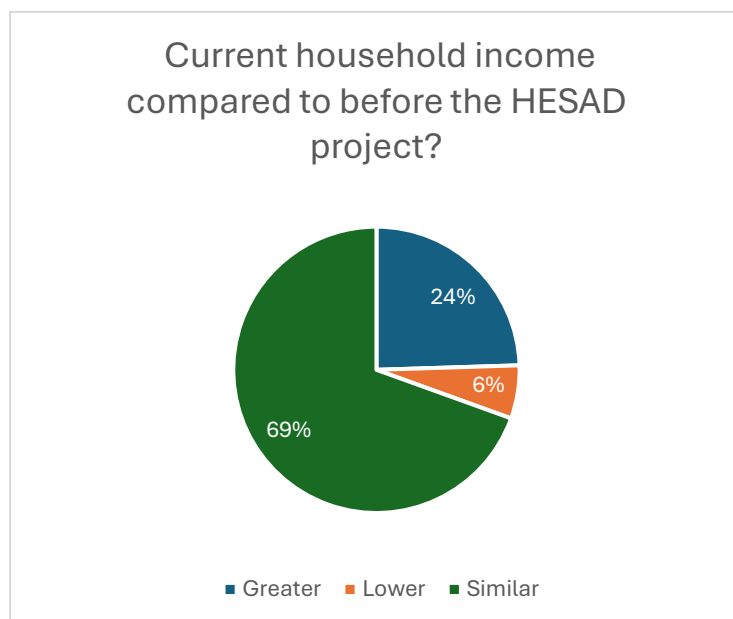
Reasons given were that some facilities, such as benabs and washrooms, were designed primarily for meetings, social activities, or training purposes rather than continuous operational use. In one case, a group temporarily paused project activities, resulting in non-use of the infrastructure at the time of the survey.

7. Household Income Compared to the Pre-Implementation Period

As part of the endline survey, 649 respondents from Regions 1 and 9, who benefited from either training or PCIPs under the HESADP, were asked to compare their current household income to the period before the project's implementation. The responses provide a useful overview of the project's overall perceived impact on household-level economic outcomes.

Overall Findings

- 24% of respondents (159 individuals) reported that their household income was greater than before the HESAD Project.
- 6% (39 respondents) indicated that their income was lower.
- The majority, 69% (451 respondents), stated that their household income had remained similar.



These results indicate that most households reported having similar

Figure 13: Current household income compared to before the HESAD project

income after implementation of the project. However, nearly one-quarter reported income growth, reflecting the positive reach of the project for a substantial subset of beneficiaries. As further discussed below, income effects were significantly more pronounced for households that were directly engaged in the Business Plans (BP) supported by the project.

In comparing household income changes across regions, a higher proportion of respondents in Region 1 (28%) reported that their income was greater than before the HESAD Project, compared to 22% in Region 9. Meanwhile, Region 9 had a slightly higher share of respondents (7%) indicating a decline in income, compared to 5% in Region 1. In both regions, the majority of respondents reported that their income had remained similar to pre-project levels (71% in Region 9 and 67% in Region 1).

Region 1

Out of 279 respondents in Region 1, 28% reported that their household income was greater than before the HESAD Project, while 5% experienced a decline, and the majority (67%) stated that income levels remained similar to the pre-project period.

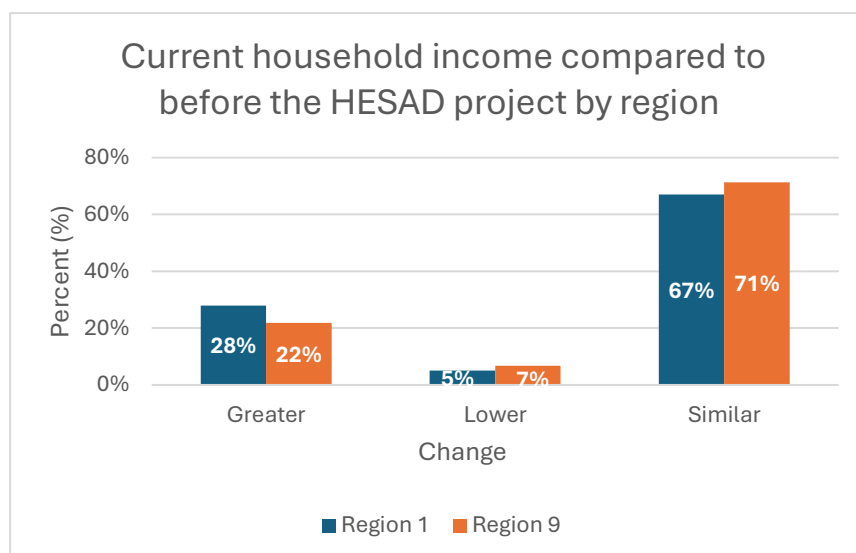


Figure 14: Current household income compared to before the HESAD project by region

Among those who reported an increase in income, 95% (77 respondents) confirmed that the improvement was attributable to HESAD-supported activities, such as access to employment, agricultural support, or business facilitation. Only 1 respondent (1%) stated the increase was unrelated to the project.

The analysis of reasons cited for lower income reveals several underlying challenges affecting respondents. Out of 14 respondents, the most common factor was limited or no employment opportunities, which accounted for 29% of the lower-income responses. This result further highlights the relevance of the capacity for employment generation demonstrated by the PCIPs (as discussed above), particularly in hinterland communities where labor markets are thin and the reliance on primary production as the main household income source remains high. In such context, even part-time or temporary employment linked to community investments can play a critical role in stabilizing and diversifying household incomes. This was followed by lack of involvement in projects or support received and general dissatisfaction, each reported by 21% of respondents. Additionally, project-related challenges—such as temporary work or delays in the release of funds—were mentioned by 14%, alongside farming constraints, including limited assistance to farmers, also at 14%. Altogether, these factors highlight a combination of structural employment gaps, project-related limitations, and agricultural difficulties contributing to lower income among the affected individuals.

These findings suggest that while a substantial portion of households benefitted from increased income due to project interventions, a small minority continued to face challenges related to employment and agricultural support.

Region 9

In Region 9, among 370 respondents, 22% reported that income was greater than before the project, 7% indicated it was lower, and 71% said it remained similar. Of those who reported income increases, 93% (75 respondents) directly attributed the change to HESAD Project activities. Only 7% (6 respondents) did not associate their improved income with the project.

The reasons given by respondents for lower income varied, with the majority pointing to mixed or unclear factors. Out of the 27 respondents, 22.2% cited lack of employment, 51.9% gave mixed or unclear reasons, 7.4% mentioned lack of inputs/tools, 3.7% reported absence of projects, 3.7% identified low purchasing power in the community, 3.7% pointed to structural limitations such as geographic isolation, 3.7% indicated neutral impact with income unaffected, and 3.7% provided no reason.

While the majority of households in Region 9 did not report a change in income, the share that experienced growth (22%) represents a notable impact, with the vast majority crediting the HESAD Project. Reasons for income stagnation or decline were more diverse and included both structural and project-related challenges.

8. Production/output when compared to the pre-implementation period (before HESAD project)

Among the 371 respondents involved in production activities, a follow-up question was posed to assess how their current level of production compares to the period before the implementation of the HESAD Project.

When combined across both regions, 19 % of respondents experienced an increase in production, 25 % reported a decrease, and 56 % stated that production levels were similar to those before the implementation of the HESAD Project.

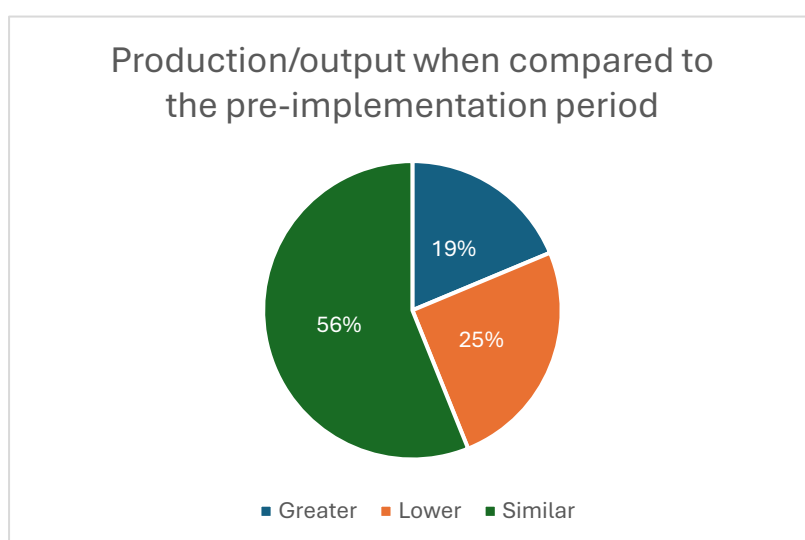


Figure 15: Current production/output compared to before the HESAD project by region

The reported changes in production appear to be closely associated with exposure to climatic shocks and stressors. Among households that experienced significant climate events during the past two years, only 13.4% reported an increase in production (below the overall average), while 29.9% reported a decline, a higher-than-average share. In contrast, among households that had not been exposed to significant climatic events, 27.1% reported increased production (well above the overall average) while only 17.9% reported a decrease. These patterns suggest that climatic shocks have played a substantial role in shaping short-term production outcomes, potentially offsetting or constraining gains that may have otherwise emerged under project-supported activities. The interaction between production, exposure to shocks, and resilience capacities is examined in greater detail in Section X.

In Region 9, 23 % of respondents reported that their production had increased, while 28 % indicated a decline, and 49 % stated that production levels had remained similar to the pre-project period. In Region 1, a smaller proportion (15 %) reported increased production, 22 % experienced a decline, and a majority of 63 % indicated that their production remained unchanged. These findings suggest that while the majority of households experienced

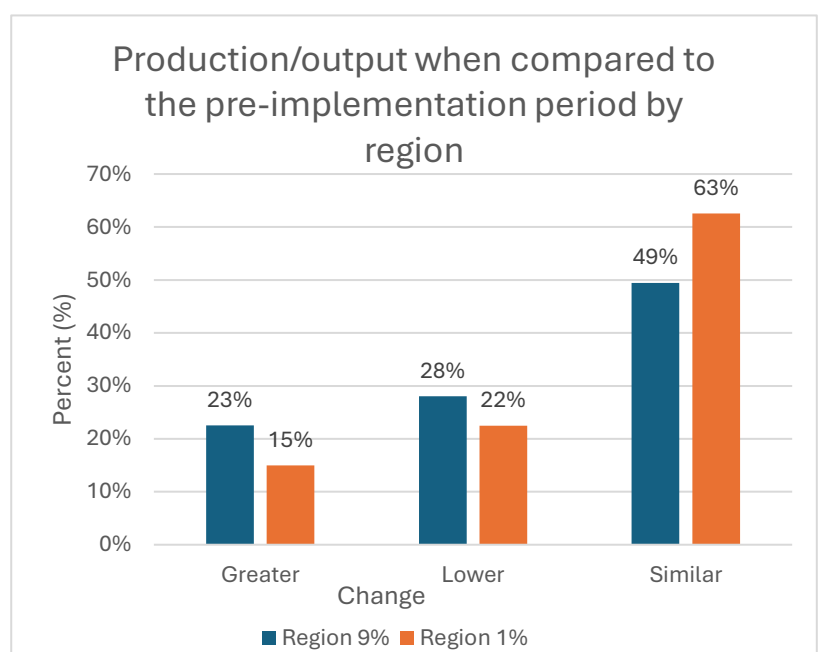


Figure 16: Production/output when compared to the pre-implementation period by region

no significant change in production, Region 9 exhibited a more varied pattern, with relatively higher proportions reporting both improvements and setbacks compared to Region 1.

The association with exposure to climate events is evident at the regional level as well. Among households that were not exposed to climate shocks during the past two years, production increases were reported by 35.5% of respondents in Region 9 and 20.5% in Region 1; both values are well above their respective regional averages. By contrast, among households that experienced climate events, production increases were reported by only 15.5% of respondents in Region 9 and 11.0% in Region 1.

When the analysis is restricted to respondents who were involved in Business Plans (BPs), a different pattern emerges, although it should be noted that the response rates for this question are rather low. Among BP participants who answered the production change question (71 respondents across both regions), 29.6 per cent reported an increase in production, compared to only 16 per cent among non-BP respondents (300 individuals). This suggests that participation in BPs is associated with a higher likelihood of reporting positive production changes. Moreover, a lower share of BP participants (21.1%) reported decreases in production compared to non-BP participants (26.3%).

While this comparison suggests a positive association between BP participation and production outcomes, the results should be interpreted with caution. In particular, ambiguity remains regarding the interpretation of the production change variable. It is not entirely clear whether respondents referred to changes in their individual production activities, activities conducted specifically under the BP, or their overall household production. This lack of clarity may affect the consistency of responses. Moreover, the results appear only partially aligned with the higher rates of reported income improvements observed elsewhere in the survey, raising further questions regarding the internal consistency of the data. Given that this variable was not systematically tracked in the project monitoring dashboard, it is not possible to triangulate these findings with administrative data. For these reasons, as well as for the limited number of responses, the reported production changes should be considered indicative of underlying trends and interpreted with caution.

Table X: Reported production changes by BP participation (Regions 1 and 9 combined)

Production change	BP participants (n=71)	Non-BP respondents (n=300)
Greater	29.6% (21)	16.0% (48)
Lower	21.1% (15)	26.3% (79)
Similar	49.3% (35)	57.7% (173)

9. Group and Household Participation in HESAD-Supported Business Plans

This section focuses on survey respondents who were directly involved in HESAD-supported Business Plans (BPs), examining their level of participation, the types of activities and benefits delivered by the BPs. As discussed above regarding the survey design, BP participants were deliberately oversampled, including both executive and ordinary group members, in order to allow for a more detailed assessment of their characteristics, roles, and perceived effects of the intervention. The purpose of this section is therefore to analyze the conditions and outcomes associated with BP participation, rather than to estimate overall outreach or participation rates in the wider beneficiary population, which were instead documented through the Project M&E Dashboards and administrative records.

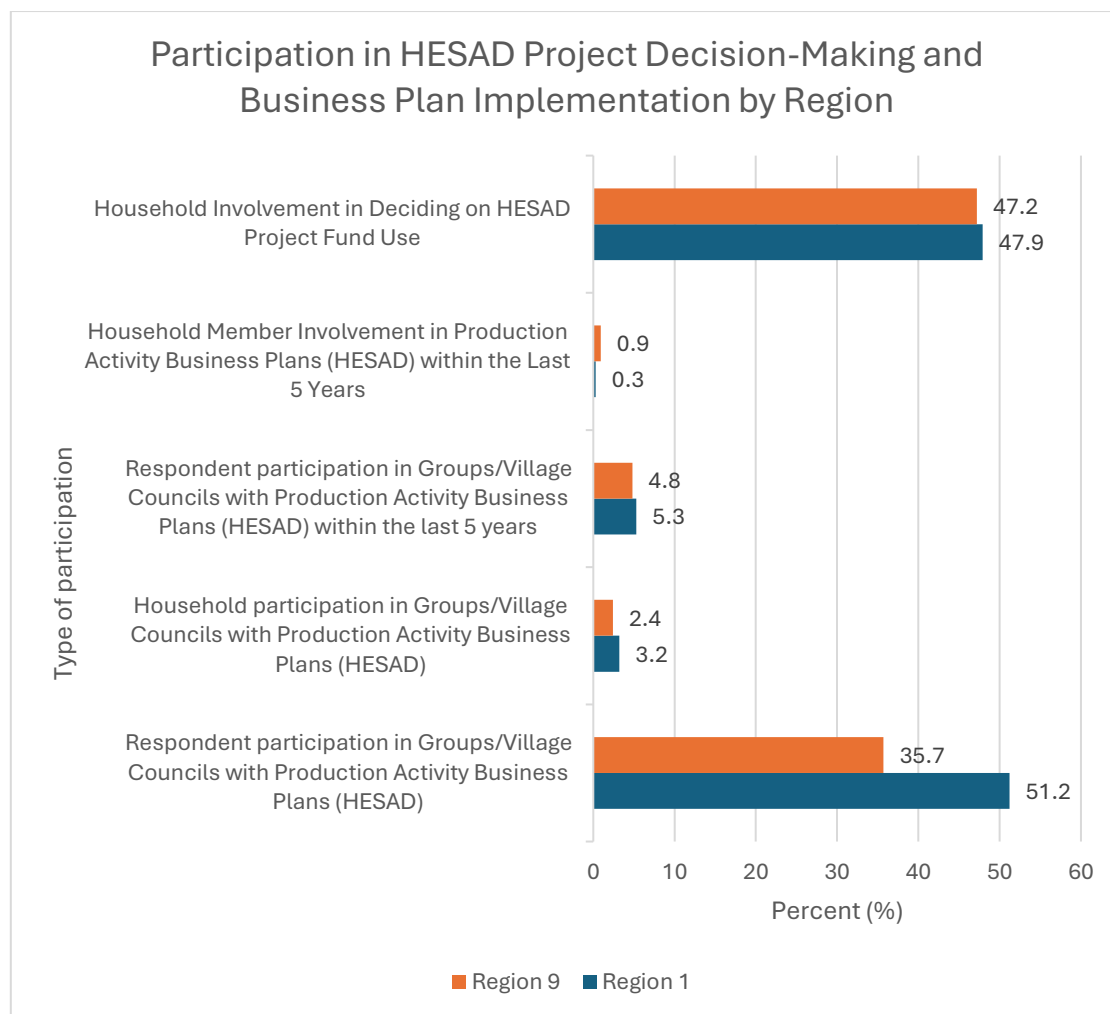


Figure 17: Participation in HESAD Project Decision-Making and Business Plan Implementation by Region

Direct personal participation (Q5.1)

A slightly higher proportion of respondents in Region 1 (51.2%) reported being part of a group or village council that had implemented a HESAD-supported business plan, compared to 35.7% in Region 9. This suggests stronger direct involvement at the individual level in Region 1.

Household member participation (Q5.2)

Household-level involvement by other household members was low in both regions (3.2% in Region 1 and 2.4% in Region 9), indicating that participation in Business Plans is largely concentrated in the respondent themselves. This implies that the information analysed in this section primarily reflects the perspectives of individuals with direct and personal involvement in BP implementation and activities, thereby strengthening the reliability of the reported effects.

Past five-year participation (Q5.3 & Q5.4)

Only 5.3% of respondents in Region 1 and 4.8% in Region 9 reported having personally participated in such a group within the last five years. Household member participation over the same period was even lower (0.3% in Region 1 and 0.9% in Region 9). This confirms that most involvement in Business Plans is closely linked to the HESAD project cycle rather than reflecting long-standing group membership predating the intervention. At the same time, given that the survey deliberately targeted current BP participants, these findings reinforce that the information collected primarily reflects the experiences of individuals directly engaged in project-supported activities, rather than more peripheral or historical members.

Decision-making on project funds (Q5.5)

Respondents in both regions reported similar involvement in deciding how HESAD funds were allocated in their villages: 47.9% in Region 1 and 47.2% in Region 9. This indicates a comparable level of community engagement in financial decision-making across the two regions.

9.1. Participation in HESAD-Supported Business Plans and Reported Household Income Increase by Region

As part of the Resilience Design and Monitoring Tool (RDMT) section of the endline questionnaire (see detailed analysis in Section 15), respondents participating in Business Plans groups were asked whether the implementation of the BP had contributed to an increase in household income. The results point to a strong income effect among BP-linked households. Overall, 76.1% of respondents associated with a Business Plan reported an increase in household income. The effect was particularly pronounced in Region 1, where 86.8% reported income growth, while Region 9 also showed a substantial share (74.4%). Although differences exist between the two regions, the findings consistently indicate that participation in Business Plans was strongly associated with positive income outcomes. Furthermore, a considerable proportion of respondents characterized these income gains as significant: 58% of BP-linked households in Region 1 and 44% in Region 9 described the income increase as substantial, while 29% in Region 1 and 30% in Region 9 reported more moderate

income improvements. This suggests that, beyond the high overall incidence of income growth, a large share of BP participants experienced meaningful economic gains.

These results differ markedly from the overall income change patterns observed across the full sample of beneficiaries. As reported above, only 28% of survey respondents in Region 1 and 22% in Region 9 indicated that their household income had increased since the start of the project. In contrast, a clear majority of households linked to Business Plans reported income growth due to their participation in BP. This divergence suggests that Business Plans have been the main direct driver of household income growth under the HESAD Project. The magnitude of the difference is especially striking in Region 1, where the share of BP-linked households reporting income increases is more than three times higher than in the overall sample.

In terms of different types of BP, it is also relevant to note that above-average income effects were reported for shorter-cycle and directly market-oriented activities like agroprocessing (100%), small-scale food enterprises like bakeries / snakettes (100%), shadehouses (84%) and poultry (79%). Conversely, cattle rearing BPs showed a relatively lower performance, with 59% participants reporting income increases. This suggests that cattle-based BPs may need a longer maturation periods before income effects fully materialize, and that other driving economic logics (e.g., stock increase) may have prevailed in the short-term over income generation.

Taken together, these findings indicate that the Business Plan modality has been effective in converting project support into concrete income-generating outcomes through engagement in productive enterprises. The high proportion of respondents attributing income gains to HESAD-supported activities further strengthens this conclusion. Overall, the evidence underscores the central role of the Business Plan approach within the project's economic impact pathway and highlights its strategic importance for future efforts to strengthen sustainable rural incomes in hinterland areas, where economic opportunities remain limited and dependence on primary production is high.

10. Dietary Changes and Food Security Trends

To assess household dietary changes and food security, respondents were asked a series of questions related to food access and consumption. These included whether households had to skip meals, reduce the quantity or variety of food consumed, or experienced concerns about food availability.

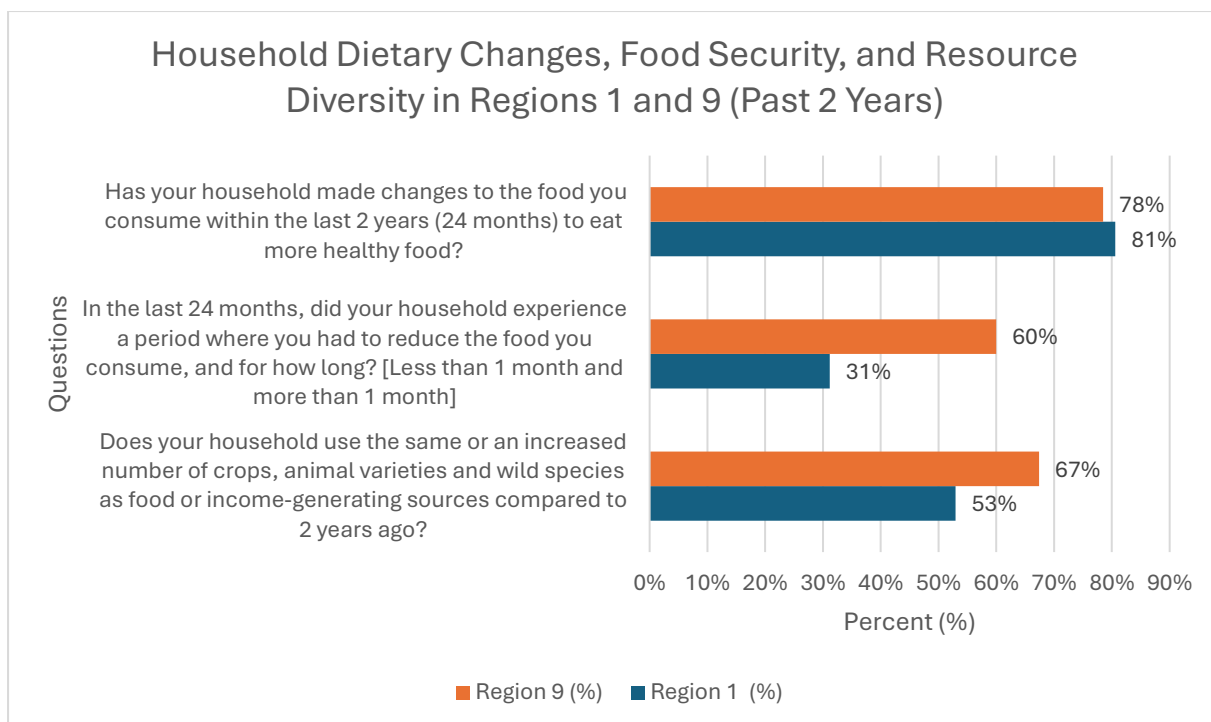


Figure 18: Household Dietary Changes, Food Security, and Resource Diversity in Regions 1 and 9 (Past 2 Years)

Overall, 61% of households reported using the same or an increased number of crops, animal varieties, and wild species as food or income-generating sources compared to two years ago. Region 9 reflected stronger engagement in this area (67%) relative to Region 1 (53%), indicating greater agricultural or foraging resilience among its households.

Food consumption reduction, a key indicator of food insecurity, was reported by 48% of households overall. The experience was significantly more prevalent in Region 9 (60%) than in Region 1 (31%). When disaggregated by duration, 21% of households reported short-term reductions in food intake (less than one month), while 27% endured more prolonged periods of reduced consumption (more than one month).

Despite these challenges, the majority of households demonstrated a strong commitment to improving nutrition. A combined 79% of respondents across both regions reported having made changes to their diets within the past two years to eat healthier food. Region 1 had a slightly higher percentage (81%) compared to Region 9 (78%), suggesting a widespread effort provided by the nutrition trainings and efforts through the HESADP project to adopt better eating practices across diverse geographic and socio-economic contexts.

The responses (see Table 16 and Table 17) provide key insights into the food security situation in Region 1 and Region 9.

Region 1

Table 15: Household Food Production, Consumption, and Dietary Changes – Region 1

Question	Mabaruma (% of region total)	Moruca (% of region total)	Total (%)
Does your household use the same or an increased number of crops, animal varieties and wild species as food or income-generating sources compared to 2 years ago?	34%	19%	53%
In the last 24 months, did your household experience a period where you had to reduce the food you consume, and for how long? [Less than 1 month and more than 1 month]	12%	19%	31%
[Duration category: Less than 1 month]	5%	9%	15%
[Duration category: More than 1 month]	6%	10%	16%
Has your household made changes to the food you consume within the last 2 years (24 months) to eat more healthy food?	48%	33%	81%

In Region 1, just over half of the surveyed households (53%) reported using the same or an increased number of crops, animal varieties, and wild species as sources of food or income compared to two years ago. This reflects a moderate level of continuity or diversification in food and livelihood sources. The sub-district of Mabaruma contributed the largest share to this figure (34% of the regional total), while Moruca accounted for 19%, indicating a stronger engagement with diversified production systems in Mabaruma.

With regard to food access, 31% of households experienced a period within the past 24 months during which they had to reduce their food consumption. Of these, 15% reported short-term reductions lasting less than one month, and 16% experienced more prolonged reductions lasting more than one month. The impact was more pronounced in Moruca, which accounted for 19% of all food reduction reports in the region and had higher proportions in both short-term (9%) and long-term (10%) categories. In comparison, Mabaruma contributed 12% of the regional total for food reduction, with slightly lower shares in both duration categories.

Despite these challenges, a significant 81% of households reported having made changes to the food they consume in the past two years in order to eat more healthily. This positive dietary shift was evident across both sub-districts, with Mabaruma accounting for 48% and Moruca for 33% of the regional total, suggesting a widespread effort to improve nutrition at the household level.

Region 9

Table 16: Household Food Production, Consumption, and Dietary Changes – Region 9

Question	Central Rupununi (% of region total)	South Pakaraimas (% of region total)	South Central Rupununi (% of region total)	Deep South Rupununi (% of region total)	North Rupununi (% of region total)	Total (%)
Does your household use the same or an increased number of crops, animal varieties and wild species as food or income-generating sources compared to 2 years ago?	14%	15%	14%	11%	14%	67%
In the last 24 months, did your household experience a period where you had to reduce the food you consume, and for how long? [Less than 1 month and more than 1 month]	12%	12%	13%	8%	14%	60%

<i>[Duration category: Less than 1 month]</i>	8%	6%	3%	4%	4%	26%
<i>[Duration category: More than 1 month]</i>	4%	5%	10%	5%	10%	34%
Has your household made changes to the food you consume within the last 2 years (24 months) to eat more healthy food?	15%	14%	18%	13%	18%	78%

Firstly, maintaining or increasing the number of crops, animal, and wild species used for food or income generation was reported by 67% of households across Region 9. This positive coping strategy was observed across all five sub-districts, with the highest proportion of respondents from South Pakaraimas (15%) and the lowest from Deep South Rupununi (11%). Central Rupununi, South Central Rupununi, and North Rupununi each contributed approximately 14% to the regional total, indicating relatively even engagement in diversified food sourcing practices across districts.

In addition, 60% of households reported experiencing a period in the last 24 months where they had to reduce their food consumption. This includes both short- and long-duration reductions. Specifically, 26% of households experienced food shortages for less than one month, while 34% reported more prolonged reductions lasting more than one month. Among those experiencing shorter-term shortages, Central Rupununi had the highest share (8%), followed by South Pakaraimas (6%). For longer-term shortages, the most affected were households in South Central Rupununi (10%) and North Rupununi (10%).

Furthermore, despite these challenges, 78% of households indicated that they had made dietary changes within the past two years to eat more healthily. The highest shares came from South Central Rupununi (18%) and North Rupununi (18%), suggesting growing awareness and proactive behavior towards healthier eating, even in areas facing food access constraints. Central Rupununi (15%) and South Pakaraimas (14%) also showed strong engagement in healthier dietary adjustments.

11. Minimum Dietary Diversity for Women (MDD-W)

MDD-W stands for Minimum Dietary Diversity for Women. It is a globally recognized indicator developed by the Food and Agriculture Organization (FAO) and FANTA (Food and Nutrition Technical Assistance) to assess micronutrient adequacy in women's diets.

MDD-W measures whether a woman of reproductive age (15–49 years) has consumed at least five out of ten defined food groups in the previous 24 hours.

Threshold:

- Adequate dietary diversity: Consumption of 5 or more food groups → Indicates higher likelihood of micronutrient adequacy.
- Inadequate dietary diversity: Consumption of less than 5 food groups → Suggests risk of nutrient deficiencies.

The 10 MDD-W Food Groups are:

1. Grains, white roots and tubers, and plantains
2. Pulses (beans, peas and lentils)
3. Nuts and seeds
4. Dairy
5. Meat, poultry and fish
6. Eggs
7. Dark green leafy vegetables
8. Other vitamin A-rich fruits and vegetables
9. Other vegetables
10. Other fruits

Overall

Table 17: Minimum Dietary Diversity for Women (MDD-W) for Region 1 and Region 9

Diversity Cut-off	<5 (N)	<5%	≥5 (N)	≥5%	Total	% of total
Overall						
Grand Total	75	14.42%	445	85.58%	520	100.00%
Ethnicity						
African	0	0.00%	1	0.19%	1	0.19%
Amerindian	70	15.14%	381	82.52%	451	86.73%
Chinese	0	0.00%	1	0.19%	1	0.19%
East Indian	0	0.00%	1	0.19%	1	0.19%
Mixed	5	6.67%	61	81.33%	66	12.69%
Age-range						
<18	1	4.55%	21	95.45%	22	4.23%

18–25	21	11.73%	97	88.27%	118	22.69%
26–40	38	13.55%	228	81.74%	266	51.15%
41–60	15	12.10%	99	79.84%	114	21.92%

A total of 520 women were assessed for dietary diversity across various demographic groups. Overall, 85.6% (n=445) met the minimum dietary diversity cut-off by consuming at least five food groups, while 14.4% (n=75) fell below this threshold. Among the surveyed women living in female-headed households, 83.0% (n=78) met the minimum dietary diversity cut-off, while 17.0% (n=16) did not. While the adequacy rate is slightly lower for female-headed households, the results remain broadly comparable with those obtained across the entire sample, suggesting that dietary diversity outcomes were strong across household types and that project-supported interventions benefitted women in female-headed households in a manner broadly similar to others.

By Ethnicity

The vast majority of respondents were Amerindian, representing 86.7% (n=451) of the total sample. Among them, 381 women (82.5%) met the minimum dietary diversity threshold, while 70 women (15.1%) fell below the cut-off.

Respondents identifying as Mixed ethnicity accounted for 12.7% (n=66), with 61 women (92.4%) achieving adequate diversity and 5 (7.6%) not meeting the threshold.

Very small proportions of African, Chinese, and East Indian respondents were recorded (one respondent each, 0.2% of the total sample). Both the Chinese and East Indian respondents achieved the MDD-W threshold, while the sole African respondent did not. However, the relatively small sample size should be taken into account when interpreting these results for these ethnicities.

By Age Range

The largest share of respondents fell within the 26–40 age group, representing 51.2% (n=266) of the total sample. Within this group, 228 women (81.7%) achieved the minimum dietary diversity cut-off, while 38 did not. The 18–25 age group accounted for 22.7% (n=118) of respondents, with 97 women (82.2%) meeting the threshold. Among women aged 41–60, a total of 114 respondents (21.9%) were recorded, of whom 99 (86.8%) achieved adequate dietary diversity. The <18 age group represented 4.2% (n=22) of the sample, with 21 (95.5%) meeting the cut-off. Respondents over 60 years were few (n=5; 1.0%), but the majority (4 women, 80%) also achieved adequacy.

Region 1

Table 18: Minimum Dietary Diversity for Women (MDD-W) – Region 1

Diversity Cut-off	<5 (N)	<5%	≥5 (N)	≥5%	Total	% of total
Overall						
Grand Total	27	11.69%	204	88.31%	231	100.00%
District						
Mabaruma	23	9.96%	109	47.19%	132	57.14%
Moruca	4	1.73%	95	41.13%	99	42.86%
Ethnicity						
African	0	0.00%	1	0.43%	1	0.43%
Amerindian	23	9.96%	155	67.10%	178	77.06%
Chinese	0	0.00%	1	0.43%	1	0.43%
East Indian	0	0.00%	1	0.43%	1	0.43%
Mixed	4	1.73%	46	19.91%	50	21.65%
Age range						
<18	0	0.00%	10	4.33%	10	4.33%
18–25	8	3.46%	40	17.32%	48	20.78%
26–40	12	5.19%	102	44.16%	114	49.35%
41–60	7	3.03%	52	22.51%	59	25.54%

In Region 1, a total of 231 women were assessed for dietary diversity. Of these, 204 (88.3%) met the minimum dietary diversity requirement of consuming at least five food groups, while 27 (11.7%) did not. This overall result indicates a generally high level of dietary adequacy across the region, though variations become evident when the data is disaggregated by district, ethnicity, and age.

When the ethnicity of the respondent is considered, all women identifying as African, Chinese, and East Indian met the MDD-W requirement. However, it should be noted that each of these groups consisted of only one respondent, and the small sample sizes limit the reliability of conclusions for these categories.

In contrast, 77.1% of Amerindian women (n=155 out of 178) met the MDD-W threshold, which is 19.4 percentage points lower than the African category. Among women of Mixed ethnicity, only 92.0% met the requirement, a difference of 7.1 percentage points compared to the Amerindian group. These differences highlight potential disparities in dietary diversity that may be influenced by cultural or socioeconomic factors.

When disaggregated by age, the 26–40 age group had the highest proportion of women meeting the MDD-W requirement, with 89.5% (102 out of 114) reporting consumption of

at least five food groups. This is followed by the 41–60 age group, where 88.1% (n=52) met the threshold. The 18–25 group also reported high adequacy with 83.3% (n=40) meeting the standard.

In contrast, the <18 group had a perfect adequacy rate of 100%, but again, the sample size is very small (n=10), limiting meaningful interpretation. Overall, women in the 26–40 age range appear to be the most likely to meet the MDD-W requirement, while those in the 18–25 and 41–60 groups also show relatively strong dietary diversity.

At the district level, women in Moruca were slightly more likely to meet the MDD-W threshold compared to those in Mabaruma. In Moruca, 95 out of 99 respondents (96.0%) met the requirement, while in Mabaruma, 109 out of 132 (82.6%) achieved the threshold. This 13.4 %age point difference may reflect variations in food access, local diets, or implementation effectiveness of nutrition-related interventions across the two districts.

Comparative analysis: MDD-W Endline vs. Baseline for Region 1

There was a significant improvement in dietary diversity in Region 1. The proportion of women consuming at least 5 food groups increased from 65.4% to 88.31%, indicating improved dietary adequacy over the project period.

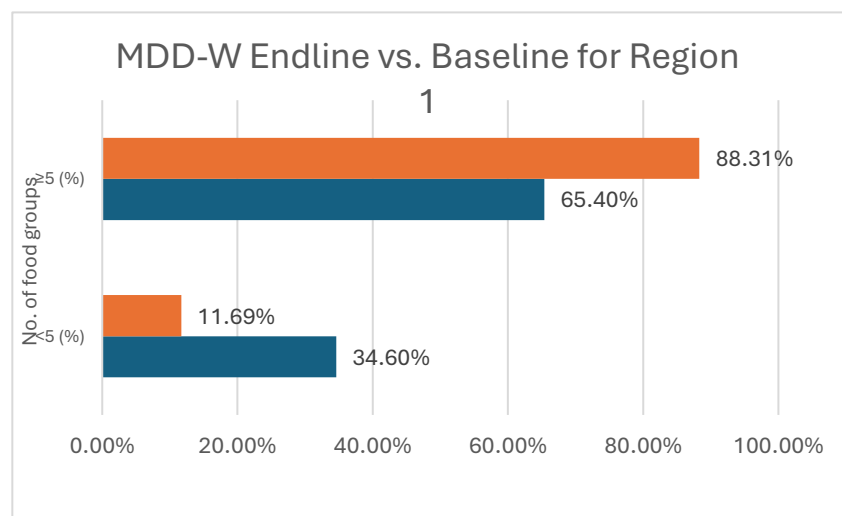


Figure 19: MDD-W Endline vs. Baseline for Region 1

Table 19:
Dietary
for
(MDD-
Endline
Baseline

Categories	Baseline <5 (%)	Baseline ≥5 (%)	Endline <5 (%)	Endline ≥5 (%)	Change in ≥5%
District					
Mabaruma	36.5%	63.5%	9.96%	90.04%	↑ +26.54%
Moruca	33.3%	66.7%	1.73%	98.27%	↑ +31.57%
Ethnicity					
African	0.0%	100.0%	0.0%	100.0%	0.00%
Amerindian	36.2%	63.8%	9.96%	87.08%	↑ +23.26%
East Indian	50.0%	50.0%	0.0%	100.0%	↑ +50.0%
Mixed	25.9%	74.1%	8.0%	92.0%	↑ +17.9%
Age Range					
<18	66.7%	33.3%	0.0%	100.0%	↑ +66.7%
18–25	34.2%	65.8%	16.7%	83.3%	↑ +17.5%
26–40	29.2%	70.8%	10.5%	89.5%	↑ +18.7%
41–60	37.6%	62.4%	11.9%	88.1%	↑ +25.7%

Minimum
Diversity
Women
W) –
vs.

Both sub-regions showed marked improvement, especially Moruca, which moved from 66.7% to 98.27% in dietary diversity compliance.

Between the baseline and endline assessments, there were notable improvements in dietary diversity across all ethnic groups. Among Amerindian women (aged 15–49 years), the %age meeting the Minimum Dietary Diversity for Women (MDD-W) threshold increased from 63.8% at baseline to 87.08% at endline, reflecting a gain of 23.26 %age points. The Mixed ethnicity group improved from 74.1% to 92.0%, an increase of 17.9 %age

points. East Indian respondents showed a full shift from 50.0% to 100.0%, marking a 50.0 %age point gain—though this is likely based on a small sample size. The African group remained consistently high, with 100.0% meeting the threshold at both time points based on a small sample size. These improvements indicate a broad and positive shift in dietary diversity among all ethnic subgroups.

Across all age groups, there were clear and consistent improvements in dietary diversity between the baseline and endline periods. The most substantial gains were observed among respondents under 18 years old, whose dietary diversity compliance rose dramatically from 33.3% at baseline to 100.0% at endline—a full 66.7 %age point increase. Similarly, the 41–60 age group experienced a significant improvement, increasing from 62.4% to 88.1%, representing a 25.7 %age point gain. The 26–40 age group improved from 70.8% to 89.5% (a gain of 18.7 points), while the 18–25 group rose from 65.8% to 83.3% (a 17.5–point increase). These findings suggest that the interventions or contextual changes during the project period positively impacted dietary diversity across all reproductive age cohorts (15–49 years), with particularly strong effects among the youngest and middle-aged adult populations.

11.1. Nutrition Information Participation and Dietary Diversity – Region 1 By Gender

In Region 1, 61 female respondents and 43 male respondents reported that they or someone in their household had received nutrition information from the

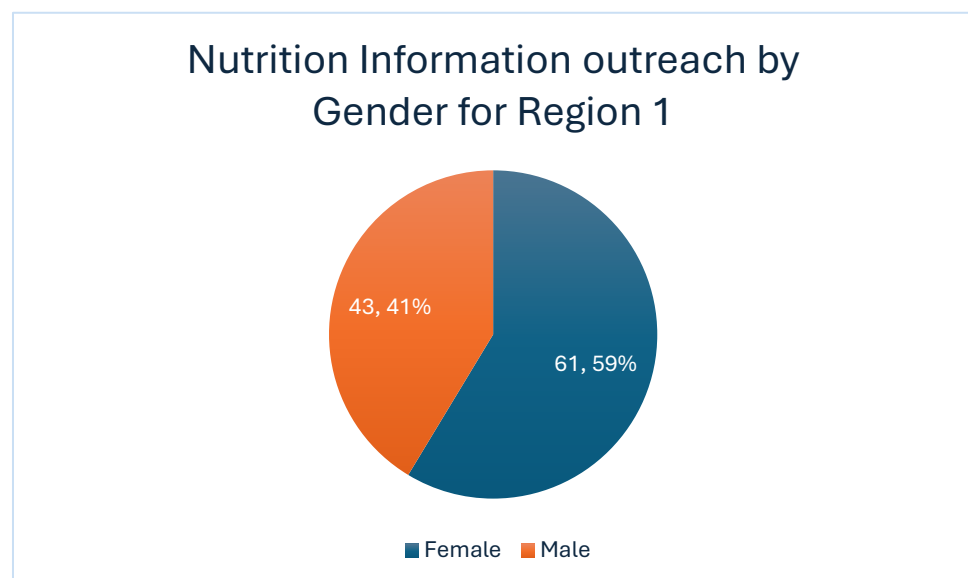


Figure 20: Nutrition information outreach by gender for Region 1

HESAD project through training, theatre, radio, or similar channels. Women accounted for 58.7% of all participants in these activities.

When these participation figures are compared with the Minimum Dietary Diversity for Women (MDD-W) results, a positive relationship is evident:

- Females who received nutrition information had a 70.5% adequacy rate (consuming ≥ 5 food groups) compared to 67.6% among those who did not.

This gap of 2.9 %age points suggests that nutrition-related training and awareness activities are associated with modest improvements in women's dietary diversity in the region.

Calculation:

Table 19 summarizes the participation of male and female respondents in Region 1 who reported receiving nutrition information from the HESAD project, compared with those who did not. The data highlight the proportion of households reached by training, theatre, radio, and similar channels, providing the basis for examining how exposure to nutrition information relates to dietary diversity outcomes.

Table 20: Calculation of adequacy rate

Sex	No (Count)	No (%)	Yes (Count)	Yes (%)
Female	148	70.80%	61	29.20%
Male	88	67.20%	43	32.80%

Females without nutrition information

- ≥ 5 food groups: 100
- Total females without nutrition information: 148
- Adequacy rate = $(100/148) \times 100 = 67.6\%$

Females with nutrition information

- ≥ 5 food groups: 43
- Total females with nutrition information: 61
- Adequacy rate = $43/61 \times 100 \approx 70.5\%$

Overall, the findings for Region 1 indicate that women in the region generally have a moderate to high level of dietary diversity, with more than two-thirds meeting the MDD-W adequacy threshold. While the improvement linked to receiving nutrition information is modest, it still points to a positive influence of HESAD's outreach activities. Strengthening the reach and frequency of nutrition-related training—particularly in areas or households with lower dietary diversity—may help close remaining gaps and ensure more consistent nutritional outcomes across the region.

Region 9

Table 21: Minimum Dietary Diversity for Women (MDD-W) – Region 9

Diversity Cut-off	<5 (N)	<5%	≥5 (N)	≥5%	Total	% of total
Overall						
Grand Total	48	16.61%	241	83.39%	289	100.00%
District						
Central Rupununi	11	16.92%	54	83.08%	65	22.49%
Deep South Rupununi	8	15.38%	44	84.62%	52	17.99%
North Rupununi	4	6.45%	58	93.55%	62	21.45%
South Central Rupununi	7	14.29%	42	85.71%	49	16.96%
South Pakaraimas	18	29.51%	43	70.49%	61	21.11%
Ethnicity						
Amerindian	47	17.22%	226	82.78%	273	94.46%
Mixed	1	6.25%	15	93.75%	16	5.54%
Age-range						
<18	1	8.33%	11	91.67%	12	4.15%
18–25	13	18.57%	57	81.43%	70	24.22%
26–40	26	17.11%	126	82.89%	152	52.60%
41–60	8	14.55%	47	85.45%	55	19.03%

In Region 9, a total of 289 women were surveyed. Of these, 241 (83.4%) met the minimum dietary diversity requirement of consuming five or more food groups, while 48 (16.6%) fell below the threshold. This reflects a strong overall level of dietary diversity, though

important variations are evident when the data is disaggregated by district, ethnicity, and age.

By District

Among the five sub-regions, North Rupununi recorded the highest proportion of women achieving adequate dietary diversity, with 93.6% (58 out of 62) meeting the cut-off. Central Rupununi also performed well, with 83.1% (54 out of 65) reporting consumption of at least five food groups. South Central Rupununi (85.7%) and Deep South Rupununi (84.6%) also reflected high adequacy.

In contrast, South Pakaraimas had the lowest share, with only 70.5% (43 out of 61) of women meeting the requirement. This highlights potential disparities in dietary patterns or food access across the sub-regions, with South Pakaraimas showing particular vulnerability.

By Ethnicity

Women of Amerindian descent, who represented most respondents (94.5%), reported an adequacy rate of 82.8% (226 out of 273). In comparison, women identifying as Mixed ethnicity achieved a higher adequacy rate of 93.8% (15 out of 16). While this suggests better dietary outcomes among women of Mixed ethnicity, the relatively small sample size should be taken into account when interpreting these results.

By Age Group

Dietary diversity was highest among women under 18 years, with 91.7% (11 out of 12) meeting the threshold, though this group represented a very small sample. Women aged 41–60 followed with an adequacy rate of 85.5% (47 out of 55). Women in the 26–40 age group achieved an adequacy rate of 82.9% (126 out of 152), while those aged 18–25 reported 81.4% (57 out of 70).

Overall, these results point to consistently high dietary diversity across Region 9, with some variation between districts and age groups, and South Pakaraimas standing out as an area of lower adequacy.

11.2. Foods Consumed by Women within a 24-Hour Period

Through the MDDW module, the HESADP endline survey assessed the dietary patterns of women in Regions 1 and 9 through a 24-hour dietary recall applied to Women of reproductive age (WRA). In addition to the 10 core MDD-W food groups, the assessment

incorporated discretionary foods such as: *sweet beverages, sweet foods and fried and salty foods*. These additional items were recorded to provide a broader picture of dietary patterns and overall diet quality; however, as per the standard MDD-W methodology, they were not included in the calculation of the MDD-W score, that is instead based exclusively on the consumption of the ten main food groups that reflect micronutrient adequacy.

Region 1

In Region 1, at least 95% of the women consumed five food groups out of 13 food groups within the 24-hour reference period. These were:

- **Grains, white roots, tubers, and plantains** (96.1%)
- **Milk and milk products** (91.3%)
- **Meat, poultry, and fish** (90.5%)
- **Sweet beverages** (90.0%)
- **Vitamin A-rich fruits and vegetables** (74.9%)

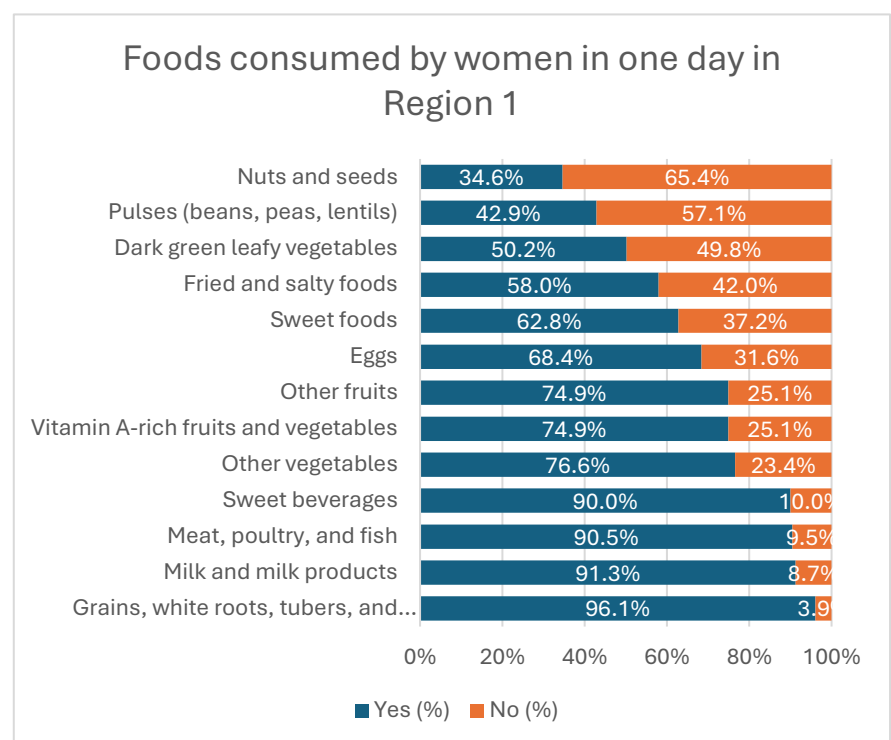


Figure 21: Foods consumed by women in one day in Region 1

Among these, grains, white roots, tubers and plantains were the most widely consumed, with nearly all women (96.1%) reporting intake. Likewise, over 90% consumed either milk or meat-based foods, highlighting strong coverage in animal source products. Other food groups with high levels of consumption include other vegetables (76.6%), other fruits (74.9%), and eggs (68.4%), that contribute positively to dietary diversity.

Meanwhile, some food groups were less commonly consumed. For instance, only 42.9% of women ate pulses (beans, peas, lentils), and just 34.6% reported eating nuts and seeds, making these the least consumed of the ten MDD-W groups. Additionally, dark green leafy vegetables were consumed by only half of the respondents (50.2%). This pattern

shows that while core food groups like grains, dairy, and meat are well integrated into women's diets, there are still gaps in the consumption of nutrient-dense plant-based foods such as pulses, nuts, and green leafy vegetables.

Regarding discretionary foods, sweet foods and fried and salty snacks were consumed by 62.8% and 58.0% of women respectively, indicating a substantial intake of ultra-processed items.

The analysis of unhealthy food consumption across age ranges shows distinct patterns for sweet beverages, sweet foods, and fried and salty foods.

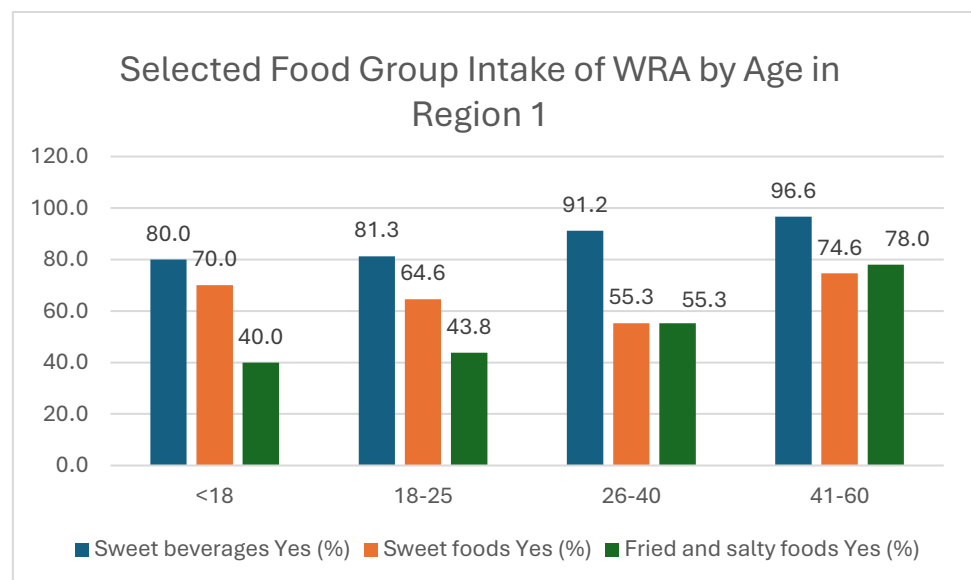


Figure 22: Selected Food Group Intake of WRA by Age

Women aged 41–60 reported the highest levels of consumption in all three categories, with 96.61% consuming sweet beverages, 74.58% consuming sweet foods, and 77.97% consuming fried and salty foods. This was followed closely by the 26–40 age group, which had similarly high sweet beverage consumption (91.23%) but lower intake of sweet foods (55.26%) and fried and salty foods (55.26%).

Among younger respondents, sweet beverage consumption remained high – 81.25% for the 18–25 group and 80% for those under 18 – but their consumption of sweet foods (64.58% and 70%, respectively) and fried and salty foods (43.75% and 40%, respectively) was notably lower compared to older age groups.

Overall, sweet beverages were the most commonly consumed unhealthy food group across all ages, with consistently high percentages. In contrast, sweet foods and fried and salty foods showed greater variation, with higher intake in the older adult groups. This trend suggests that while sugary drinks are widely consumed regardless of age, the

preference for other unhealthy food groups increases with age, particularly beyond 40 years.

Region 9

In Region 9, at least 80% of the women consumed five food groups out of 13 food groups within the 24-hour reference period. Among the core 10 MDD-W food groups, these included:

- **Grains, white roots, tubers, and plantains** (98.3%)
- **Meat, poultry, and fish** (96.2%)
- **Milk and milk products** (86.9%)
- **Vitamin A-rich fruits and vegetables** (81.7%)

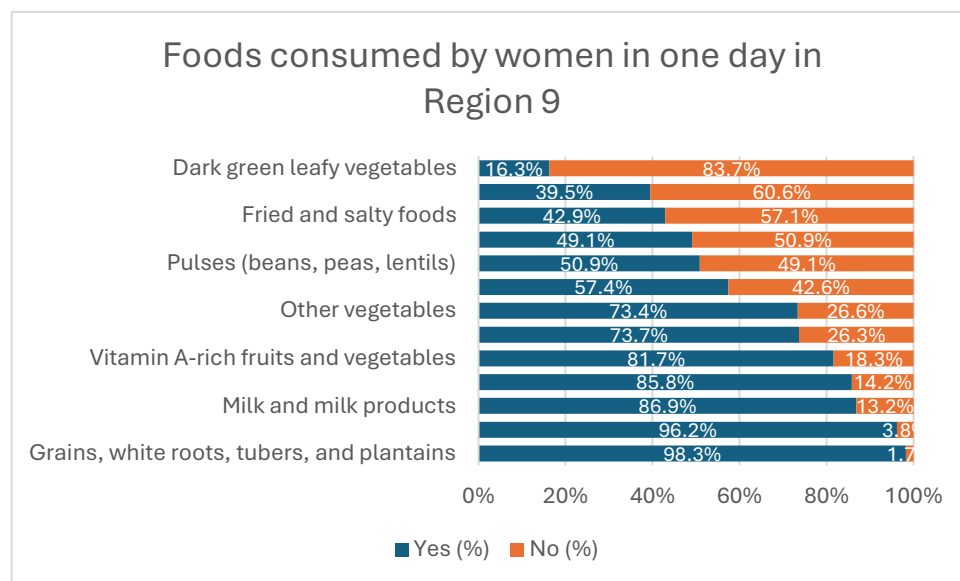


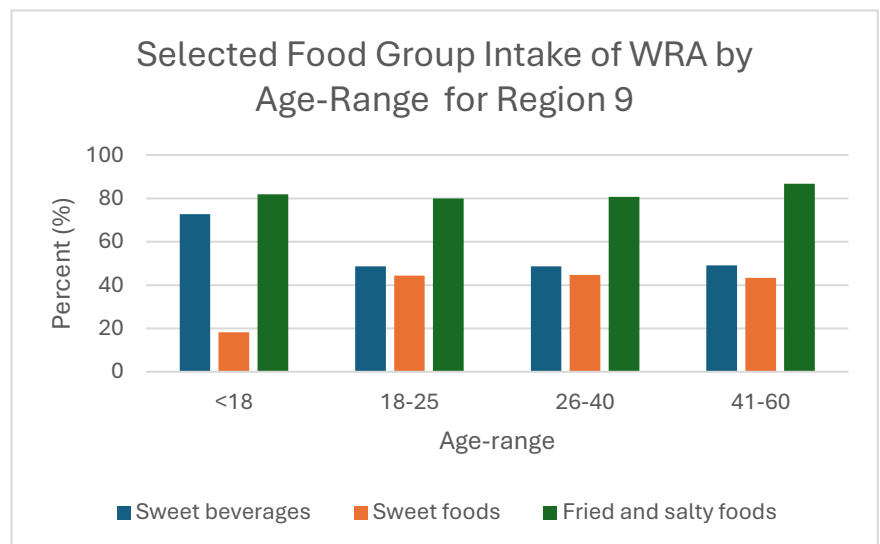
Figure 23: Foods consumed by women in one day in Region 9

Among these, grains, white roots, tubers, and plantains were the most widely consumed, with nearly all women (98.3%) reporting intake. Likewise, over 90% of women consumed either meat, poultry, or fish, indicating strong coverage in animal-based foods. The consumption of milk and milk products also remains high at 86.9%, suggesting their prominence in the diet. Other food groups with high levels of consumption include other vegetables (73.4%), other fruits (73.7%), and eggs (57.4%), which contribute positively to dietary diversity.

However, some food groups were less commonly consumed. For instance, only 50.9% of women ate pulses (beans, peas, lentils), and just 39.5% consumed nuts and seeds, making these two food groups among the least consumed. Additionally, dark green leafy vegetables were eaten by only 16.3% of respondents, showing a clear gap in the intake of nutrient-dense plant-based foods.

This pattern indicates that while core food groups like grains, meat, and dairy are well integrated into women's diets, there are notable gaps in the consumption of important plant-based foods, particularly those rich in micronutrients like pulses, nuts, and green leafy vegetables.

In Region 9, the consumption of selected discretionary food items by Women of Reproductive Age (WRA) varied across age groups. Sweet beverages were consumed by a significant majority (85.8%) of women across all age groups. Sweet beverage intake was highest among respondents under 18



years, with nearly three-quarters (72.7%) reporting consumption within the reference period. In contrast, only around half of those aged 18–25 (48.6%), 26–40 (48.7%), and 41–60 (49.1%) reported consuming sweetened drinks.

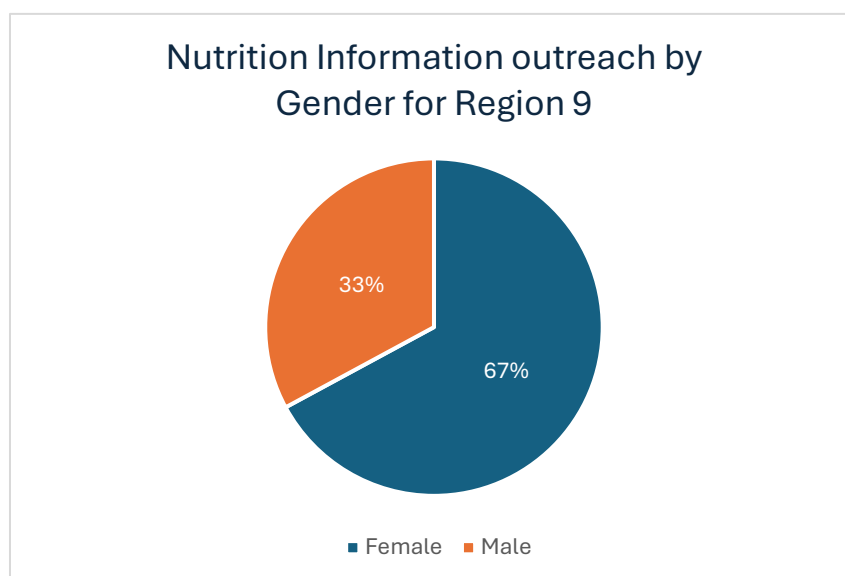
Sweet foods, such as cakes, candies, and other confectioneries, were least consumed by the youngest age group (18.2%), but their intake was fairly consistent among adults, ranging from 43.4% to 44.7% across the three older age groups.

Fried and salty foods were widely consumed in all age categories, with the highest intake reported among those aged 41–60 (86.8%) and the lowest among those under 18 (81.8%). The consistently high %ages suggest these foods are a common part of the diet across the population, regardless of age.

11.3. Nutrition Information Participation and Dietary Diversity – Region 9 By Gender

Figure 25: Nutrition Information outreach by Gender for Region 9

From the 149 respondents in Region 9 who reported receiving nutrition information from the HESAD project, 100 were female and 49 were male. This means women accounted for two-thirds (67.1%) of all participants in these outreach activities.



Among women of reproductive age (15–49) in Region 9, those who had received nutrition information from the HESAD project were more likely to meet the MDD-W adequacy threshold than those who had not.

- With nutrition information: 71.2% achieved ≥ 5 food groups
- Without nutrition information: 56.2% achieved ≥ 5 food groups

This gap of 15 %age points suggests that nutrition-related training and awareness activities are associated with substantial improvements in women’s dietary diversity in the region.

These findings suggest that nutrition training and information activities are positively linked to higher dietary diversity, particularly for women. While the MDD-W indicator is influenced by multiple factors—such as food access, income, and cultural food preferences—the data indicates that HESAD’s outreach efforts are contributing to improved dietary practices. The lower male participation, however, points to a missed opportunity; engaging men more actively could enhance nutrition outcomes at the household level.

12. Access to resources

12.1. Access to Natural resources – Irrigation

12.1.1. Irrigation for production purposes

12.1.1.2 Source of irrigation for production purposes

Water sources for Crops

The graph compares the primary sources of water for crop production irrigation between Region 1 and Region 9 over the past 12 months.

In Region 1, the most common source was rainwater harvesting systems (50%), followed equally by creek and lake/pond sources, each accounting for 25%. No respondents in Region 1 reported using public piped water systems, public wells, or private wells for irrigation.

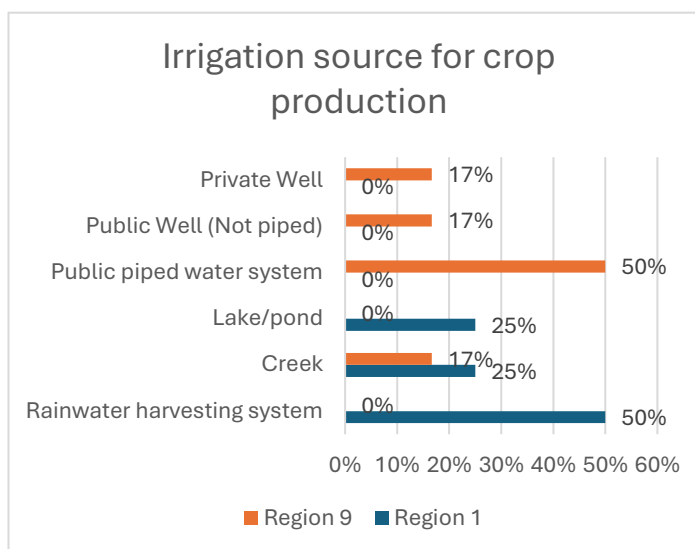


Figure 26: Irrigation source for crop production

In Region 9, the predominant source was public piped water systems (50%), while creek use accounted for 17%. Both public wells (not piped) and private wells were each reported by 17% of respondents. There were no reports of rainwater harvesting systems or lake/pond use for irrigation in Region 9. Overall, Region 1 relied more on natural and rain-fed sources, while Region 9 showed greater dependence on piped and well-based water infrastructure for irrigation.

Water sources for livestock

The graph compares the primary water sources for livestock between Region 1 and Region 9.

In Region 1, all respondents (100%) reported creek as their primary source of water for livestock, indicating a complete reliance on natural flowing water.

In Region 9, water sources were more varied. The leading source was lake/pond (38%), followed by creek

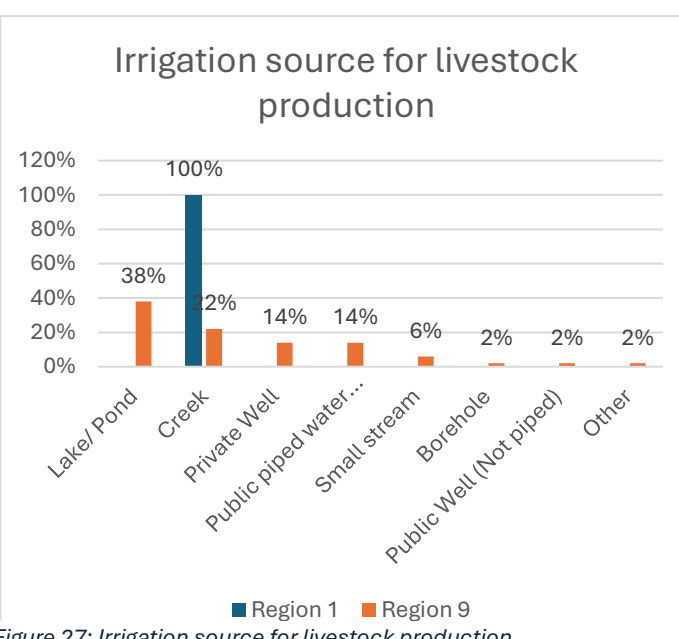


Figure 27: Irrigation source for livestock production

(22%). Private wells and public piped water systems each accounted for 14% of respondents. Smaller shares relied on small streams (6%), boreholes (2%), public wells (not piped) (2%), and other sources (2%).

Overall, Region 1 shows complete dependence on a single natural source, while Region 9 demonstrates a more diversified mix of natural and infrastructure-based water sources for livestock.

12.1.1.3 Water adequacy for crop and livestock production

The data in the chart presented in Figure 30 provides insight into group perceptions of water adequacy for both crop and livestock production in Regions 1 and 9 over the past 12 months.

For *crop production*, all responding groups in Region 1 (100%) indicated that both the timing and amount of water from the irrigation system were adequate. In contrast, responses in Region 9 were more mixed—only half of the groups (50%) felt that the timing was adequate, while two-thirds (67%) were satisfied with the amount of water received.

For *livestock rearing*, only half of the groups in Region 1 (50%) reported having an adequate water supply, highlighting a possible gap in livestock water access. In Region 9, satisfaction was notably higher, with 70% of groups reporting adequate water availability for their livestock.

These results suggest that while Region 1 groups have consistently positive experiences with irrigation for crops, livestock water adequacy is less certain. Region 9 shows more variation, with crop irrigation timing being the main challenge, but relatively better access to water for livestock.

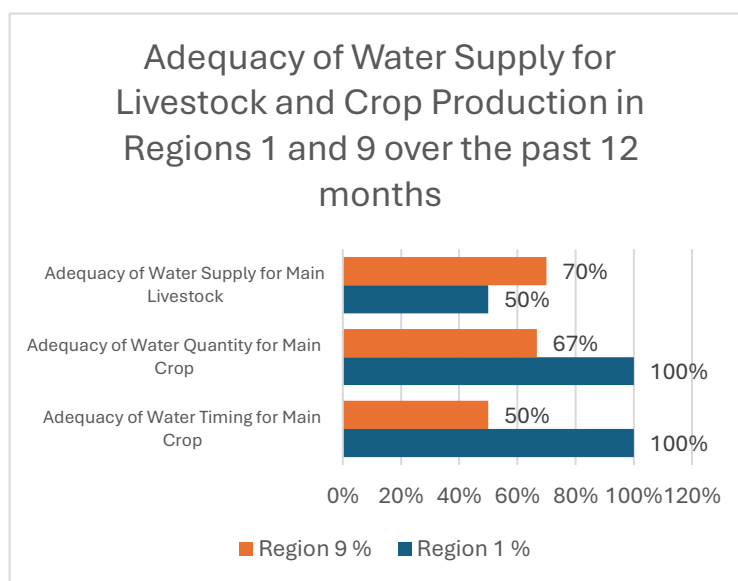


Figure 28: Adequacy of Water Supply for Livestock and Crop Production in Regions 1 and 9 over the past 12 months

12.1.2. Household access to good quality water over the past two years

Table 22: Household access to good quality water over the past two years by region

District	Have water but not good quality (Count)	No (Count)	Yes lack of water >1 month (Count)	Have water but not good quality (%)	No (%)	Yes lack of water >1 month (%)
Region 1						
Region 1 Total	188	95	57	55.5	28.0	16.6
Mabaruma	115	56	29	57.5	28.0	14.5
Moruca	73	39	28	52.1	27.9	20.0
Region 9						
Region 9 Total	153	191	116	33.3	41.5	25.2
Central Rupununi	31	55	16	30.4	53.9	15.7
Deep South Rupununi	1	59	22	1.2	72.0	26.8
North Rupununi	44	33	22	44.4	33.3	22.2
South Central Rupununi	32	31	33	33.3	32.3	34.4
South Pakaraimas	45	13	23	55.6	16.1	28.4
Grand Total	341	286	173	42.6	35.8	21.6

The findings reveal clear regional variations in household access to good-quality water over the past two years, based on responses to the question: 'In the last two years, has your household experienced a lack of good-quality water for household needs?'.

In Region 1, over half of households (55.5%) reported having water but of poor quality, with 28.0% indicating no problems and 16.6% experiencing a lack of water for more than one month. At the district level, Mabaruma recorded the highest proportion of households with poor quality water (57.5%), while Moruca showed a slightly lower rate (52.1%) but a higher proportion of households facing prolonged water shortages (20.0%).

In Region 9, the situation differs, with only one-third of households (33.3%) reporting poor quality water, but a larger share (41.5%) indicating no issues. However, a quarter of households (25.2%) experienced prolonged water shortages. District variations are evident: Deep South Rupununi had the lowest rate of poor quality water (1.2%) but one of the highest rates of prolonged shortages (26.8%), while South Pakaraimas recorded both high poor quality water (55.6%) and high prolonged shortage rates (28.4%). South Central Rupununi stood out with the highest rate of prolonged shortages in the region (34.4%).

Overall, across both regions, 42.6% of households reported having poor quality water, 35.8% had no issues, and 21.6% faced prolonged shortages. This indicates that while water access issues are widespread, the nature of the problem varies significantly between and within regions—Region 1 faces more challenges with water quality, whereas Region 9 experiences more prolonged shortages in certain districts.

³12.2. Access to Natural resources – Land

Amerindian communities, as the original inhabitants of Guyana, possess a rich and diverse cultural heritage. They comprise nine Indigenous Nations. These are the Wapishanas, Arecunas, Macushis, Warraus, Arawaks, Caribs, Akawaio, Patamonas, and Wai-Wais—with approximately 35,170 km² of titled Amerindian lands (Figure 28).

12.2.1. Ownership of Land

Region 1 has a mix of ownership models, with both private and community-based arrangements represented, reflecting possibly greater diversity in tenure systems and access to leased or rented land.

Region 9 is almost entirely communal in landholding patterns, with negligible private ownership or alternative tenure arrangements. This may indicate strong customary land systems or limited formal individual titling in that region.

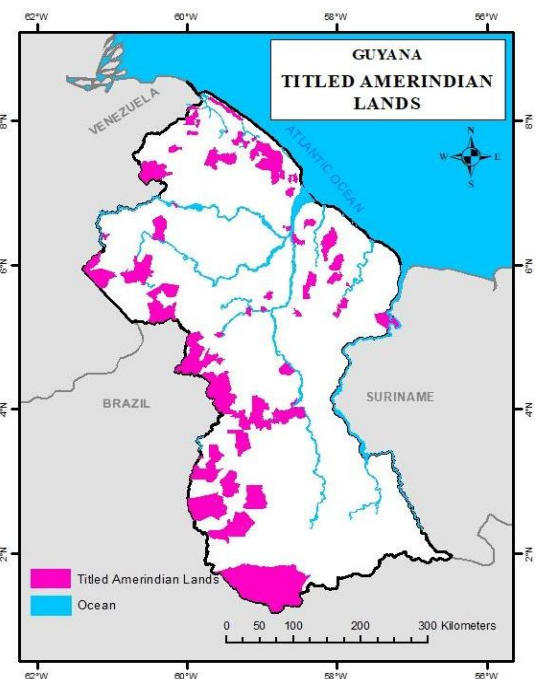


Figure 29: Titled Amerindian lands of Guyana

Table 23: Land Ownership and Tenure Arrangements by District/Sub-Region

District / Sub-Region	N (Responses)	Community-owned / Communal (%)	Leased (%)	No Answer (%)	Other (%)	Rented (%)	With individual land title (%)	Without land title (%)
Region 1								
Mabaruma	18	27.8	16.7	11.1	0	0	38.9	5.6
Moruca	13	38.5	0	0	15.4	7.7	38.5	0
Region 9								

^{3 3} Image obtained from Guyana Lands and Surveys Commission. (n.d.). Fact Page of Guyana. Retrieved from: <https://factpage.gls.gov.gy/home/amerindian-lands/>

Central Rupununi	12	91.7	0	0	0	0	8.3	0
Deep South Rupununi	10	100	0	0	0	0	0	0
North Rupununi	11	90.9	0	0	9.1	0	0	0
South Central Rupununi	11	90.9	0	9.1	0	0	0	0
South Pakaraimas	16	100	0	0	0	0	0	0

The data on land ownership patterns reveals distinct differences between Region 1 and Region 9.

Region 1 shows a more diverse mix of tenure arrangements:

- In Mabaruma, just over a quarter (27.8%) of respondents reported community-owned or communal land. Another 16.7% indicated their land was leased, while 38.9% held individual land titles. A small proportion (5.6%) reported having no land title, and 11.1% gave no answer.
- In Moruca, 38.5% reported community ownership, the same %age held individual land titles. Other forms of ownership were also present, with 15.4% indicating “Other” arrangements and 7.7% renting their land.

Region 9, by contrast, is dominated by community-owned or communal land tenure:

- Central Rupununi (91.7%), Deep South Rupununi (100%), North Rupununi (90.9%), South Central Rupununi (90.9%), and South Pakaraimas (100%) reported overwhelmingly high levels of community ownership.
- Individual land titles are rare, recorded only in Central Rupununi (8.3%).
- Other tenure types such as leasing, renting, or “Other” categories are absent, and “No Answer” responses are minimal, except in North Rupununi (9.1%) and South Central Rupununi (9.1%).

12.2.2. Farm size and farm size changes

Information on the farmed land size was collected from a total of 91 respondents (31 in Region 1 and 60 in Region 9). However, due to data quality issues, only 61 landholdings

originally reported in acres were retained for this descriptive analysis.⁴ Moreover, for Region 9 the record for the Aranaputa Livestock Project/Aranaputa Village Council was not included in the descriptive statistics calculations, since it refers to a 150-acre state-owned farm managed by the Village Council for crops cultivation and is thus clearly an outlier. The results, although based on a partial subsample, confirm a pattern of differences in landholdings between regions. In Region 1, farm sizes were relatively smaller (median 2 acres, mean 3.3 acres) than in Region 9 (median 2.75 acres, mean 8.7 acres). Moreover, as also shown by the skewness of the distributions, Region 9 exhibits greater variation in land size. North Rupununi stands out as the subregion with the largest farms, with a median of 15 acres (without considering the already mentioned Aranaputa 150-acres farm, that is also located in this area). Deep South Rupununi ranks second, with a median farm size of 7.5 acres and an average of 9.0 acres; the largest recorded landholding in this district is 20 acres. Other sub-regions in Region 9 also show notable differences, with South Pakaraimas reporting an average of 4.8 acres, South Central Rupununi of 3.0 acres, and Central Rupununi of 2.0 acres. Overall, the data highlights significant variation in farm sizes both within and between districts in Region 9.

A particularly relevant finding is that, among the 91 respondents for whom information on land size change was collected, more than one third (35.2%) reported that the area they farm had increased compared to the period before HESAD. The trend is stronger in Region 9 (38.3% reporting an increase) than in Region 1 (29.0%), although in both regions this represents a substantial share. These results indicate that a meaningful proportion of farmers (particularly in Region 9) have expanded their cultivated land during the project period. This includes cases such as the Aranaputa village 150 acres council-led farm referenced earlier, where the reported increase reflects an expansion of the group-managed agricultural land. Reports of land contraction are limited in both regions and represent only a small minority of cases, though they are slightly more frequent in Region 1.

⁴ Some respondents provided farm size information in square feet or in the form of plot dimensions (length and width in feet). An attempt to convert these values into acres produced implausibly small holdings (on the order of few square feet), that were inconsistent with the overall distribution of acre-reported farms as well as with the average and median scale of landholdings recorded at baseline in both Region 1 and Region 9. This suggests that the square-foot entries were likely referring only to partial cultivated areas area (e.g., small kitchen gardens, homestead plots) rather than to the household's total land and may potentially be affected by measurement or reporting error. The descriptive analysis therefore only focuses on the subset of observations where farm size was reported directly in acres.

While the data do not allow for firm causal attribution, this pattern suggest that the project may have created incentives or enabling conditions for increased agricultural engagement. In hinterland contexts where access to land (particularly under community/communal arrangements) is relatively less constrained than access to capital or inputs, the expansion of cultivated area may represent the most immediately available pathway for scaling up production. Improved opportunities, group-based support, or stronger production prospects under the project may have translated into greater use of the factor of production that was most accessible (land, particularly under collective and group arrangements) rather than into more input-intensive intensification strategies.

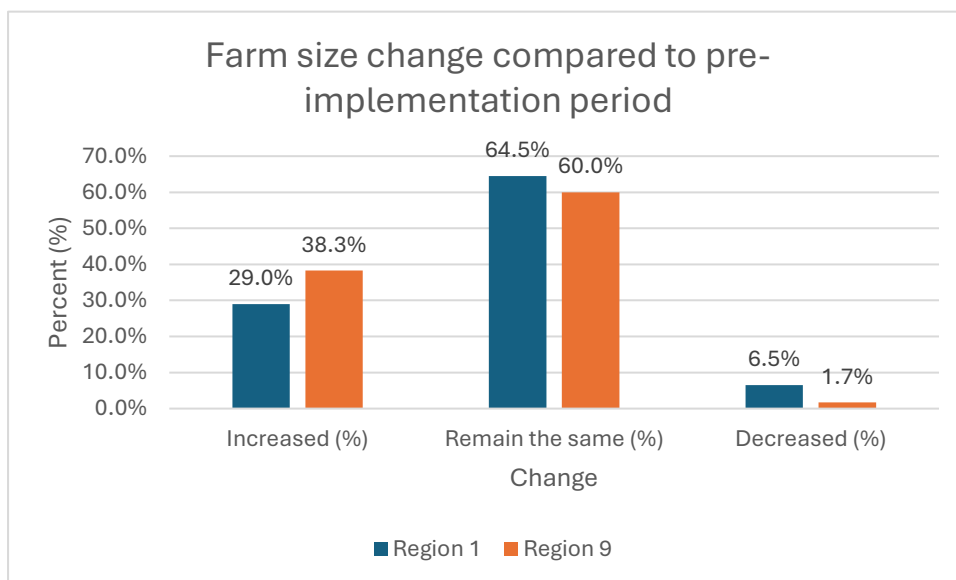


Figure 30: Farm size change compared to pre-implementation period

12.3. Access to a reliable internet in community center

Access to reliable internet in community centers was generally high in both regions with 82.4%. In Region 1, 72.2% of respondents indicated having access to reliable internet, while in Region 9, the proportion was even higher at 89.6%. This suggests that community connectivity

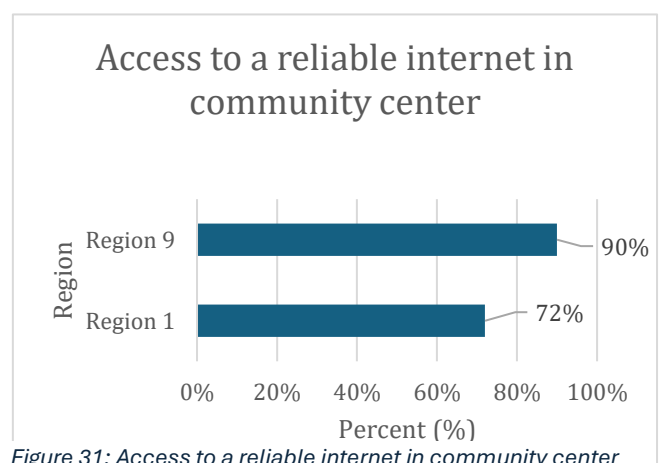


Figure 31: Access to a reliable internet in community center

infrastructure is more widespread in Region 9, which may provide greater opportunities for communication, access to online services, and information sharing.

13. Group information analysis

13.1. Distribution of respondents across Business Plan Groups

This section describes the distribution of surveyed respondents across Business Plan (BP) groups within the endline sample. Because the survey design deliberately oversampled Business Plan participants (including both executive and ordinary members), the figures presented here reflect the composition of the survey sample and are not intended to derive extrapolations on the actual size or membership distribution of groups in the beneficiaries' population.⁵ Project-wide participation and membership figures for BP were instead tracked and recorded in the project M&E system and related monitoring dashboards. With these caveats, the data provide insights into how survey interviews were distributed across groups and districts, and help better contextualize subsequent findings.

13.1.2. Respondents' distribution across BP groups in Region 1

In Region 1, 125 surveyed respondents in Mabaruma and 79 in Moruca were linked to BP groups. In Mabaruma, respondents were distributed across a relatively broad range of groups (125 respondents recorded across 18 groups). The largest group in the sample (Fisherman Squad) accounted for 13.6% of surveyed respondents, and the three largest groups together represented just over one third of district respondents. While several other groups in Mabaruma maintained moderate representation, participation is more evenly spread, resulting in no single group holding a dominant share. This suggests that the endline survey captured experiences from a relatively wide cross-section of groups within the district.

In contrast, in Moruca, surveyed respondents were more concentrated among a smaller number of groups (9 groups). The Cabora Farmer's Group alone accounted for 25.3% of interviewed respondents (20 respondents), and the three largest groups represented

⁵ Moreover, the distribution of survey respondents across business groups was not proportional to the total BP membership as recorded in the Project M&E system and dashboard.

nearly 60% of the district sample (Cabora Farmer's Group, Waramuri Women's Investors Group, and Karaburi Women's Group Cooperative Society LTD). While this does not necessarily reflect actual concentration of membership, it indicates that the survey evidence from Moruca is more heavily concentrated in a limited number of groups.

Table 24: Group Respondent Size and Distribution – Mabaruma and Moruca

Metric	Mabaruma	Moruca
Total Respondents in groups	125	79
Largest Group	Fisherman Squad (17)	Cabora Farmer's Group (20)
% Held by Largest Group	13.6%	25.3%

Table 25: Survey Respondent Distribution across BP groups – Mabaruma

No.	Group Name	Count	% of Total
	Total	125	100
1	Fisherman Squad	17	13.6
2	Hoto-Hedo Farmers Group	16	12.8
3	Fabulous Designs Women's Group	13	10.4
4	Rise and Shine Women's Group	10	8
5	White Water Conquers Sports Club	8	6.4
6	Golden Laced Poultry Group	7	5.6
7	Mighty Believers Poultry Group	7	5.6
8	Unity and Power Group	6	4.8
9	Barabina Fresh Delights	6	4.8
10	Oko Kahota Organic Vegetable Farmers Group	5	4
11	Red Hill Village Council	5	4
12	Arukamai Golden Cream Bakery	4	3.2
13	Barima Fresh Catch Fishing Group	4	3.2
14	Fantastic Diamond Fashion Group	4	3.2
15	Kamwatta Village Council	4	3.2
16	Blue Flame Women's Group	3	2.4
17	Mabaruma Premiere Cocoa Growers	3	2.4

18	Sunshine Ladies Group	3	2.4
----	-----------------------	---	-----

Table 26: Survey Respondent Distribution across BP groups – – Moruca

No.	Group Name	Count	% of Total
	Total	79	100.0
1	Cabora Farmer's Group	20	25.3
2	Waramuri Women's Investors Group	15	19.0
3	Karaburi Women's Group Cooperative Society LTD	12	15.2
4	Kayrie and Islands Women's Group	8	10.1
5	Koko Cooperative Society	8	10.1
6	Manawarin Golden Bread Association	6	7.6
7	Moracupha Triplets Women's Group	6	7.6
8	Kumaka – Men's Group	2	2.5
9	New Uprising Women's Group	2	2.5

Region 9

13.1.3. Respondents' distribution across BP groups in Region 9

Overall, the Region 9 data illustrate varying degrees of concentration in the survey sample across districts. While some districts (such as South Central Rupununi) are strongly influenced by one group within the sample, others (such as South Pakaraimas and North Rupununi) reflect a more diversified representation of Business Plan groups. As noted above, these figures describe how respondents in the survey sample are distributed across groups, and should not be interpreted as reflecting actual group size or overall participation levels within the districts.

Central Rupununi and North Rupununi each recorded 46 surveyed respondents linked to Business Plans, while South Pakaraimas recorded 47 respondents, Deep South Rupununi 34, and South Central Rupununi 28. Although the total number of surveyed respondents is similar in several districts, the internal distribution across groups differs.

In Central Rupununi (46 surveyed respondents), participation in the sample is spread across nine groups. The Nappi Village Council accounts for 14 respondents (30.4% of

the district sample), followed by the Quatata Brick Making Group (23.9%) and Kumu Village Council (15.2%). The remaining respondents are distributed across smaller groups, each representing between roughly 2% and 13% of the district sample. This suggests a relatively broad coverage of groups within the survey. In Deep South Rupununi (34 respondents), the distribution shows moderate concentration. The Awarewaunau Sewing & Craft Group represents 26.5% of surveyed respondents, while the Maruranau Village Council accounts for 23.5%. Together, these two groups represent approximately half of the district's sampled respondents. The remainder are distributed across smaller organizations, including Aishalton Ranchers (14.7%) and Bashaizon Women's Group (11.8%), among others. The survey evidence for this district is therefore shaped by a fewer relatively prominent groups within the sample.

In North Rupununi (46 respondents), the pattern is somewhat more evenly distributed. The Massara Village Council accounts for 23.9% of surveyed respondents, while several other groups (including the Aranaputa Livestock Project and the Kwatamang Women's Group) each represent 13.0% of the district sample. Additional groups such as the Annai Youths Butcher Shop and Massara Women's Group each account for roughly 11%. This suggests a relatively diversified representation of group experiences within the survey sample for this district. By contrast, South Central Rupununi (28 respondents) exhibits the highest degree of concentration in the survey sample. Nearly half of respondents (46.4%) belong to the Koshardin Youth Group, with the remaining respondents distributed among smaller groups such as Rupunau Village Council (14.3%) and Shulinab Youth Group (14.3%). Because almost half of the district sample is linked to a single group, district-level findings for South Central Rupununi should be interpreted with caution, as they largely reflect the experience of that group within the survey.

Finally, South Pakaraimas (47 respondents) displays the most balanced distribution of surveyed respondents across groups. Three groups (the Morning Glory Women's Group, Taushida Youth Initiative, and Tiger Pond Village Council) each account for 17.0% of district respondents. Several other groups, including Karasabai Women's Sewing Group, Pai Pang Village Council, and Enskerang & Anike Group, each represent around 12–13% of the sample. No single group dominates the district's surveyed respondents, suggesting that findings for South Pakaraimas draw on a comparatively broad range of group experiences within the sample.

Table 27: Respondents Distribution across BP groups in Region 9

Metric	Central Rupununi	Deep South Rupununi	North Rupununi	South Central Rupununi	South Pakaraimas
Total Respondents in groups	46	34	46	28	47
Largest Group	Nappi Village Council (14)	Awarewaunau Sewing & Craft Group (9)	Massara Village Council (11)	Koshardin Youth Group (13)	Morning Glory Women's Group (8)
% Held by Largest Group	30.4%	26.5%	23.9%	46.4%	17.0%

Table 28: Group Respondent Size and Distribution by District in Region 9

Group respondents by district (number and % of district)				
Central Rupununi (46 respondents)	Deep South Rupununi (34 respondents)	North Rupununi (46 respondents)	South Central Rupununi (28 respondents)	South Pakaraimas (47 respondents)
Nappi Village Council – 14 (30.4%)	Awarewaunau Sewing & Craft Group – 9 (26.5%)	Massara Village Council – 11 (23.9%)	Koshardin Youth Group – 13 (46.4%)	Morning Glory Women's Group – 8 (17.0%)
Quatata Brick Making Group – 11 (23.9%)	Maruranau Village Council – 8 (23.5%)	Aranaputa Livestock Project – 6 (13.0%)	Rupunau Village Council – 4 (14.3%)	Taushida Youth Initiative – 8 (17.0%)
Kumu Village Council – 7 (15.2%)	Aishalton Ranchers – 5 (14.7%)	Kwatamang Women's Group – 6 (13.0%)	Shulinab Youth Group – 4 (14.3%)	Tiger Pond Village Council – 8 (17.0%)
Kwatamang Women's Group – 6 (13.0%)	Bashaizon Women's Group – 4 (11.8%)	Massara Women's Group – 5 (10.9%)	Meriwau Youth Group – 2 (7.1%)	Karasabai Women's Sewing Group – 6 (12.8%)
Yupukari Village Council – 5 (10.9%)	Maruranau Tanning Group – 3 (8.8%)	Annai Youths Butcher Shop – 5 (10.9%)	Rupunau Youth Group – 2 (7.1%)	Pai Pang Village Council – 6 (12.8%)
Kayaweng Women Agro-Processors – 5 (10.9%)	Aishalton Village Council – 3 (8.8%)	Wowetta Women's Agro Processors – 3 (6.5%)	Kanuku Women's Group – 2 (7.1%)	Enskerang & Anike Group – 6 (12.8%)
Kwatamang Village Council – 4 (8.7%)	Bashaizon Village Council – 2 (5.9%)	Aranaputa Processors Friendly Society – 2 (4.3%)	Quiko Village Council – 1 (3.6%)	Karasabai Village Council – 3 (6.4%)

Quatata Farmer's Group – 3 (6.5%)		Annai Women's Group – 2 (4.3%)		Tiger Pond Progressive Youth Group – 2 (4.3%)
Yupukari Processors Group – 1 (2.2%)		Wowetta Village Council – 2 (4.3%)		

13.2. Group switched from original business plan

Region 1

In Region 1, almost all groups (96.3%) reported that they did not switch from their original business plan, while only one group (3.7%) indicated that they had made a change. The sole group that switched was the *Karaburi Women's Group Cooperative Society LTD*, located in Moruca, Village of Karaburi. The reason provided for the change was a directive from the Ministry of Agriculture to adopt a different business plan.

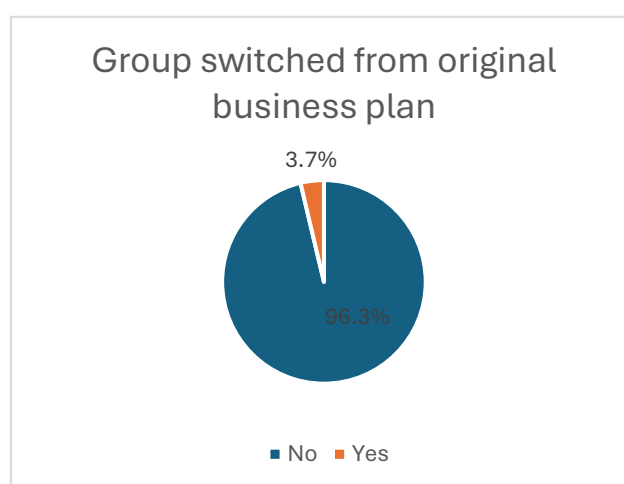
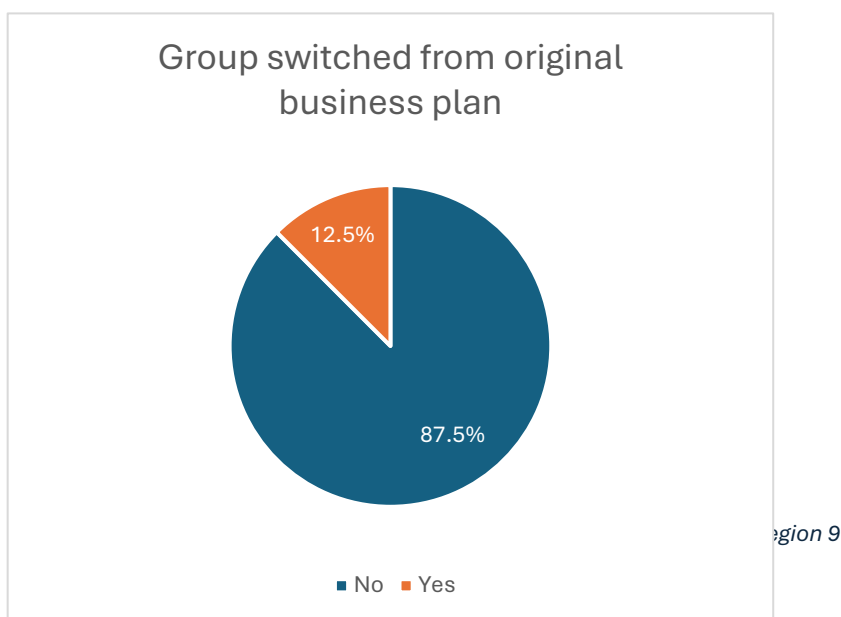


Figure 32: Group switched from original business plan

Region 9

In Region 9, 87.5% of groups reported that they did not switch from their original business plan, while 12.5% indicated they had made a change. The reasons given for switching included insufficient funds to complete planned activities, lack of management, challenges in handling equipment, long dry seasons affecting production,



safety concerns, shifting to buying peanuts from local farmers instead of self-production, purchasing additional equipment, and inability to pay labor costs.

The five groups that reported switching were:

- Maruranau Tanning Group
- Koshardin Youth Group
- Kwatamang Women's Group
- Tiger Pond Village Council
- Aranaputa Processors Friendly Society (AFPS)

13.3. Production practices the groups find useful and implemented

The questionnaire included a section on Crop Production Practices, asking respondents whether their BP group had applied any of a list of regenerative, adaptive or sustainable practices in the production of their main crop. Respondents were also asked to report whether they had found the adopted practices useful. Based on the available data, across the two regions only 27 respondents from 11 distinct BP groups reported that the group had adopted at least one of the listed crop production practices. The findings suggest that the diffusion and uptake of regenerative and climate-adaptive techniques within groups and BP members remains extremely sparse. With these limitations in

mind, some observations will be made on the relative diffusion and perceived usefulness of different types of practices in the two regions.

Region 1

In Region 1, soil fertility management emerged as the most widely used practice, accounting for 30.0% of all “used” responses. This was followed by the use of compost and manure, and rainwater harvesting and storage, each represented 20.0% of the total. By contrast, recycling water from fish ponds for crop production and planting methods (direct seeding, transplanting) were implemented less often, each making up 10.0% of total “used” responses.

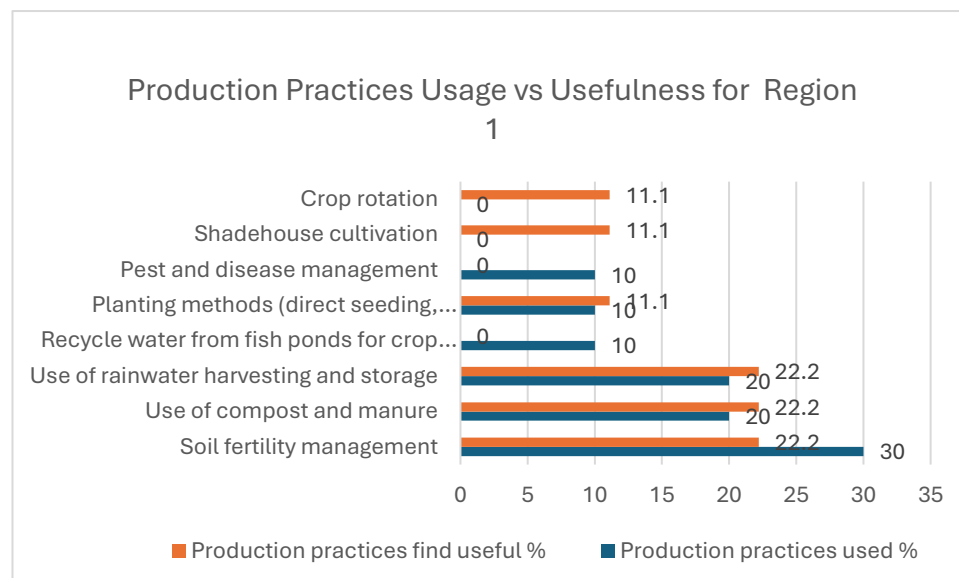


Figure 34: Production practices usage vs. usefulness for Region 1

When assessing perceived effectiveness, soil fertility management remained the top-ranked practice, representing 22.2% of total “useful” responses, suggesting that most groups who implemented it found it beneficial. Similarly, the use of compost and manure and rainwater harvesting and storage each accounted for 22.2% of “useful” responses, highlighting their value to those who applied them. Planting methods (direct seeding, transplanting) was considered useful in 11.1% of the cases, while recycle water from fish ponds received no “useful” endorsements despite some implementation.

Overall, practices with the highest adoption rates also tended to be valued for their effectiveness, suggesting a coherent link between implementation and positive outcomes.

Region 9

The most implemented production practices among groups were *planting methods* (*direct seeding, transplanting*) and *soil fertility management*, each accounting for 20.0% of all “used” responses. *Pest and disease management* represented 10.0%, while *recycle water from fish ponds* and *use of compost and manure* were not reported as being implemented by any group. This pattern points to a focus on basic crop establishment and soil improvement activities, with very limited uptake of resource recycling or composting techniques.

When groups were asked which practices were effective for their main crop, *planting methods*, *soil fertility management*, and *use of compost and manure* each accounted for 21.1% of total “useful” responses. *Recycle water from fish ponds* and *pest and disease management* each contributed 10.5%. Notably, 2 groups (10.5% of “useful” responses) selected “None”, indicating they did not find any of the listed practices effective.

Some practices, such as *use of compost and manure*, were rated highly useful despite no reported adoption by groups—suggesting recognition of their value through training or observation rather than hands-on application. Conversely, certain implemented practices (such as *crop rotation* and *weed management*) were absent from the “useful” responses, indicating that they may not have been perceived as impactful by the groups. For Region 9 groups, there is alignment between adoption and perceived usefulness for planting methods and soil fertility management. However, there are also clear opportunities to encourage adoption of practices like composting, which are recognized as effective but have low uptake.

13.4. Cultivated new crops as a result of HESAD project

In Region 1, specifically in the Mabaruma district, the HESAD project facilitated the introduction of three new crops through the efforts of local producer groups. The Hoto-Hedo Farmers Group introduced pineapples, the Oko Kahota Organic Vegetable Farmers Group began cultivating cabbages, and the Mabaruma Premiere Cocoa Growers started producing cucumber. Thus, each group piloted a different crop to potentially expand agricultural production in the area.

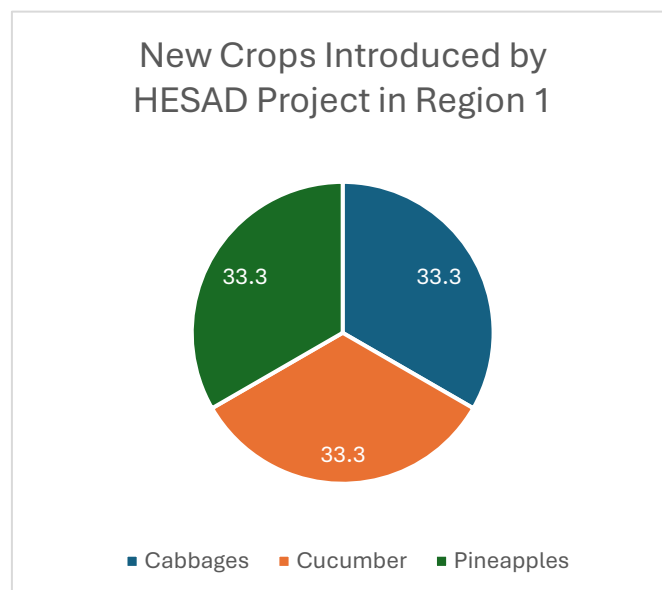


Figure 35: New crops introduced by HESADP in Region 1

In contrast, in Region 9, there were no reports of new crops being introduced as a result of the HESAD project.

13.5. Descriptive Insights on Crop Production Among BP Groups

13.5.1. Crop Profiles and Reported Production Changes

This subsection presents a summary of the information on crop production reported by a limited number of Business Plan (BP) groups during the endline survey. It is important to emphasize that the number of groups who provided some quantitative production data during the survey is very small (5 in Region 1 and 11 in Region 9), and that the figures are self-reported. Moreover, given that the production data were not complemented by data on the land area devoted to each crop nor by input data, the data do not permit to derive conclusions on productivity trends or aggregate output growth. A detailed analysis of farm-level financial and economic results is instead presented in Economic and Financial Analysis (EFA) Annex, which is based on structured in-depth production interviews and formal cost modeling, providing a reliable basis for assessing production performance and viability. The data presented here therefore serve an illustrative purpose and focus mainly on the observed patterns of crop specialization and diversification among the few BP groups that reported such information.

In Region 1, crop production data were reported exclusively by groups located in the Mabaruma district. Cassava was the most frequently reported crop (two groups), followed by Pakchoi (two groups), while Bora and Cocoa were each reported by a single group. No crop production data were recorded from Moruca. The figures suggest that cassava (with a total reported production of 5,600lbs) remains the main crop among reporting BP groups in the region, with other crops cultivated at comparatively smaller scale.

In Region 9, as in Region 1, cassava clearly emerges as the dominant crop, reported by eight out of 11 groups across multiple sub-regions with a total production of 22,783 lbs. This confirms cassava's continued centrality as a staple and income-generating crop within BP-supported production systems. At the same time, the survey evidence also reveals that important patterns of crop diversification are emerging among

some groups. A particularly notable case is the Morning Glory Women's Group in Taushida (South Pakaraimas), which reported a highly diversified vegetable production portfolio. The group indicated active cultivation of a wide range of crops, including bora, watermelon, tomatoes, sweet peppers, passion fruit, pakchoi, ochro, lettuce, hot peppers, eschallot, cucumber, and boulanger. Importantly, for all of these crops the group reported increased production compared to the pre-HESAD period, attributing the improvements to project-supported activities. While this evidence is based on self-reported data from a single group, it illustrates how Business Plan support may facilitate both production expansion and diversification into higher-value horticultural crops.

Beyond this case, other groups in Region 9 reported more limited diversification, typically combining cassava production with one or two additional crops such as purple potato, bora, or sweet peppers. Overall, the production data suggest that while cassava remains structurally dominant, there are instances of more intensive and diversified horticultural strategies emerging within specific BP groups.

In terms of self-assessed production change across the two region, production increases compared to the pre-HESAD period were reported for 48.4% of the crops, while similar (stable) production levels were reported for 32.2% of the crops and lower production was reported for 19% of the cases. In Region 9, where more groups provided information on crops production, greater production was by large the predominant outcome (63% of groups). This included larger cassava harvests from Taushida, Koshardin, and Nappi Village Councils, as well as a wide range of crops cultivated by the Morning Glory Women's Group, and purple potato from the Kwatamang Women's Group. Similar production was noted in 33% of the groups, including cassava from the Kumu, Kwatamang, Aranaputa, and Wowetta Village Councils, along with sweet peppers and bora by other groups. Only one instance (4%) of lower production was recorded, with the Rupunau Village Council reporting reduced cassava production compared to the pre-project level.

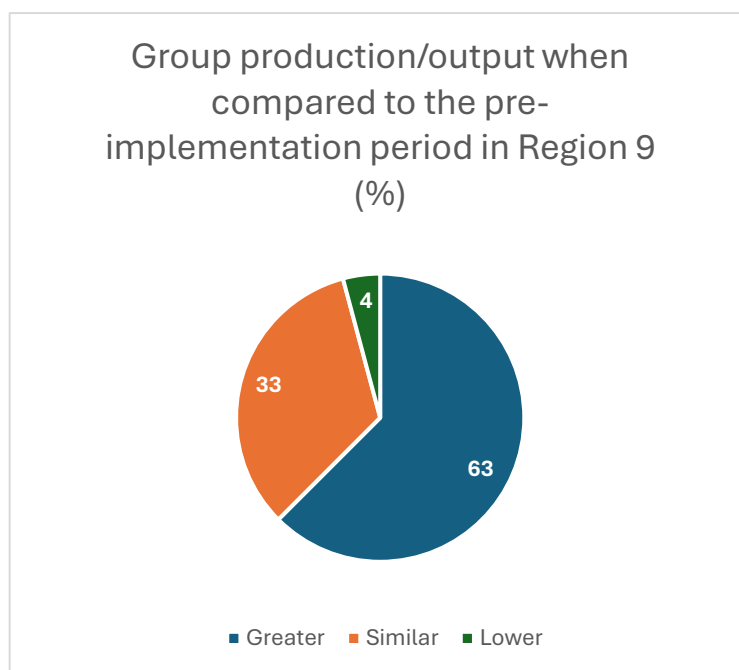


Figure 36: Group production/output when compared to the pre-implementation period in Region 9

13.5.1.2. HESADP BP funds usage for crops

Respondents were asked to indicate for which purposes the HESAD Business Plan (BP) funds were used. As explained in Section 13.1 above, multiple respondents were interviewed from the same BP group, with uneven respondent distribution across BPs. For this reason, to avoid overcounting the expenditure categories selected by the BPs with most surveyed respondents, the responses were aggregated by BP: each Business Plan was counted only once per expenditure category, regardless of how many respondents associated with that BP selected the option. The percentages thus represent the share of Business Plans (with valid responses) that used funds for a given purpose; otherwise said, a BP is counted as “using” funds for a specific purpose if any respondent linked to that BP selected it. It should also be noted that the information presented below only gives a descriptive indication of the main categories for which BP funds were used, but does not reflect the actual financial allocation or relative share of total expenditure devoted to each category. As such, the results illustrate the frequency of reported uses rather than the weight of each expense category within the overall investment. The results are presented in Figure 43 below, comparing Region 1 and Region 9

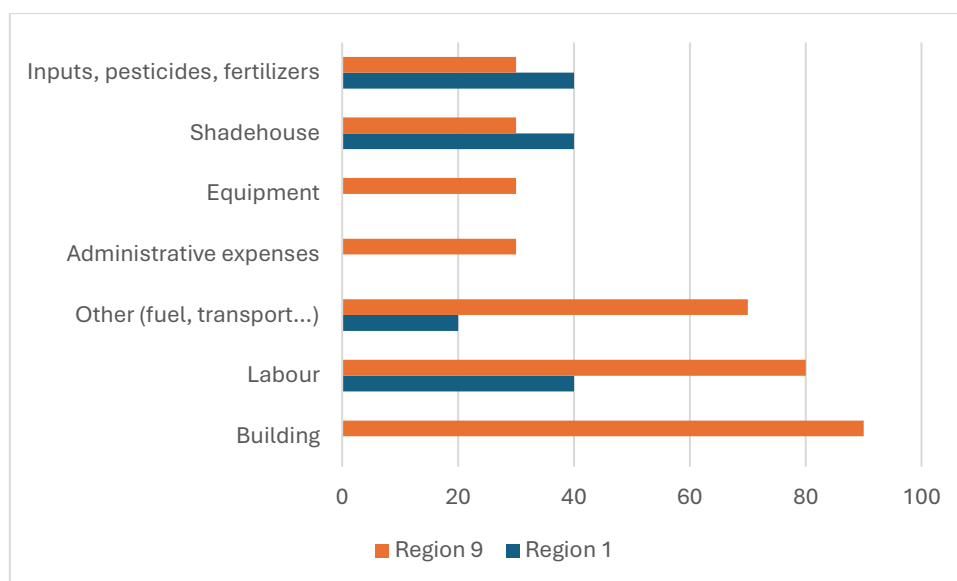


Figure 37: Funds use categories for BP focusing on crop production (BP-level aggregation)

The comparison reveals some differences in BP funds use patterns between the two regions. In Region 1, expenditure patterns appear relatively balanced across a small number of categories. Among the five BPs with valid responses, 40% reported using funds for Shadehouse construction, Inputs (including pesticides and fertilizers), and Labour. Other expenses (covering items like transport, fuel and others) were instead reported by 20% of BPs, while no BP reported allocating funds to Building, Equipment, or Administrative costs. Overall, the pattern suggests a focus on strengthening crop production capacity through protective infrastructure (shadehouses), working capital inputs, and labour support.

In Region 9, by contrast, expenditure patterns show a stronger orientation toward operational and infrastructure-related costs. Among the eleven BPs with valid responses, 90% reported allocating funds to Buildings and 80% to Labour, making these the dominant categories; “Other” expenses were also frequently cited (70%). Categories such as Shadehouse, Equipment, and Administrative costs were each reported by 30% of BPs, while Inputs were reported by 20% of the BPs.

This comparison highlights two important differences. First, Region 9 BPs show a heavier emphasis on construction and labour-related expenditures, suggesting that project resources were often directed toward establishing or upgrading physical infrastructure and supporting workforce needs. Second, Region 1 BPs appear to have allocated resources more evenly across productive inputs and protective infrastructure, with less

concentration in building-related investments. These findings should be cautiously interpreted in light of the relatively small number of BPs with valid responses (five in Region 1 and eleven in Region 9).

13.5.2. Livestock production

13.5.2.1. Group/village council own any livestock

In Region 1, only 38.7% of valid respondents reported that their group or village council owns livestock. This indicates that livestock ownership is relatively limited within community-managed production activities in the region. In contrast, Region 9 reported a significantly higher rate, with 83.3% of valid respondents confirming ownership of livestock by their group or village council. This suggests that livestock production is a more common

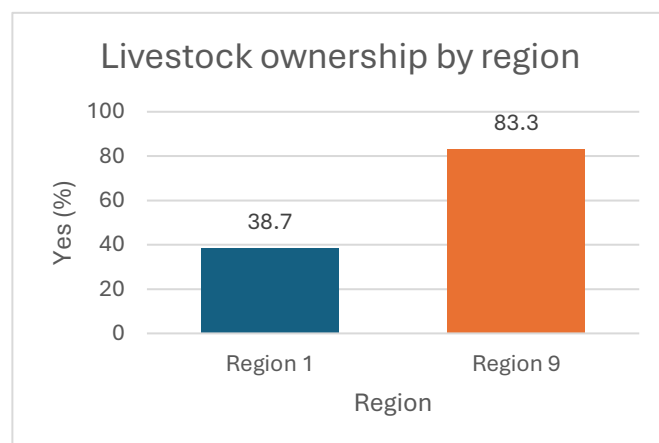


Figure 38: Livestock ownership by region

and established component of group-based economic activities in Region 9. Livestock is more common in Region 9 also in terms of the involvement of the surveyed BP groups, given that livestock activities were undertaken by 7 BP groups in Region 1 (26% of the 27 groups covered by the survey in this Region), and 19 BP in Region 9 (47%).

Region 1

Table 29: Livestock Types Managed by Groups – Region 1

Group Name	Livestock Type
Golden Laced Poultry Group	Poultry Broiler, Poultry Layers
Hoto-Hedo Farmers Group	Poultry Broiler
Karaburi Women's Group Cooperative Society LTD	Cattle
Kayrie and Islands Women's Group	Poultry Layers
Moracupha Triplets Women's Group	Poultry Layers
Red Hill Village Council	Swine
Waramuri Women's Investors Group	Poultry Broiler

Region 9

Table 30: Livestock Types Managed by Groups – Region 9

Group Name	Livestock Types
Taushida Youth Initiative Group	Cattle
Koshardin Youth Group	Poultry Broiler
Nappi Village Council (Nappi Honey Producers Association)	Cattle, Swine
Rupunau Village Council	Cattle
Rupunau Youth Group	Sheep
Morning Glory Women's Group	Cattle
Bashaizon Village Council	Cattle
Aishalton Ranchers	Cattle
Aishalton Village Council	Swine, Poultry Broiler
Tiger Pond Progressive Youth Group	Poultry Broiler
Tiger Pond Village Council	Cattle
Maruranau Village Council	Cattle, Swine
Quiko Village Council	Cattle
Massara Village Council	Cattle
Shulinab Youth Group	Cattle, Creole Birds (including black giants)
Quatata Farmer's Group	Cattle
Aranaputa Livestock Project/ Aranaputa Village Council	Cattle
Kumu Village Council	Creole Birds (including black giants)
Wowetta Village Council	Poultry Broiler

15.5.2.2. Livestock production

Given the limited number of BPs reporting structured livestock data, the results presented here should be interpreted as descriptive of the surveyed BPs rather than representative of livestock production levels in the broader regions. With this limitations in mind, livestock activities under the HESAD-supported Business Plans (BPs) show a diversified pattern across regions.

Across the surveyed BPs, cattle rearing was the most widespread livestock activity, reported by 14 Business Plans (13 of which in Region 9), with an average herd size of 57 head per BP. This suggests that cattle-based investments were relatively common but primarily concentrated in Region 9 with moderately scaled operations in savannah and pasture-based systems.

Poultry production was also prominent, undertaken by 11 Business Plans (divided evenly between the two Regions), with an average flock size of 121 birds per BP. Given the nature of poultry production (particularly broilers), these figures reflect cyclical production

systems rather than static herd sizes maintained across the year. Poultry therefore represents the second most common livestock activity. Within this category, BP working with Creole birds (including black giants) were reported in 2 cases, with an average of 49 birds per plan, suggesting smaller scale. It is also noted that poultry were, as per the reported data, the most affected by losses, with an aggregate of 113 recorded losses for layers, 75 for broilers and 25 for creole birds across the two regions. Minimal losses were instead recorded for the other livestock.

Swine production was reported by 4 Business Plans, with an average of 37 animals per BP. While less widespread than cattle or poultry, swine operations appear to have been implemented at a scale that may allow for semi-commercial activity. Sheep production was the least common activity among the surveyed livestock BPs, reported by a single Business Plan but at a relatively substantial scale of 180 head.

Overall, the livestock data indicate that cattle and poultry were the dominant livestock investment categories under HESAD BPs, both in terms of number of participating plans and scale of animal holdings. Other species such as swine, creole birds, and sheep were present in fewer cases and appear more concentrated in specific BPs. Given the small number of reporting plans and the absence of detailed productivity or financial data in this section, these figures should be interpreted as providing a general overview of the types of livestock activities surveyed, rather than a basis for productivity or profitability analysis. More detailed assessment of livestock performance and economic returns is provided in the Economic and Financial Analysis (EFA), based (as in the case of crop models) on dedicated in-depth interviews.

13.5.2.3.HESADP fund Usage for livestock

Respondents linked to livestock-focused Business Plans were asked to indicate the categories for which HESAD funds were used. As in the crop analysis, results are presented using BP-level aggregation: each Business Plan is counted once per expenditure category, regardless of how many respondents from the same BP reported the same use. The percentages therefore reflect the share of livestock BPs that reported using funds for a given category, not the proportion of total expenditure allocated to that category. The findings show strong similarities across the two regions, particularly in infrastructure and labour-related investments.

In Region 1, the vast majority of livestock BPs reported using funds for Building materials (85.7%) and Labour (85.7%), indicating that most livestock investments involved construction-related works and workforce inputs. More than half of BPs also reported spending on Feed (57.1%) and Other expenses such as fuel and transport (57.1%). Around 43% reported expenditures on Livestock housing materials, Medication and supplements, and Administrative expenses, while smaller shares allocated funds to Breeding stock (28.6%) and Equipment, machinery and supplies (28.6%).

In Region 9, a similarly high concentration of BPs reported using funds for Building materials (88.9%) and Labour (83.3%), confirming that infrastructure development and labour inputs were central components of livestock investments. A notably large share of BPs also reported expenditures under Other (fuel, transport, etc.) (83.3%) and Livestock housing materials (72.2%), suggesting that logistical and housing-related costs were particularly important in this region. Around half of BPs reported spending on Medication and supplements (50%), while lower shares reported expenditures on Feed (38.9%), Breeding stock (33.3%), Administrative expenses (27.8%), and Equipment, machinery and supplies (22.2%).

Overall, livestock BPs in both regions show a strong emphasis on physical infrastructure (building materials and housing) and labour, indicating that project support was often directed toward establishing or upgrading production facilities rather than focusing solely on operational inputs such as feed or breeding stock. Region 9 appears to show relatively greater emphasis on transport-related and housing expenditures, possibly reflecting greater distances, logistical constraints, or the need for more substantial structural investments. It is important to reiterate that these figures represent the frequency with which expenditure categories were used across livestock BPs, not the relative financial weight of each category within total project budgets. The data therefore provide a descriptive overview of the main types of investment supported under livestock Business Plans, rather than a financing costs breakdown.

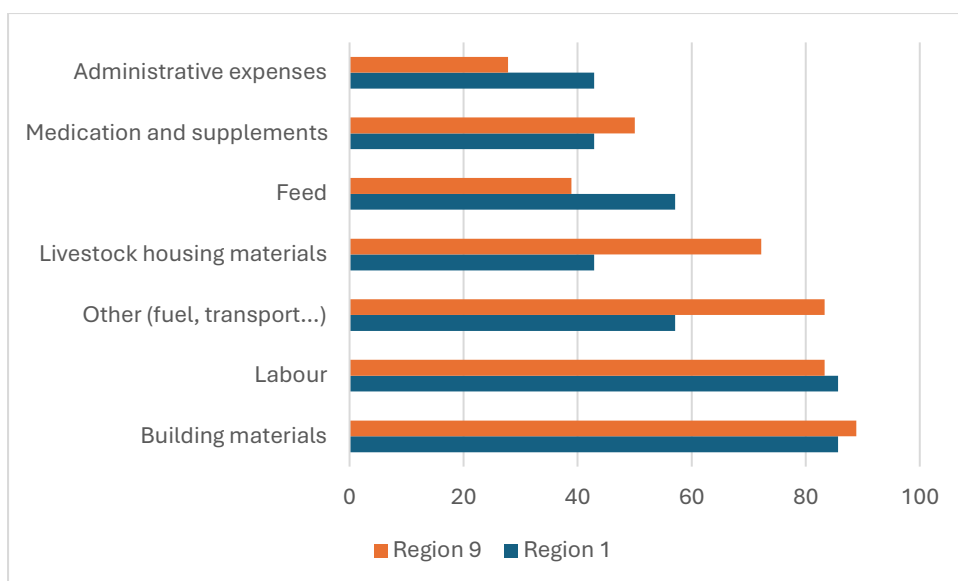


Figure 39: Figure 43: Funds use categories for BP focusing on livestock (BP-level aggregation)

13.5.3. Apiculture

13.5.3.1. Honey Production

There was no respondent involved in honey production in Region 1. In Region 9, a total of 10 respondents reported engaging in apiculture activities. Collectively, they own 26 hives, with individual ownership ranging from 1 to 8 hives. This indicates a mix of small- and medium-scale beekeeping operations within the region.

Over the past 12 months, Region 9 recorded a total honey production of 51 gallons, with individual outputs ranging from 0 to 12 gallons per respondent. Among the producers, eight respondents reported harvesting beeswax in addition to honey, while two respondents collected other bee products, indicating some diversification in apiculture outputs beyond honey production.

In Region 9, 60% of respondents reported honey production levels similar to those before the HESAD project, while 30% indicated a decrease in production. Only 10% experienced an increase, suggesting that for most producers, output has either remained steady or declined compared to the pre-HESAD period.

13.5.3.2. Apiculture practices

Eight respondents reported implementing the practice of placing hives under shade, while six respondents placed hives on higher grounds to protect against environmental

risks. All ten respondents participated in beekeeping training, indicating full engagement in capacity-building efforts to improve apiculture practices.

13.5.4. Fisheries

13.5.4.1. Production

Fisheries production was only recorded in one district, Mabaruma, in Region 1. No group was involved in Fisheries production in Region 9.

Table 31: Fish Catch Statistics by Species

Fish Species	Total Number of Groups (N)	Mean Catch per Month (lbs)	Median Catch per Month (lbs)	Months Fished	Total Catch (lbs)	Share of Total Catch (%)
Total	5	66.4	66	6	1,980	100%
Morocut	3	70.7	66	6	1,260	63.6%
Imeri	2	60	60	6	720	36.4%

In Mabaruma District, three fishing groups – Barima Fresh Catch Fishing Group, Fisherman Squad, and Red Hill Village Council – reported targeting Morocut, while two groups – Fisherman Squad and Red Hill Village Council – reported targeting Imeri over the past 12 months.

For Morocut, the average monthly catch was 70.7 lbs, with groups fishing for an average of six months during the year. This amounts to an estimated 1,260 lbs of total catch across the three groups.

In Guyana, “Morocut” (*scientific name: Mylossoma aureum*) is the local name people in the northwest commonly use for a large pacu-type fish, a big, omnivorous characin native to the Amazon–Orinoco system.
Source: Fisheries Department, Ministry of Agriculture

For Imeri, the average monthly catch was 60 lbs, also sustained over six months, resulting in a combined annual catch of 720 lbs from the two groups.

Taken together, the overall recorded catch in Mabaruma District was 1,980 lbs, with Morocut accounting for 63.6% and Imeri for 36.4% of total production. Most fishing groups indicated that their fish production under the HESAD project was either greater or similar compared to the pre-implementation period, with 40% reporting higher production, 40% reporting no significant change, and 20% experiencing lower production.

Trachelyopterus galeatus (Common name: Imeri) belongs to the family **Auchenipteridae** and is widely distributed across northern South America, including countries such as Guyana, Brazil, Argentina, Peru, Colombia, Suriname, and Trinidad and Tobago. It is common in tropical freshwater habitats and is a nocturnal catfish that can survive in low-oxygen swampy environments.



Source: Fisheries Department, Ministry of Agriculture

Figure 40: Imeri- Image source - Daniella De Costa

13.5.4.2. HESADP Fund usage for Fisheries

In Region 1, fisheries-related BP most frequently financed the acquisition Fishing Boats (37.5%) and Fishing Gear (31.3%), highlighting a strong focus on equipping groups for fishing activities. A smaller proportion also used funds to cover Labour costs (12.5%), Other Costs such as transportation, fuel, and lubricants (12.5%), and Equipment (6.3%).

This indicates that project-funded support was heavily concentrated on fishing-related assets and operational support, while in Region 9, the absence of fishing groups meant no funds were used in this category.

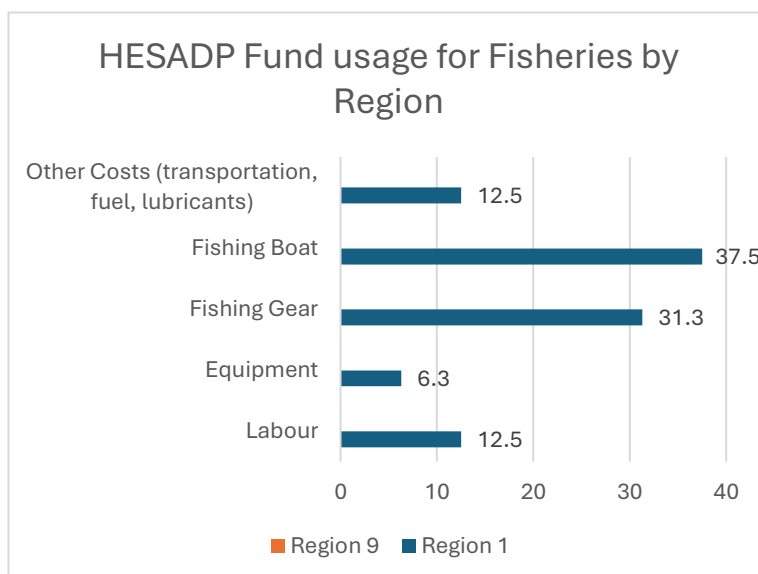


Figure 41: HESADP fund usage for Fisheries by Region

13.6. Market channels and access

Respondents were asked to report their three main market channels, as well as additional information on their market relationships (share going to the top buyer, distance to market and mode of transportation, market functionality).

Figure 49 below compares the main market channel reported by respondents in Region 1 and Region 9, based on a total of 137 valid responses. The distribution of first-choice buyers reveals two important features of market engagement for HESAD beneficiaries: the central role of institutional channels, and the predominance of direct, relationship-based private sales over more formal commercialization pathways.

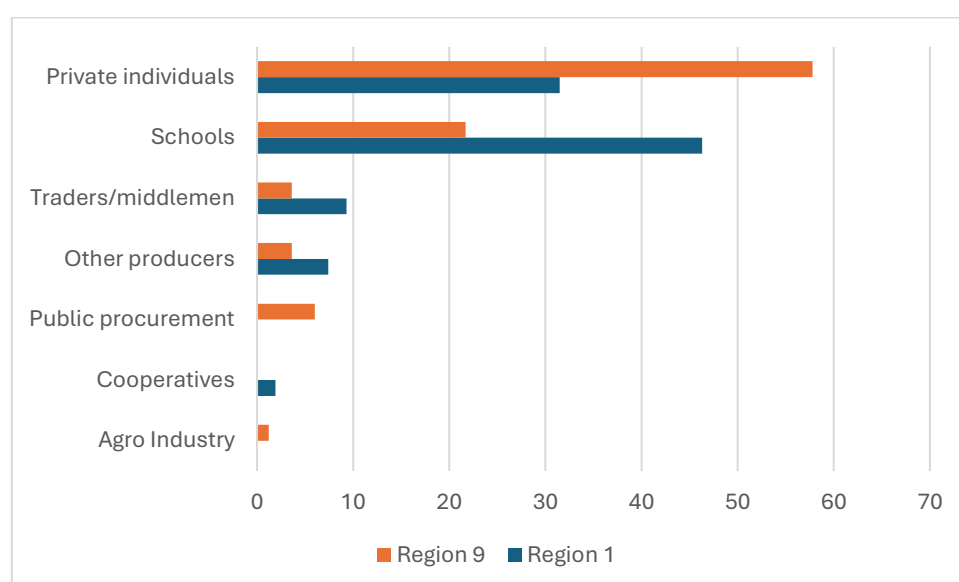


Figure 42: Main market channel reported by respondentsjk

First, schools (intended as purchases from school meal programmes) play a major role. This is especially true in Region 1, where nearly half of respondents (46.3%) identify schools as their main buyer. Even in Region 9, where private sales otherwise dominate, schools remain the second most frequently reported market outlet (21.7%). When taken together with public procurement (6%), institutional market channels account for 26.7% of first-choice buyers in Region 9 and thus represent a substantial and structured demand source. In this sense, the support provided in some cases by PCIPs for the establishment or strengthening of school meals programmes (12 PCIPs overall as per

the Project Dashboard) may have helped strengthen market linkages in the targeted communities.

Second, outside schools and public procurement, private individuals constitute the dominant market outlet, particularly in Region 9 (57.8%); although to a lesser extent, their role is also relevant in Region 1 (31.5%). This type of sales channel appears to be largely based on direct transactions rather than structured commercialization mechanisms. In fact, more formal market intermediation channels remain limited, traders/middlemen accounting for only 9.3% of main channels in Region 1 and 3.6% in Region 9, and negligible levels of engagement with Cooperatives (1.9% in Region 1; 0% in Region 9) or Agro-industry (not reported in Region 1; 1.2% in Region 9).

Overall, the results on main channels highlight a dual market structure. On the one hand, institutional markets (particularly schools) provide structured demand that appears aligned with primary production activities; on the other hand, private individual buyers represent the dominant commercial channel but largely outside formal value chain systems. Strengthening market aggregation mechanisms, particularly for structured BP groups, could thus represent an area for further development if the objective is to enhance market stability, scale, and resilience.

With regards to the share of sales going to the top buyer, Figure 50 shows that most respondents have a high level of dependency on their main market channel given that, for more than half of them, the share going to the top buyer is above 75%.

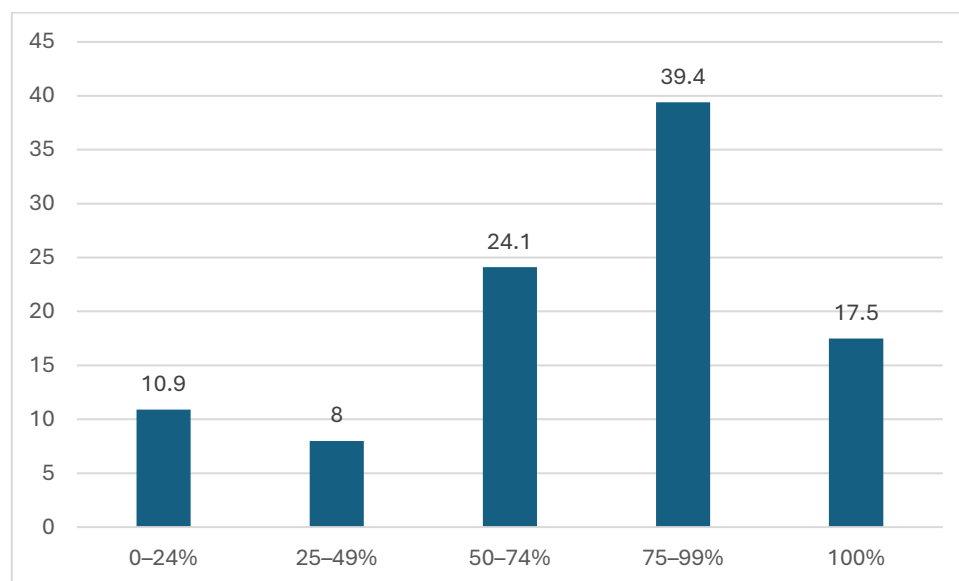


Figure 43: Share of sales going to the main buyer

This is further confirmed by the fact that the median share going to the most frequently cited market channels (schools and private individuals) is respectively 80% and 75%.

Within this widespread picture of high reliance on one market channels, it is still important to look at the entire range of market options available to producers in the project area. Figure 51 shows the share of households that reported selling their products through each market channel, irrespective of whether they indicated it as the first, second or third choice in terms of volumes. The picture largely confirms the trend described above: the most widely available market channels are the sales to private individuals, followed by institutional channels (schools and public procurement). However, direct sales to other producers are quite widespread (reported by 46% of respondents in Region 1 and 22.9% in Region 9), further reinforcing the finding on the reliance on private, direct selling channels. Conversely, even when looking at the aggregate market channels data, the role of structured market actors (traders, middlemen, coops, agroindustry) remains negligible not only in terms of volumes, but also in terms of overall access.

It is finally worth noticing that, across both regions, schools are more frequently reported as the main market channel for independent producers not linked to BP groups (65.2% of non-BP producers vs 31% for BP-linked producers in Region 1; and 42.9% for non-BP producers vs 19.7% of BP-linked producers in Region 9). This further confirms the importance of the school meals programmes as a local market outlet for small scale production.

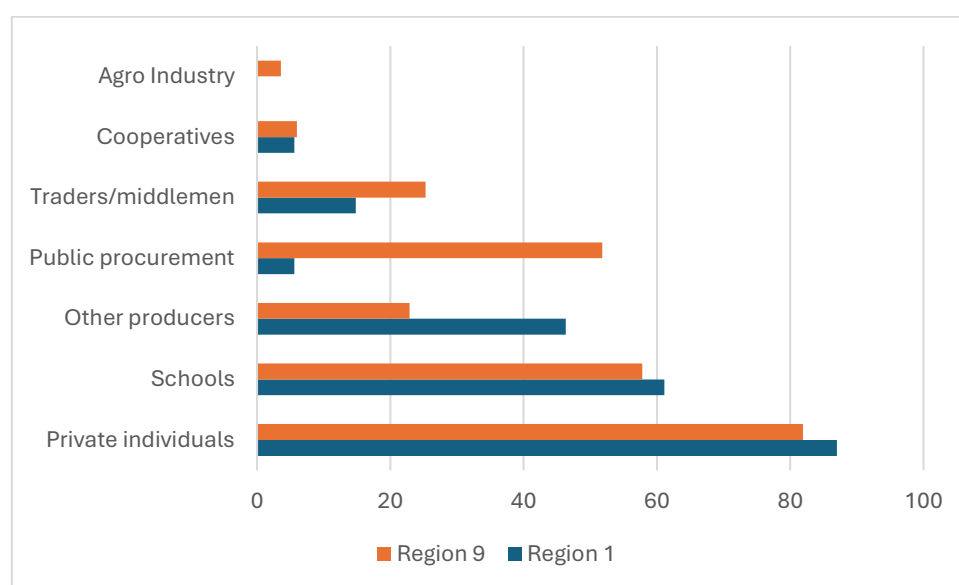


Figure 44: Market channels (aggregate) reported by respondents

13.6.1. Type of Market by Frequency

With regards to the relevance of direct sales to consumers (private individuals and other producers), these sales largely take place in regular markets that are thus often the main market outlet for hinterland producers. According to the data reported by respondents, the markets landscape in Region 1 is dominated by bi-weekly markets in Region 1 (57%) , followed by monthly markets (21%). Smaller proportions attend daily (11%) and weekly (11%) markets, with no participation in other types of markets. Region 9 is instead heavily oriented toward monthly markets (64%), with other market types (32%) also playing a significant role. Bi-weekly markets account for only 4% of responses, and there is no participation in daily or weekly markets. Some of the “other markets” options include selling during the annual regional market, at the annual marketing expo or regional market day, not monthly but whenever it is planned by the village council, participating in village council–planned events, and selling for important cultural days such as Republic Day, Rodeo (for Region 9), and Heritage celebrations.

Overall, Region 1 favors therefore more frequent market cycles, while Region 9 relies more on larger, less frequent market events, including special or non-regular markets.

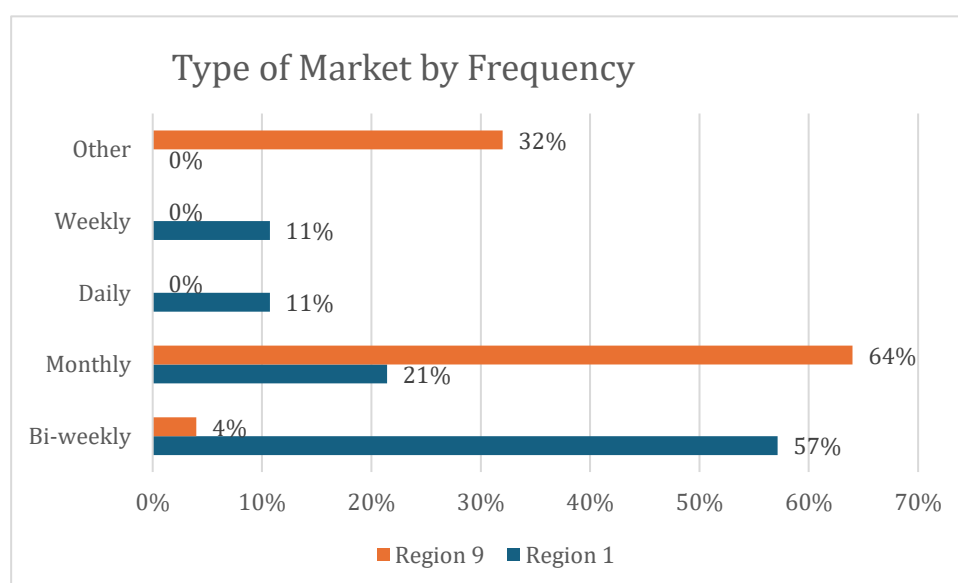


Figure 45: Type of Market by Frequency

13.6.2. Distance to Market and means of transport

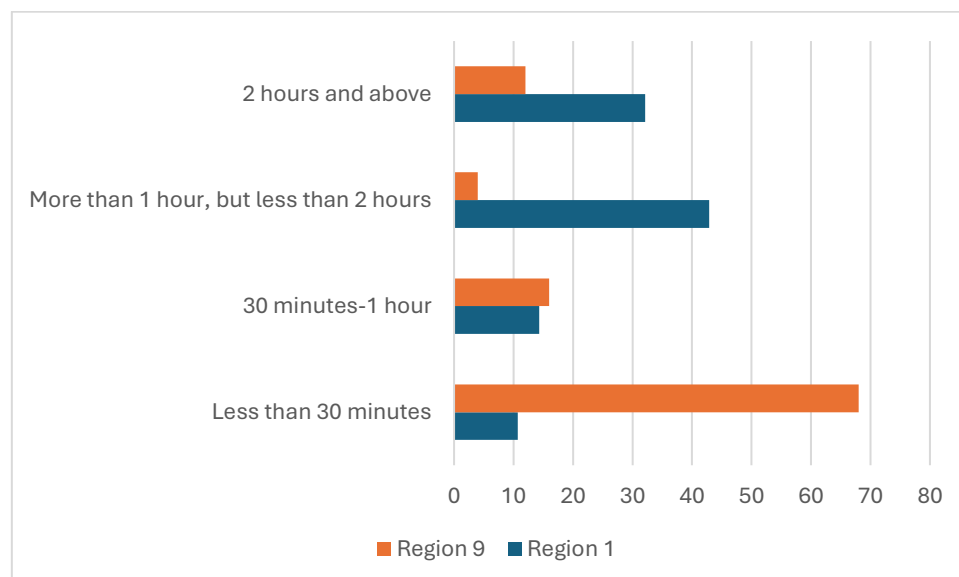


Figure 46: Travel time to the nearest market facility

Information on the distance and mode of travel to the nearest market was reported by 57 respondents. The distribution of travel times to the main market facility highlights a marked contrast between Region 1 and Region 9 in terms of physical market accessibility (Figure 53).

In Region 1, market access is characterized by relatively long travel times. Only 10.7 percent of respondents report reaching the market in less than 30 minutes, and 14.3 percent travel between 30 minutes and one hour. By contrast, most respondents face substantially longer journeys: 42.9 percent report travel times of more than one hour but less than two hours, and a further 32.1 percent travel two hours or more. Taken together, nearly three quarters of respondents in Region 1 require more than one hour to reach a market facility, indicating significant spatial constraints.

The situation in Region 9 is considerably different. A strong majority of respondents, 68 percent, report reaching the market in less than 30 minutes, and an additional 16 percent travel between 30 minutes and one hour. Only a small minority face longer travel times: 4 percent report travel times between one and two hours, and 12 percent report two

hours or more. Overall, 84 percent of respondents in Region 9 reach their market within one hour.

These results suggest that market access conditions are structurally more favourable in Region 9, where most respondents operate within relatively short distances of their main sales outlets. In contrast, producers in Region 1 face significantly greater logistical challenges, with longer travel times likely implying higher transport costs, greater time burdens, and potentially higher exposure to risks related to weather and infrastructure conditions.

With regards to the most common modes of transport, the distribution of responses further illustrates the structural differences in market access conditions between Region 1 and Region 9 (Figure 54). In both regions, the most commonly reported mode of transport is car, pickup, van, or bus, used by 46.4 percent of respondents in Region 1 and 48 percent in Region 9. This suggests that motorized road transport plays a central role in connecting producers to markets in both areas.

However, important regional contrasts emerge beyond this shared pattern. In Region 1, walking remains a significant mode of transport, reported by 25 percent of respondents, and boat or canoe transport accounts for 14.3 percent. The presence of boat transport is particularly notable and reflects the geographic and infrastructural characteristics of Region 1, where river transport continues to be an important mobility channel. Bicycle and electric bike use are limited, each accounting for 7.1 percent.

In Region 9, transport patterns appear more diversified and more strongly oriented toward land-based mobility. Walking accounts for 16 percent, and bicycle use is equally important at 16 percent. In addition, 12 percent of respondents report using ATVs, and 8 percent use motorcycles or electric bikes. Boat transport is absent in Region 9, underscoring different geographic constraints compared to Region 1.

Overall, while reliance on cars and pickups is common to both regions, Region 1 shows greater dependence on walking and river transport, consistent with longer travel times and more difficult terrain. Region 9, by contrast, exhibits a broader use of bicycles, motorcycles, and ATVs, which may contribute to the shorter travel times observed in that region.

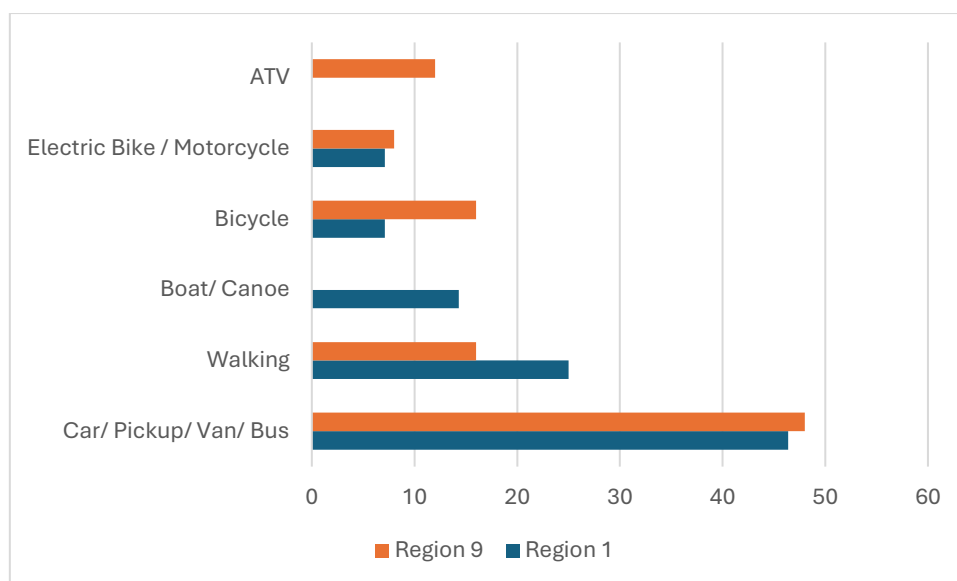


Figure 47: Main mode of transport to the nearest market

Finally, clear differences also emerge between the two regions with respect to how the distance to market facilities compares to before the HESAD project. In Region 1, the responses were relatively mixed. Over one-third (36%) reported that their distance to the market is now longer, while 39% indicated that it remains the same as before the project. A significant 25% experienced a shorter distance, suggesting that for some groups, accessibility improved. In Region 9, the pattern is far more stable. A large majority (80%) stated that the distance is the same, with only 16% reporting a shorter distance and a minimal 4% saying it has become longer. The findings indicate that while Region 9 maintained market accessibility for most respondents, Region 1 experienced more variability, with notable shares reporting both improvements and declines in proximity to markets.

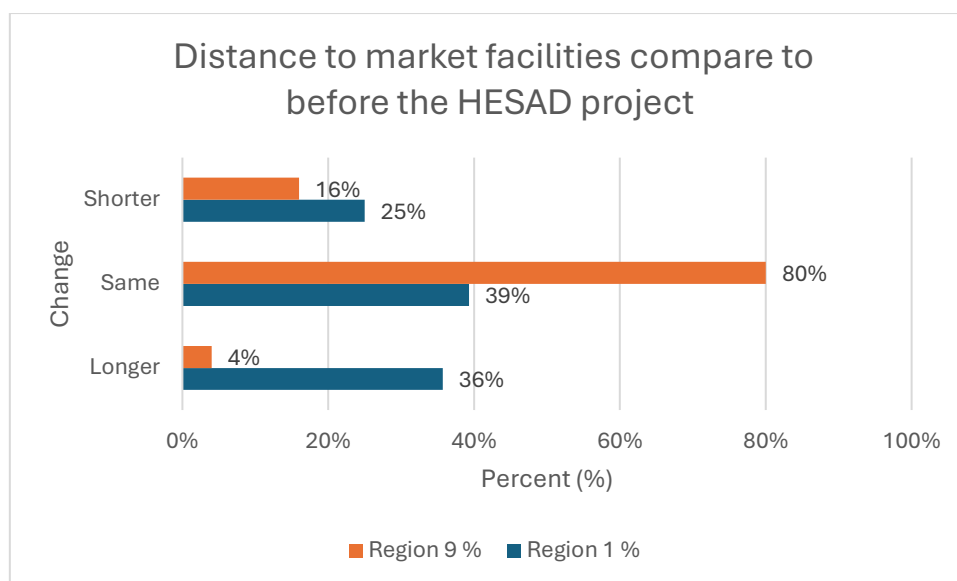


Figure 48: Distance to market facilities compare to before the HESAD project

14. Rural Business Enterprises

The endline survey collected descriptive information on 10 enterprises in Region 1 and 16 in Region 9. The following section presents a profile of the characteristics of these enterprises in terms of their time in operation, perceived growth trends, and employment generation.

14.1. Rural Business Enterprise Analysis for Region 1

14.1.1. Years in operation of Region 1 Rural business enterprises

The distribution of rural enterprises by years in operation reveals a mix of long-standing groups and recently established businesses. The *Blue Flame Women's Group* is the most experienced, established on 20th June, 2005, with 20 years in operation, demonstrating resilience and the ability of community-led groups to sustain themselves over time.

In contrast, a large share of enterprises are relatively young, having been established within the last four years – that is, from 2021 onwards, when the HESAD project started investing in Business Plans. Groups such as the *Rise and Shine Women's Group* and the *Yarakita Sunshine Ladies Group* have operated for about four years, reflecting the influence of recent development initiatives that spurred new business creation. Slightly

younger, at three years old, are enterprises like the *Cabora Farmer's Group – Mixed Farming Poultry and Peas* and the *Unity and Power Group – Grocery Shop*, which highlight diversification into both agriculture and small-scale retail.

Businesses such as the Arukamai Golden Cream Bakery and the White Water Conquers Sports Club, with two years of activity, represent newer ventures still finding their footing. The Barabina Sewing Project is the youngest, with just one year in operation, and remains in the early start-up phase. Overall, while the presence of one long-standing enterprise demonstrates the potential for sustainability, most groups are still in their formative years, highlighting both the progress of recent HESADP interventions and the need for continued support to ensure long-term survival and growth.

Years in Operation	Name of Business
20 years	Blue Flame Women's Group
4 years	Rise and Shine Women's Group, Yarakita Sunshine Ladies Group
3 years	Cabora Farmer's Group – Mixed farming poultry and peas, Unity and Power Group–Grocery Shop
2 years	Arukamai Golden Cream Bakery, White Water Conquers Sports Club
1 year	Barabina Sewing Project

14.1.3.4. Sales compared to the pre-implementation period

In Region 1, across the 10 covered enterprises, 5 groups reported growing stable sales since the beginning of project implementation, 4 reported stable sales, and 1 reported lower sales. Increases were all attributed to the HESAD project. Given the fact that almost all the enterprises in Region 1 were actually established after 2021 (when HESAD started to invest in BP), the “similar” category should be interpreted as reflecting the consolidation of a newly created or recently expanded business at a stable operating level, rather than stagnation. In this context, stability can be understood as the maintenance of a viable activity that did not previously exist or operated at a much more limited scale.

14.2. Rural Business Enterprise Analysis for Region 9

14.2.1. Years in operation of Region 9 Rural business enterprises

Years in Operation	Name of business
26 years	Kwatamang Village Council
25 years	Enskerang & Anike Group –Village Snackette
20 years	Aranaputa Women Agro Processor / Aranaputa Processor Friendly Association
17 years	Wowetta Women's Group / Wowetta Farine Factory
7 years	Massara Village Council– Livestock, Kasweng women group/ Farine Factory and casereep processing
6 years	Massara Women's Poultry
3 years	Karasabai Women's Sewing/Catering Group, Awarewaunau Sewing & Craft Group

Compared to Region 1, the rural enterprises in Region 9 display a wider variation in longevity, ranging from well-established groups that have operated for over two decades to relatively new initiatives that have emerged in the last three years.

At the upper end, *Kwatamang Village Council*, established on 27th December, 1999, with 26 years in operation and the *Enskerang & Anike Group – Village Snackette* (25 years) stand out as long-standing community institutions, reflecting stability and continuity in village-level governance and business. Similarly, the *Aranaputa Women Agro Processor / Aranaputa Processor Friendly Association* (20 years) and the *Wowetta Women's Group / Wowetta Farine Factory* (17 years) highlight sustained women-led enterprise engagement, particularly in agro-processing.

Enterprises with medium-term operation include the *Massara Village Council – Livestock* and the *Kasweng Women Group – Farine Factory and Casereep Processing* (7 years), alongside the *Massara Women's Poultry* (6 years), indicating steady growth in livestock, poultry, and processing activities over the past decade.

On the shorter side, more recently formed enterprises such as the *Karasabai Women's Sewing/Catering Group* and the *Awarewaunau Sewing & Craft Group* (3 years)

showcase the ongoing emergence of women-led initiatives, particularly in sewing, catering, and craft production.

16.2.4. Sales compared to the pre-implementation period in Region 9

In Region 9, sales performance compared to the pre-HESAD period showed a mix of growth and stability across districts. Central Rupununi recorded the strongest outcome, with 75% of respondents reporting greater sales and the remaining 25% maintaining similar levels, while North Rupununi followed closely, with 63.6% experiencing higher sales and 36.4% reporting stability. Deep South Rupununi presented a balanced distribution, where 25% of respondents reported increased sales, 25% experienced declines, and 50% maintained similar levels. South Central Rupununi showed complete stability, with 100% of respondents indicating no change in sales compared to pre-HESAD. Meanwhile, South Pakaraimas reflected a mixed situation, with 20% reporting greater sales, 20% experiencing declines, and the majority, 60%, maintaining similar levels. Overall, the findings highlight that while sales growth was evident in some districts—particularly Central and North Rupununi—others, such as South Central Rupununi and South Pakaraimas, demonstrated more stability or mixed results, pointing to uneven sales outcomes across Region 9.

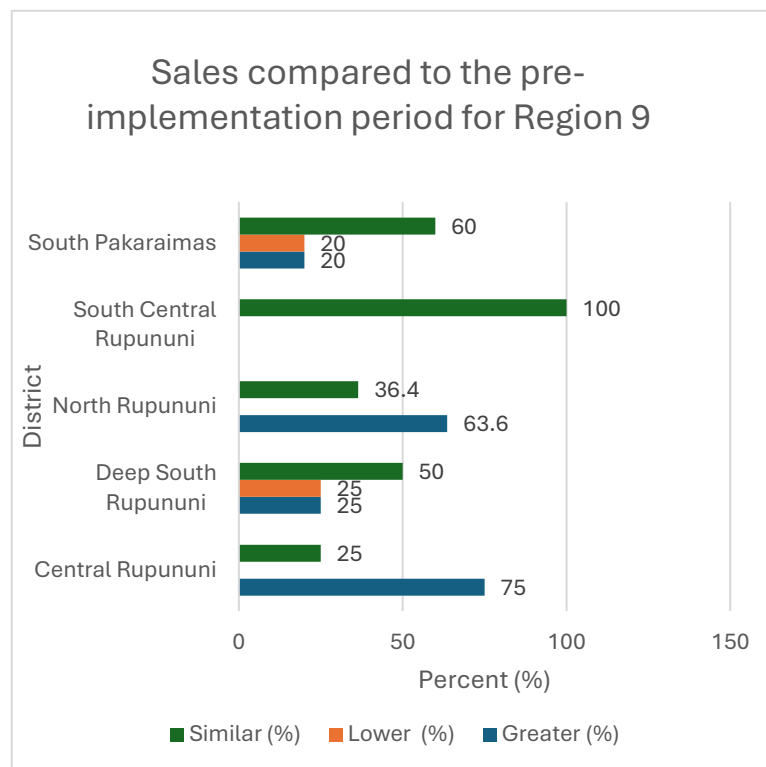


Figure 49: Sales compared to the pre-implementation period for Region 9

experienced declines, and 50% maintained similar levels. South Central Rupununi showed complete stability, with 100% of respondents indicating no change in sales compared to pre-HESAD. Meanwhile, South Pakaraimas reflected a mixed situation, with 20% reporting greater sales, 20% experiencing declines, and the majority, 60%, maintaining similar levels. Overall, the findings highlight that while sales growth was evident in some districts—particularly Central and North Rupununi—others, such as South Central Rupununi and South Pakaraimas, demonstrated more stability or mixed results, pointing to uneven sales outcomes across Region 9.

14.3. Overall sales analysis

Overall: Sales compared to the pre-implementation period – Region 1 and Region 9

Across Region 1 (Mabaruma and Moruca) and Region 9, almost half of respondents reported that their total sales were greater compared to the pre-HESAD period (50% in Region 1 and 48% in Region 9). **Notably, 100% of these increases were attributed to activities supported by the HESAD Project.**

Nearly the same proportions indicated that sales remained similar to before the project (48% in Region 1 and 44% in Region 9), suggesting stability rather than growth. A very small share of respondents reported lower sales (3% in Region 1 and 8% in Region 9), highlighting that declines were minimal.

Sales Performance Relative to Pre-implementation period

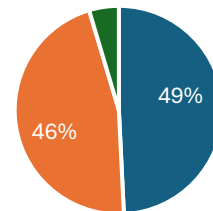


Figure 50: Sales performance relative to pre-implementation period

Overall, the data reflects a largely positive or stable sales trend across both regions, with most enterprises either maintaining or improving their sales performance under the HESAD Project. It is also noteworthy that among enterprises that were already in operation before the HESAD-supported business plan investments began, the proportion reporting higher sales compared to the pre-implementation period is considerably higher (around 65%). This suggests that enterprises with a longer operational history may have been better positioned to translate additional investments and support into increased commercial activity, while newer enterprises may still be in earlier stages of consolidation and may realize stronger performance gains as they mature.

14.4. Co-managers and Employment information for individuals outside of the group

Overall

This section focuses on the employment associated with the enterprises supported by the HESAD Business Plans. The overall results suggest that the supported enterprises play an important role as sources of local employment and livelihood opportunities. Importantly, the enterprises appear to generate significant employment opportunities beyond the direct beneficiary group (group members), with a total of 232 individuals and 88 co-managers reported as employed outside the group structure across the two regions during the 12 months preceding the endline survey. Second, these employment

opportunities are strongly characterized by female participation, with women representing roughly two thirds of both co-managers and workers employed outside the groups. Youth participation is also significant, particularly among young women, who constitute the majority of young workers involved in these activities. Finally, Indigenous people's participation is nearly universal among both co-managers and employees,

These findings, coupled with the strong employment effects previously observed for the PCIPs, confirm that employment generation has been a particularly strong outcome of the HEASAD's project investments in communities and business plans. This is particularly relevant for the hinterland context, where livelihood diversification opportunities remain limited and households continue to depend heavily on primary production as their main source of income.

More in detail, Table 47 outlines the number and characteristics of co-managers employed outside the group in Regions 1 and 9, disaggregated by gender, age category (14–35 years), and Indigenous identity. Overall, across both regions, 88 co-managers were employed outside the group. Females comprised 59 (67.0%) of the total, while males accounted for 33 (37.5%). Young co-managers represented 35.2% of the total (23 females and 13 males), while Indigenous individuals made up an overwhelming 96.6% of all co-managers employed outside the group.

Table 32: Co-managers employed outside of the group for both Region 1 and Region 9

District	Total Co-Managers	Male Co-Managers	Female Co-Managers	Young Co-Managers (14–35yrs)	Young Female Co-Managers (14–35yrs)	Young Male Co-Managers (14–35yrs)	Indigenous Co-Managers
Total Region 1	64	21	43	18	13	6	64
Total Region 9	24	12	16	13	10	7	21
Overall	88	33	59	31	23	13	85

In Region 1, a total of 64 co-managers were reported as employed outside the group. Females represented the majority (43, or 67.2%), compared to 21 males (32.8%). Eighteen

co-managers (28.1%) were classified as young (14–35 years), with females (13) outnumbering males (6). All co-managers in Region 1 (100%) identified as Indigenous.

In Region 9, 24 co-managers were employed outside the group, of which 16 (66.7%) were female and 12 (50.0%) were male. The proportion of young co-managers was higher than in Region 1, with 13 individuals (54.2%) aged between 14 and 35 years. Among these, 10 were young females and 7 were young males. Indigenous representation remained high, with 21 co-managers (87.5%) identifying as Indigenous. The analysis shows that female representation is strong among co-managers employed outside the group, particularly among younger age groups. Indigenous participation is almost universal in these roles. Region 9 has a proportionally higher share of young co-managers compared to Region 1.

Table 33: Individuals employed outside of the group for both Region 1 and Region 9

District	Individuals Employed Outside Group	Males	Females	Young People (14–35yrs)	Young Females (14–35yrs)	Young Males (14–35yrs)	Indigenous People
Total Region 1	152	45	107	68	52	13	151
Region 9 Total	80	27	53	29	26	3	80
Overall	232	72	160	97	78	16	231

Table 48 presents the distribution of individuals employed outside of the group in Regions 1 and 9, disaggregated by gender, age group (14–35 years), and Indigenous identity. Overall, across both regions, 232 individuals were employed outside of the group. Females comprised 160 (69.0%) of the total, while males represented 72 (31.0%). Young individuals accounted for 97 (41.8%) of the total, with young females (78) greatly outnumbering young males (16). Indigenous participation was almost universal, with 231 individuals (99.6%) identifying as Indigenous.

In Region 1, there were 152 individuals employed outside the group, with a significant majority being female (107, or 70.4%) compared to 45 males (29.6%). Sixty-eight individuals (44.7%) were classified as young (14–35 years), among whom females (52) substantially outnumbered males (13). Indigenous representation was nearly universal, with 151 individuals (99.3%) identifying as Indigenous.

In Region 9, 80 individuals were employed outside the group. Females accounted for 53 (66.3%) compared to 27 males (33.8%). The proportion of young workers was lower than in Region 1, with 29 individuals (36.3%) aged between 14 and 35 years. Young females (26) far exceeded young males (3). All individuals in Region 9 (100%) identified as Indigenous.

These findings highlight three key trends: Strong female dominance among individuals employed outside the group, especially in the younger age bracket. Near-total Indigenous representation in both regions. Region 1 has a higher proportion of young workers employed outside the group compared to Region 9.

Breakdown by regions

14.4.1. Region 1

14.4.1.1.Co-managers information

Table 34: Group co-managers outside of the group information by district in Region 1

District	Total Co-Managers	Male Co-Managers	Female Co-Managers	Young Co-Managers (14–35yrs)	Young Female Co-Managers (14–35yrs)	Young Male Co-Managers (14–35yrs)	Indigenous Co-Managers
Mabaruma	15	1	14	8	8	0	15
Moruca	49	20	29	10	5	6	49
Total	64	21	43	18	13	6	64

In the HESADP endline survey, co-manager outside of the group participation in rural business enterprises was assessed for both districts in Region 1—Mabaruma and Moruca.

The findings show that Moruca reported the highest engagement, with a total of 49 co-managers, comprising 20 males and 29 females. Of these, 10 were young people aged 14–35 years, including 5 young females and 6 young males. All co-managers in Moruca identified as Indigenous, highlighting the strong representation of Amerindian communities in rural enterprise leadership.

In Mabaruma, there were 15 co-managers, with 1 male and 14 females. Eight were young females, and no young males were reported in this category. As in Moruca, all co-managers in Mabaruma were Indigenous, underscoring the continued central role of Indigenous populations in local economic activities.

Overall, the two districts reported a combined total of 64 co-managers, of whom 21 were males and 43 were females. Eighteen (28%) were young people, with young females (13) significantly outnumbering young males (6). These results suggest that HESADP-supported enterprises in Region 1 not only maintained strong Indigenous leadership but also promoted substantial female participation, particularly among younger age groups, thereby contributing to gender inclusivity and youth involvement in rural economic management.

14.4.1.2. Employees information

Table 35: Group employees information by district in Region 1

District	Individuals Employed Outside Group	Males	Females	Young People (14–35yrs)	Young Females (14–35yrs)	Young Males (14–35yrs)	Indigenous People
Mabaruma	126	34	92	60	48	9	125
Moruca	26	11	15	8	4	4	26
Total Region 1	152	45	107	68	52	13	151

Overall, 152 individuals from outside the surveyed groups were employed in rural enterprises over the past 12 months, with the majority (126) in Mabaruma and the remaining 26 in Moruca. Mabaruma also accounted for most of the male (34) and female (92) employees, while Moruca reported 11 males and 15 females.

Youth participation was notable, with 68 young people (14–35 years) employed region-wide, of which 60 were from Mabaruma and 8 from Moruca. Among these youth, young females (52) significantly outnumbered young males (13), indicating higher female youth engagement in rural enterprises.

Indigenous people represented a substantial portion of the workforce, totaling 151 individuals (125 in Mabaruma and 26 in Moruca). This aligns with the predominantly Indigenous demographic profile of Region 1 recorded in other sections of the survey.

These findings highlight that HESADP-supported enterprises have provided notable employment opportunities, particularly for women, youth, and Indigenous people, with Mabaruma emerging as the main hub of rural enterprise employment activity in the region.

14.4.2. Region 9

16.4.2.1.Co-managers information

Table 36: Group co-managers outside of the group information by district in Region 9

District	Total Co- Managers	Male Co- Managers	Female Co- Managers	Young Co- Managers (14– 35yrs)	Young Female Co- Managers (14– 35yrs)	Young Male Co- Managers (14– 35yrs)	Indigenous Co- Managers
Central Rupununi	0	0	0	0	0	0	0
Deep South Rupununi	5	0	5	0	5	0	5
North Rupununi	9	5	8	3	3	0	6
South Central Rupununi	5	3	2	5	2	3	5
South Pakaraimas	5	4	1	5	0	4	5
Total	24	12	16	13	10	7	21

Overall, there are 24 co-managers reported across all surveyed districts. Of these, 12 (50.0%) are male and 16 (66.7%) are female, showing that some enterprises have more than one co-manager and that female representation is slightly higher. Youth participation is also notable, with 13 co-managers (54.2%) aged 14–35 years, including 10 young females and 7 young males. This reflects the project’s contribution to encouraging younger members of the community to take on management roles.

A key finding is the strong indigenous presence in enterprise leadership—21 out of 24 co-managers (87.5%) are indigenous. This aligns with the HESADP’s goal of empowering indigenous communities through capacity building, business support, and leadership opportunities. By promoting inclusivity and participation among women, youth, and indigenous members, the project supported sustainable community-led enterprise management.

These results suggest that the HESADP interventions not only facilitated enterprise development but also helped foster diverse and representative leadership structures, which are crucial for the resilience and long-term success of rural businesses in Region 9.

14.2.2. Employees information for Region 9

Table 37: Employees information by district in Region 9

District	Individuals employed	Males	Females	Young People (14–35yrs)	Young Females (14–35yrs)	Young Males (14–35yrs)	Individuals Employed Outside Group	Indigenous People
Central Rupununi	4	2	2	0	0	0	4	4
Deep South Rupununi	8	0	8	3	6	0	8	8
North Rupununi	32	19	13	8	5	3	32	32
South Central Rupununi	4	2	2	2	2	0	4	4
South Pakaraimas	32	4	28	13	13	0	1	32
Region 9 Total	80	27	53	26	26	3	49	80

Overall, 80 individuals from outside the surveyed groups were hired to work for groups in Region 9 over the past 12 months. North Rupununi and South Pakaraimas accounted for the largest shares, each employing 32 individuals, followed by Deep South Rupununi (8), Central Rupununi (4), and South Central Rupununi (4).

North Rupununi recorded the highest number of male employees (19), while South Pakaraimas reported the largest number of female employees (28). Region-wide, females (53) outnumbered males (27), reflecting strong female participation in non-member employment.

Youth engagement was also evident, with 26 young people (14–35 years) employed across the region—13 from South Pakaraimas, 8 from North Rupununi, 3 from Deep South Rupununi, and 2 from South Central Rupununi. Among these, young females (23) substantially outnumbered young males (3), demonstrating higher female youth involvement in group-based enterprises.

Indigenous people represented the entire workforce (100%, or 80 individuals) across all districts, aligning with the predominantly Indigenous demographic profile of Region 9 reported in other sections of the survey.

These findings highlight that HESADP-supported groups in Region 9 have created meaningful employment opportunities for non-members, particularly for women, young people, and Indigenous communities.

15. Resilience analysis

This section presents the results related to the analysis of resilience. These analyses form the basis for assessing the results achieved by the HESAD project in relation to the Logframe indicator: “*Targeted households have increased their resilience*”, related to the project Development Objective “*Improved livelihood resilience through income generation, access to assets, improved nutrition, and adaptation to climate variability*”.

Beyond providing an estimate of the Logframe indicators, the analyses presented in this section intend to provide learning and lessons on the main challenges faced by households in project areas, and to what extent the HESAD interventions have contributed to improving their resilience profiles.

15.1. Methodology and indicators

Household resilience was measured at different points in time using the resilience framework developed by IFAD/PMI, which assesses the capacity of rural households to anticipate, absorb, adapt to, and learn from shocks and stresses. These capacities are measured through multidimensional indices constructed from survey-based scorecards.

At the time the HESAD project was designed, an earlier version of the methodology was available. This approach was based on a simplified resilience scorecard composed of eight binary (yes/no) questions covering key aspects of household resilience. In this report, this earlier version of the indicator is referred to as the *Simplified Resilience Index (SRI)*.

In subsequent years, IFAD further refined and systematized its resilience measurement methodology through the development of the Resilience Design and Monitoring Tool (RDMT). The RDMT approach provides a more comprehensive analytical framework for assessing resilience and for integrating resilience considerations into project design and monitoring. The methodology is described in detail in the IFAD “How to Do Note: Designing for and Monitoring Resilience for Vulnerable Rural Households”.⁶ In the RDMT approach, resilience is assessed through a structured analytical framework that combines risk analysis with monitoring of household responses and outcomes. The methodology involves the development of an RDMT matrix that identifies key climate and livelihood risks affecting project beneficiaries, as well as the vulnerabilities, project interventions and expected results relevant to those risks. The matrix is organized across four broad clusters of risks affecting rural livelihoods, although (as in the case of

⁶ The RDMT How to do note is available at the following link:
<https://www.ifad.org/en/w/publications/resilience-design-and-monitoring-tool>

HESAD) a subset of the risk cluster most relevant for the project's resilience interventions and theory of change can be selected.⁷ Based on the RDMT matrix, a questionnaire is developed to capture two complementary monitoring dimensions through: (i) "adoption" questions, which measure the extent to which households have adopted the practices, technologies or strategies promoted by the project to address the identified risks and vulnerabilities; and (ii) "results" questions, which assess the perceived changes in households' capacity to manage or respond to risks, and maintain or improve their livelihoods. The responses are aggregated through standardized scores that generate resilience indices for adoption, results, and overall resilience capacities. The indexes can be further decomposed across the risks clusters and their specific sub-dimensions defined in the RDMT matrix.

As the IFAD resilience methodology evolved, the instruments used in the HESAD survey questionnaires also changed, to capitalize on the methodological improvements in the resilience measurement framework. In fact, while the SRI provides a rapid approximation of household resilience through a set of binary questions, it offers less analytical depth compared to the RDMT approach. The RDMT expands the analysis by linking resilience measurement to the specific risk clusters faced by beneficiaries and by capturing both the adoption of resilience-enhancing practices and the results achieved in terms of livelihood outcomes. In practical terms, the RDMT distinction between the two complementary dimensions of adoption and results allows the analysis to move beyond the measurement of overall changes in resilience levels to examine more closely how different resilience-enhancing practices are adopted, and how these practices translate into tangible outcomes. As a result, the RDMT provides a more nuanced understanding of the pathways through which project interventions contribute to strengthening resilience and offers a stronger basis for operational learning. Through the RDMT, it is possible to identify which types of interventions are most widely adopted, where adoption remains limited, and in which areas adoption appears to translate more clearly into improved resilience outcomes. This information can be used to refine intervention strategies, strengthen support for practices that show stronger results, and identify areas where additional support may be needed to enhance the effectiveness and sustainability of resilience-building interventions.

The comparison of resilience indices across different survey rounds (baseline, mid-term / outcome, and endline), as well as between regions, depends on the availability of harmonized and comparable data across the datasets. In the case of HESAD, since the baseline surveys for Region 1 and Region 9 were conducted by different service providers, the survey instruments used were not fully harmonized. In the case of Region 9, the questions corresponding to the Simplified Resilience Index were not included in their standard format in the baseline questionnaire. Although an ad-hoc version of the SRI index was reconstructed using other questionnaire items (as described in the

⁷ The four risk clusters pertain to: (1) climate and degraded ecosystems; (2) lack of governance and insecure access and tenure to land and other natural resources; (3) social and cultural exclusion drivers; and (4) insecure access to markets, market fluctuations, and other economic factors.

Region 9 baseline report), this reconstructed version cannot be considered fully comparable with the standardized version of the SRI index used in the Region 1 endline.

For the outcome (mid-term) and endline surveys, a harmonized version of the RDMT questionnaire was used in both regions, allowing for consistent comparisons between mid-term and endline results. In addition, to facilitate retrospective analysis of resilience trends, the Simplified Resilience Index was also calculated for the outcome and endline surveys by mapping relevant RDMT questions to the original SRI indicators.

Table 1 summarizes the availability of data for the two versions of the resilience indices (SRI and RDMT) used in the comparative analyses presented in this section. The survey instruments developed for both the SRI and RDMT indices for HESAD (implemented through the baseline, outcome / mid-term, and endline surveys according to the scheme summarized in Table 1) are presented in Appendix 4. When included in the questionnaires, these modules were administered to the full set of survey respondents. Therefore, the sample used for the endline RDMT analysis corresponds to the overall endline survey sample described earlier in this report.

Table 38: Resilience measurement approaches (SRI and RDMT) across HESAD survey rounds

Survey	SRI	RDMT
Baseline Region 1	Yes	Not included (methodology not yet available)
Baseline Region 9	Not included (an ad-hoc index was derived from other questionnaire items)	Not included (methodology not yet available)
Mid-term Region 1	Calculated from a subset of RDMT questions	Yes
Mid-term Region 9	Calculated from a subset of RDMT questions	Yes
Endline Region 1	Calculated from a subset of RDMT questions	Yes
Endline Region 9	Calculated from a subset of RDMT questions	Yes

Calculation of the indices

For the SRI, a simple scoring system was adopted. For the first seven questions, each positive answer received 1 point; for the last question, a 0/1 score was instead assigned according to the value of the MDDW (see Appendix 4, Table A4.1). A simple sum was then performed across the eight questions to obtain the aggregate SRI score for each observation. The sums were then normalized to the 0–100 interval. For subsequent survey waves, the SRI was calculated in a similar fashion based on the mapping of RDMT questions, as detailed in Table A4.4 in Appendix 4.

For the RDMT, given the more complex and hierarchical nature of the index, normalization and weighting procedures were applied to calculate the different aggregate indexes from the scores assigned to the individual questions. Table 2 presents the hierarchical structure of the RDMT matrix and corresponding indexes used for HESAD. This includes two main risk clusters considered relevant for the project (RC1 and RC2), and the seven associated intervention groups (INT1, INT2 etc.) under each risk cluster (three intervention groups for RC1, and four intervention groups for RC2). The set of *adoption* and *results* questions formulated for each Intervention group is presented in Table A4.2 (Appendix 4).

Table 39: Risks clusters (RC) and Interventions (INT) levels for the RDMT

Risk cluster / intervention label	Description
RC1	Climate risk planning and management
RC2	Climate hazards
RC1 – INT1	Collective climate planning
RC1 – INT2	Producer groups and diversification
RC1 – INT3	Nutrition and diets
RC2 – INT1	Climate-Smart Agriculture and Practices for livestock and crops
RC2 – INT2	Post-harvest practices
RC2 – INT3	Water and flood infrastructure
RC2 – INT4	Renewable energy and internet connectivity

Depending on the nature of the intervention group, a different number of adoption and results questions was used (ranging from one adoption and one result question, as in the case of RC1-INT2; to four adoption and three results questions, as in the case of RC2-INT4). Given that the number of questions associated with each Intervention group (and consequently with each Risk Cluster) was uneven, a key principle used for the RDMT index calculation was to ensure that no intervention group received greater weight simply because it was measured through more questionnaire items. Without an explicit normalisation rule, interventions associated with more RDMT adoption and/or results questions would in fact mechanically contribute more to the overall indexes than interventions measured through fewer (yet conceptually equally important) questions.

To avoid this distortion, each intervention was assigned a maximum score of four points both for the adoption and the results dimensions, regardless of the number of RDMT questions mapped to that intervention group. This ensured that all interventions had the same maximum contribution to the risk-cluster indices, thereby preserving symmetry and comparability across interventions. In practical terms, the four-point maximum is distributed evenly across the questions associated with each intervention. For example, if an intervention is measured by two questions, each question contributes up to two points. If it is measured by four questions, each question contributes up to one point. More generally, the scoring scale of each question is rescaled so that the sum of the

maximum attainable points across all questions belonging to a given intervention equals four.

This symmetric allocation rule is applied consistently to both the adoption and results dimensions. Therefore, interventions measured through a small number of high-level questions (for example, participation in community planning processes) and interventions measured through a larger set of more detailed practices (such as adoption of multiple climate-resilient agricultural practices) are placed on the same metric scale and can be compared directly.

Intervention-level adoption and results scores were first calculated as raw scores by summing the rescaled values of the RDMT questions mapped to each intervention, following the symmetric weighting rule described above. By construction, these raw intervention scores range between zero and four. Risk-cluster indices were then obtained by aggregating the intervention-level scores within each cluster. In the present analysis, two main risk clusters were considered: Risk Cluster 1 (RC1), which relates to low climate-risk awareness and limited planning and action capacities for mitigating and spreading risks (hereafter referred to as RC1 – Climate risk planning and management), and Risk Cluster 2 (RC2), which relates to increasing exposure to climate hazards such as floods, rising temperatures and dry spells (hereafter referred to as RC2 – Climate hazards). Since the number of interventions differs across clusters (three in RC1 and four in RC2), the resulting raw cluster scores have different theoretical maxima.

To ensure comparability across clusters and between the adoption and results dimensions, all indices were normalised by dividing the raw score by its theoretical maximum. This min-max normalisation transforms each index onto a scale between zero and one, where zero corresponds to no adoption or no realised outcomes; and one corresponds to full adoption or full achievement of results across all interventions within the cluster. This final normalisation step ensures that differences in the indices reflect substantive variation in household behaviour and outcomes rather than mechanical differences in the number of interventions or questions.

Based on the scoring system described above, three aggregate indices were constructed. The first is the **RDMT adoption index**, which captures the overall level of adoption of resilience-enhancing practices promoted through project interventions. The second is the **RDMT results index**, which captures the extent to which households report improved outcomes associated with these practices. The third is the **Overall RDMT index**, which combines the adoption and results dimensions to provide a synthetic measure of household resilience outcomes.

In addition to these aggregate indices, sub-indices were calculated for each of the two risk clusters (RC1 and RC2), allowing for a more detailed analysis of resilience outcomes across different risk domains. Finally, a set of intervention-level indices was calculated for each of the specific interventions included in the RDMT matrix (RC1-INT1, RC1-INT2 etc.), to permit more detailed analysis on dimensions and lines of action of greater relevance for the HESAD project.

Climate hazards: incidence, severity and recovery. To complement the SRI and RDMT indices, an additional set of questions was included in the survey to assess households' exposure to climate-related shocks and stressors. Respondents were asked whether they had experienced specific adverse climate events during the previous two years, how severe the impacts of these events had been, what actions they had taken in response, and to what extent they had been able to recover from their effects.

The events considered included prolonged dry seasons, heat waves and high temperatures, floods, wildfires, severe winds, saltwater intrusion, and any other climate-related events not included in the predefined list. The information collected through these questions was analysed for descriptive purposes to provide additional context on the climatic shocks and stressors affecting households in the project areas. However, these variables were not used in the calculation of either the SRI or the RDMT indices.

Structure of the section. This resilience-focused section of the endline report is conceived has the dual objective of (i) providing a robust basis for assessing overall project performance against the resilience Development Objective indicator; and (ii) generating learning on how project-supported interventions contributed to household resilience.

The analysis moves progressively from the broader context of risks affecting households, to the mechanisms through which project interventions contributed to resilience outcomes. The analysis therefore begins with an assessment of households' exposure to climate-related hazards, including the incidence, severity, and recovery from major shocks reported during the period covered by the survey. This analysis provides an overview of the risk environment in which project-supported households operate and helps contextualize the resilience outcomes observed in the survey data.

The report then examines overall trends in resilience outcomes using the Simplified Resilience Index (SRI) and the RDMT indices, comparing results across baseline, mid-term, and endline surveys where comparable data are available. This step provides a synthetic overview of how household resilience evolved during project implementation and offers the basis for estimating the Logframe indicator.

Building on this aggregate perspective, the analysis subsequently examines the RDMT results at the level of the two main risk clusters (RC), allowing for a more detailed understanding of how resilience adoption and outcome levels differ across major risk domains. Finally, the report includes selected deep-dives at the level of specific interventions to explore more closely the pathways through which the adoption of project-supported practices translated into improved resilience outcomes, as well as areas where adoption or results remained more limited. Throughout the analysis, results are disaggregated by region, gender of household head, and type of plans where relevant, in order to support intra-group comparisons and derive operational insights for future programming.

15.2. Exposure to climate hazards

Understanding the performance of resilience-building interventions requires first situating households within the risk environment in which they operate. Households in the HESAD project areas are exposed to a range of climate-related shocks and stressors that directly affect agricultural production, infrastructure, and household livelihoods. These hazards include floods, prolonged dry periods, unusually high temperatures, and other extreme events whose frequency and severity vary across the hinterland regions covered by the project.

This section thus provides a descriptive overview of households' exposure to climate hazards during the reference period covered by the endline survey (the previous 24 months). The analysis documents the main types of climate events experienced by households, their incidence and severity, and the differences observed between Region 1 and Region 9. The objective of this section is primarily contextual: it characterizes the risk environment in which households make production decisions and implement project-supported practices. The findings provide the necessary background for interpreting the resilience outcomes presented in the subsequent sections of the analysis.

Incidence of different types of climate hazards

Table X presents the proportion of households that reported having faced different types of climate hazards during the two years (24 months) preceding the endline survey interview. Overall, the results confirm that climate-related shocks are widespread in the project areas. The most frequently reported hazard was prolonged dry seasons or dry spells, affecting approximately 62 percent of households across the sample. Floods were the second most common event, reported by 55 percent of households. Other hazards such as heat waves and high temperatures were also relatively common, affecting about 20 percent of households. In contrast, events such as wildfires, saltwater intrusion and severe winds were reported less frequently, although their impacts may still be significant where they occur.

A clear difference emerges between the two regions in the composition of climate risks. Floods are by far the dominant hazard in Region 9, affecting nearly 70 percent of households, compared to about one-third of households in Region 1. Conversely, prolonged dry periods are slightly more common in Region 1 than in Region 9. Wildfires also appear to be considerably more frequent in Region 9. Saltwater intrusion, although relatively rare overall, is reported almost exclusively in Region 1, reflecting the coastal characteristics of some communities in that region.

These results highlight that the two regions face distinct climate risk profiles. Region 9 appears to be characterized by a more flood-dominated risk environment, whereas Region 1 experiences a more mixed pattern combining dry spells, floods and localized hazards such as saltwater intrusion. These differences are important when interpreting the resilience strategies adopted by households and the relevance of specific project-supported interventions.

Table 40: Incidence of different types of hazards (previous 24 months)

Hazard	Region 1 (% households)	Region 9 (% households)	Total (% households)	N
Long dry season / dry spells	65.4	59.0	61.6	528
Heat waves / high temperatures	15.2	23.3	20.1	528
Floods	32.7	69.4	54.7	528
Wildfires	3.8	24.9	16.5	528
Severe winds	1.4	2.2	1.9	528
Saltwater intrusion	4.7	0.3	2.1	528
Other hazards	3.3	1.6	2.3	528

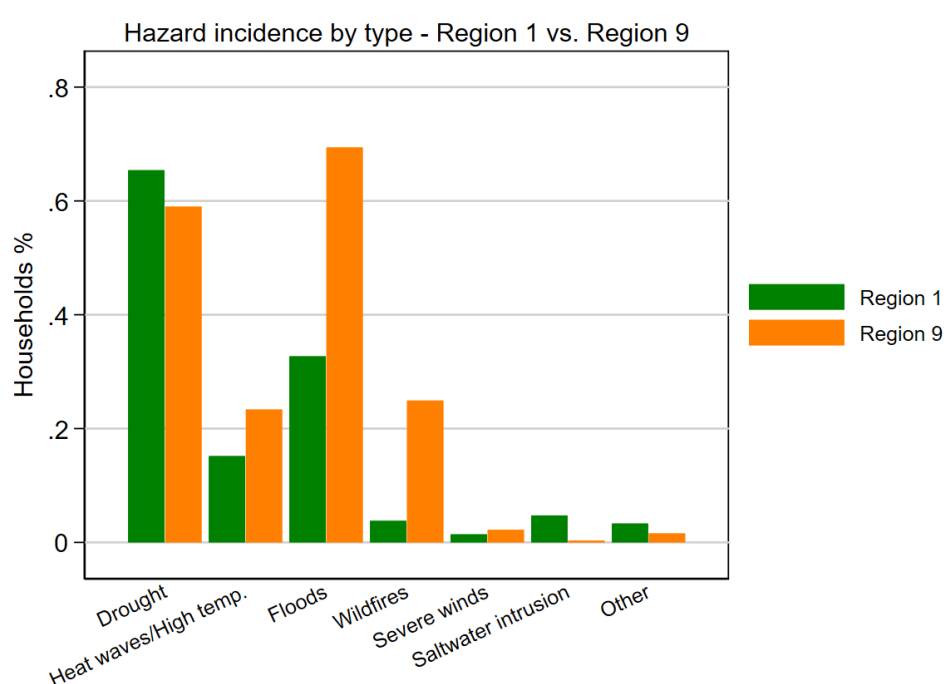


Figure 51: Hazard incidence by type and region

Beyond the incidence of individual hazards, it is important to consider the extent to which households experience multiple shocks simultaneously or in close succession. Exposure to multiple hazards can significantly increase vulnerability by compounding losses and reducing households' capacity to recover. The results (Figure 5) suggest that a substantial share of households had experienced more than one type of climate hazard during the previous 24 months. Multi-hazard exposure appears to be

particularly relevant in Region 9, where about 50% of the households experienced 2 or more hazards and where the higher incidence of floods combined with the occurrence of dry spells and heat waves increases the likelihood of overlapping risks. The prevalence of multi-hazard exposure reinforces the importance of articulated strategies that combine multiple risk management approaches, including climate-resilient agricultural practices, diversification of production systems, and improved infrastructure for water and flood management; these areas that were central components of the HESAD resilience-building interventions.

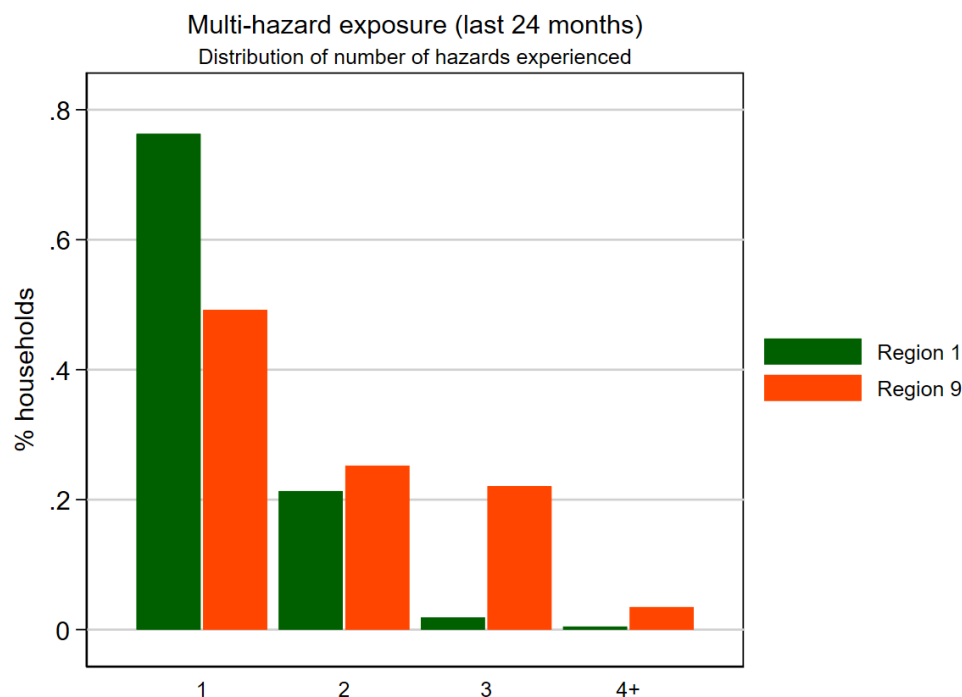


Figure 52: Exposure to multiple climate hazards

Severity of climate shocks. In addition to identifying which hazards occurred, the survey asked households to assess the severity of their impacts. Across all hazards, the majority of reported events were classified as moderate or high severity. Floods, heat waves, and prolonged dry spells all show high shares of severe impacts. For example, nearly half of households reporting dry spells and more than half of those reporting floods classified the impacts as high. Wildfires, although less frequent overall, appear to have particularly severe consequences where they occur, with more than 60 percent of affected households reporting high impacts. The severity distribution also reveals regional differences. In Region 1, floods and dry spells tend to be reported as more severe when they occur, whereas in Region 9 the severity distribution is somewhat more balanced between moderate and high categories. This may partly reflect differences in exposure patterns, infrastructure conditions, and coping strategies between the two regions. Gender-disaggregated results show broadly similar patterns between female-

headed households and the rest of the sample, although female-headed households report slightly higher shares of high-severity impacts for some hazards such as heat waves and dry spells. While sample sizes for some hazards remain limited, this finding is consistent with broader evidence that female-headed households may face additional constraints in responding to climate shocks.

Table 41: Reported severity of impact for different types of hazard (whole sample)

	Overall			
	Low	Moderate	High	N
Long dry season/Dry spells	.117	.394	.489	325
Heat waves/High temp.	.038	.425	.538	106
Floods	.055	.422	.522	289
Wildfires	.08	.31	.609	87
Severe winds	.2	.3	.5	10
Saltwater intrusion	0	.091	.909	11
Other (unspecified)	.167	.25	.583	12

Table 42: : Reported severity of impact for different types of hazard (Region 1)

	Region 1			
	Low	Moderate	High	N
Long dry season/Dry spells	.109	.283	.609	138
Heat waves/High temp.	.031	.438	.531	32
Floods	.072	.261	.667	69
Wildfires	0	.25	.75	8
Severe winds	.333	0	.667	3
Saltwater intrusion	0	.1	.9	10
Other (unspecified)	.143	.143	.714	7

Table 43: Reported severity of impact for different types of hazard (Region 9)

	Region 9			
	Low	Moderate	High	N
Long dry season/Dry spells	.123	.476	.401	187
Heat waves/High temp.	.041	.419	.541	74
Floods	.05	.473	.477	220
Wildfires	.089	.316	.595	79
Severe winds	.143	.429	.429	7
Saltwater intrusion	0	0	1	1
Other (unspecified)	.2	.4	.4	5

Severity-weighted exposure index. To more comprehensively capture and compare households' overall exposure to climate hazards, a Severity Exposure Index (SEI) was constructed. This index combines the severity of hazards experienced by each household with the local probability of occurrence of those hazards, thus reflecting both the intensity of shocks and the broader risk environment.⁸ The resulting indicator ranges from zero to one, with higher values indicating greater cumulative exposure to severe climate shocks. The average normalized SEI across the sample is 0.123, indicating a moderate level of overall exposure to climate hazards.

⁸ The Severity Exposure Index (SEI) is a continuous indicator that captures households' overall exposure to climate-related hazards by jointly accounting for event severity and local probability of occurrence. For each household i and hazard type h , severity is coded on an ordinal scale (Low = 1, Moderate = 2, High = 3), with a value of zero assigned when the event is not reported. Let s_{ih} denote the severity score for hazard h experienced by household i . To incorporate the local risk environment, each severity score is weighted by the empirical probability of the event at the village level, denoted by p_{vh} , computed as the relative frequency of households reporting hazard h within village v . Formally, the severity-weighted exposure score for household i is defined as:

$$SEI_i = \sum_h (p_{vh} \times s_{ih})$$

where the summation is taken over all hazard types h . To facilitate interpretation and comparability, the index is normalized by its theoretical maximum (i.e. the highest severity level multiplied by the number of hazards), yielding a value bounded between 0 and 1:

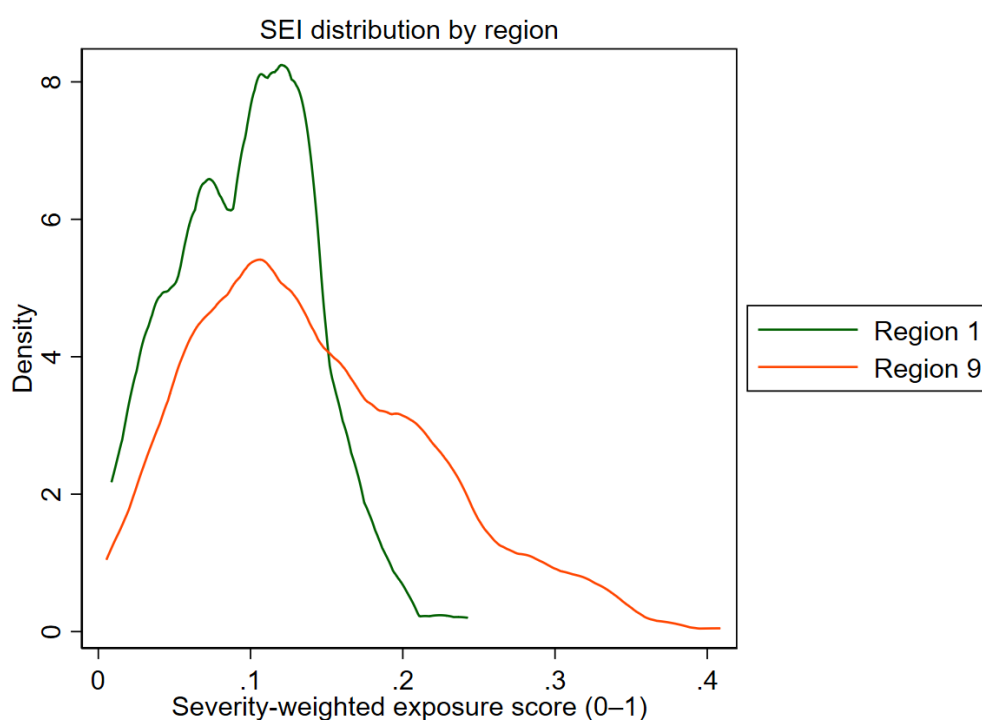
$$SEI_i^{norm} = SEI_i / (3 \times H)$$

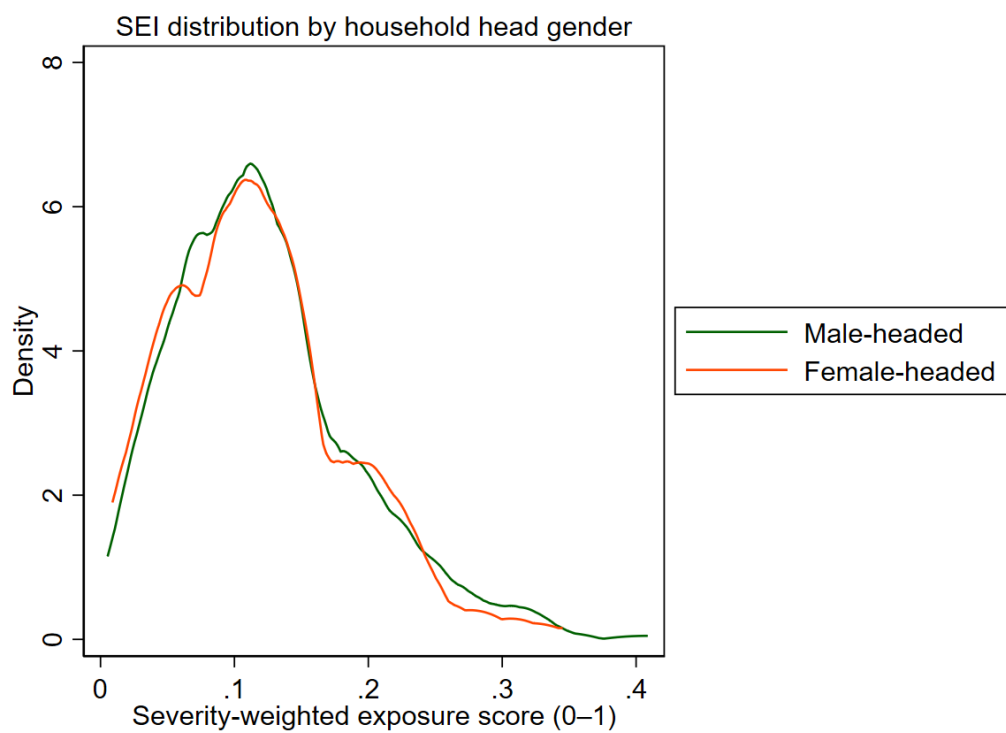
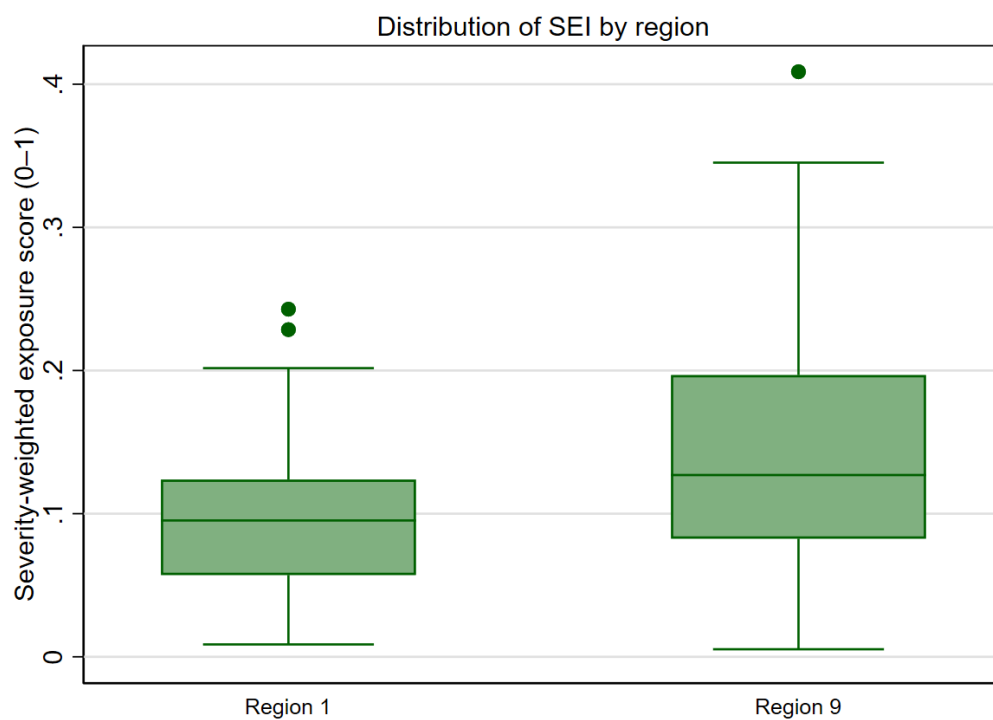
where H denotes the total number of hazard types considered. Higher values of the SEI indicate greater cumulative exposure to severe climate shocks, reflecting both individual experience and the underlying local risk context.

However, substantial differences emerge between regions. Households in Region 9 exhibit significantly higher exposure levels than those in Region 1. The mean SEI in Region 9 is 0.14, compared to 0.096 in Region 1. Moreover, more than one-third of households in Region 9 fall within the highest exposure quartile, compared to less than 10 percent in Region 1. This confirms that households in Region 9 operate within a considerably more intense climate risk environment. Gender differences in the severity exposure index are relatively limited, suggesting that exposure to climate hazards is broadly similar across male- and female-headed households within the surveyed communities.

Table 44: Severity Exposure Index values

Group	Mean	Median	Std Dev	N
Overall	0.123	0.119	0.070	528
Region 1	0.096	0.095	0.046	211
Region 9	0.140	0.127	0.078	317





Comparison of severity of impacts at midline and endline. Data on exposure to climate hazards and the severity of their impacts was also collected for the midline survey. This offers an opportunity to perform a descriptive comparison on how incidence has evolved over time. The comparison between the midline and endline surveys suggests a noticeable shift in the distribution of reported impacts for several climate hazards (Figure 6). In particular, for long dry seasons and floods, the share of households reporting high severity impacts appears to decline at endline, while the proportion reporting moderate impacts increases. This pattern indicates that although these hazards continue to affect a large number of households, their perceived intensity has decreased over time.

A different pattern is observed for severe winds, where the share of households reporting high severity impacts increases at endline relative to midline. However, this result should be interpreted with caution given the very small number of observations for this hazard. In contrast, hazards such as heat waves and wildfires show relatively similar severity distributions between the two survey rounds, suggesting that the intensity of their impacts has remained broadly stable over time.

Overall, the comparison indicates that while exposure to climate hazards remains significant in the project areas, there may be early signs that households are improving their capacity to manage the impacts of some of the most common shocks, particularly dry spells and floods. Although the absence of a control group does not permit to draw definitive conclusions on the extent to which this depends on project interventions, this interpretation would be consistent with the improvements observed in several RDMT indicators related to the adoption of climate-resilient practices and risk management strategies.

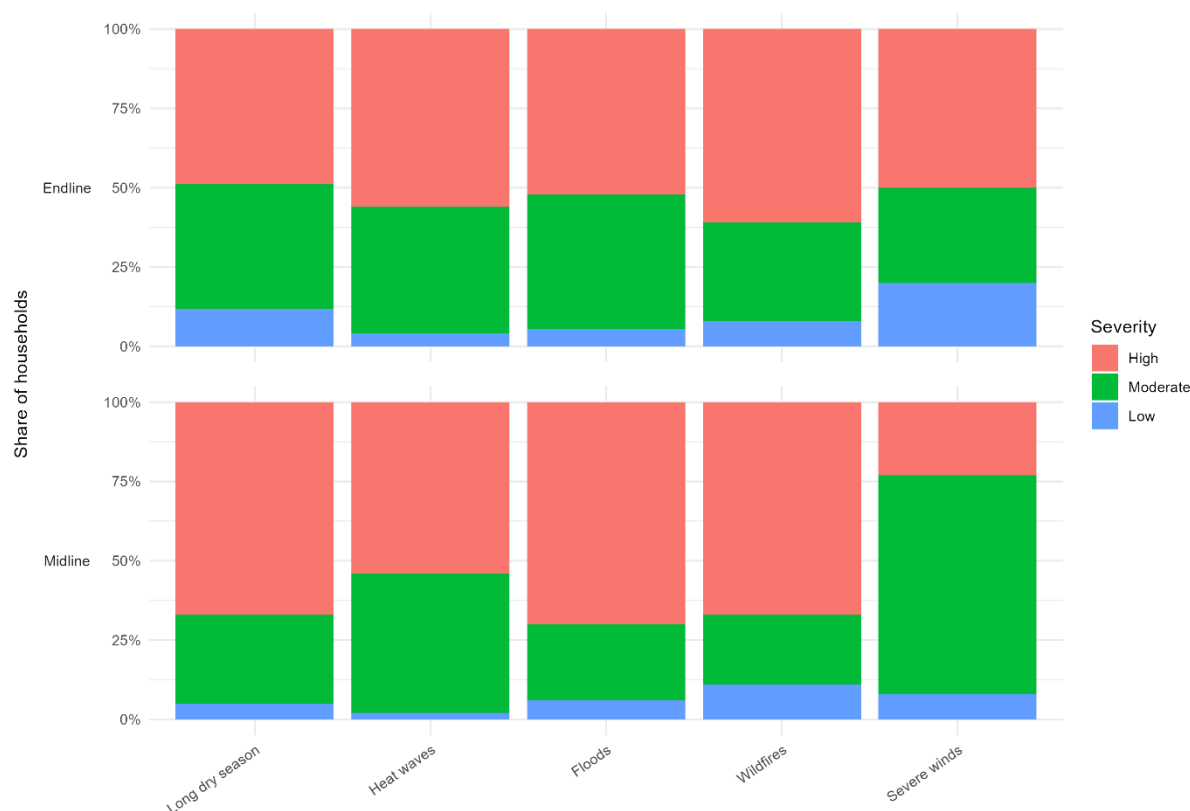


Figure 53: Severity of impact at midline and endline

Furthermore, a comparison between the midline and endline surveys shows a substantial increase in the share of households reporting no climate-related losses in crop or livestock production. For crops, only 14% of households reported experiencing no losses at midline, whereas this share increased to 35.6% at endline (32.6% in Region 1 and 37.6% in Region 9). A similar pattern is observed for livestock production: the proportion of households reporting no losses rose from 39.8% at midline to 54% at endline (51.4% in Region 1 and 56.5% in Region 9). Despite these improvements, climate-related losses exceeding 50% of production were still reported by 10% of households in the case of livestock and by 30.8% of households in the case of crops.

15.3 Assessment of progress against the resilience Development Objective

15.3.a Results according to the SRI

As discussed above, results from the Simple Resilience Index (SRI) provide a concise, outcome-oriented complement to the more articulated RDMT analysis. While the RDMT captures resilience pathways in a multidimensional and process-based manner, the SRI summarizes a limited set of key household outcomes related to participation, diversification, access to resources, information use, and basic welfare conditions. As

such, the SRI aligns more closely with the *results* dimension of the RDMT and, while based on a smaller sub-set of indicators, offers a useful high-level validation of the broader findings. Moreover, as discussed above, the SRI has been used also at baseline for Region 1 and thus provides a longer-term comparison of changes in resilience capacities.

Across both regions, SRI values at endline indicate a clear improvement in resilience outcomes over time. In Region 1, the normalized SRI increases from 0.34 at baseline to 0.45 at endline, while in Region 9 the endline normalized SRI reaches 0.48, following a midline value of 0.30. These gains confirm that resilience outcomes are emerging, even if not yet fully consolidated; this is consistent with the transitional household resilience phase highlighted by the RDMT.

Region 9 displays higher average SRI scores than Region 1 at endline (0.48 vs. 0.45), which is coherent with the generally higher levels of adoption observed in the RDMT (presented below). At the same time, the magnitude of the difference remains moderate, indicating that improvements in outcome-level resilience are present in both regions, albeit at slightly different stages.

Gender-based differences in SRI are limited. In Region 1, male-headed households show only marginally higher normalized SRI values than female-headed households (0.46 vs. 0.44), while in Region 9 female-headed households slightly outperform male-headed households (0.50 vs. 0.46). These small gaps mirror the RDMT findings and suggest that resilience outcomes are broadly comparable across household typologies, with no systematic gender disadvantage emerging from the SRI.

Table 45: SRI values over time (SRI normalized)

Region 1						
	Mean	Median	Std. Dev.	min	max	N
Baseline	.337	.286	0.205	0	1	424
Midline	.269	.25	0.220	0	1	150
Endline	.445	.429	0.187	0	1	340
Region 9						
	Mean	Median	Std. Dev.	min	max	N
Baseline	.	.	.	.	.	.
Midline	.296	.25	0.208	0	1	260
Endline	.478	.467	0.170	0	1	460

Table 46: SRI by gender of household head , at endline (normalized values)

Region 1						
	mean	Median	sd	min	max	N
Female-headed HH	.437	.429	0.188	0	1	209
Male-headed HH	.456	.429	0.187	0	.929	131
Region 9						
	mean	Median	sd	min	max	N
Female-headed HH	.496	.533	0.163	.067	1	261
Male-headed HH	.455	.467	0.177	0	.933	199

Changes in household resilience between baseline and midline have been further investigated using Cumulative Distribution Functions (CDF) of the SRI normalized values. Cumulative Distribution Functions (CDFs) provide a graphical way to compare the distribution of resilience levels across households, rather than focusing only on changes in average values. For any given resilience score, the CDF shows the proportion of households with resilience levels equal to or below that value. When comparing two surveys (for example baseline and endline), the position of the curves indicates how the distribution has changed. If the endline curve lies consistently below the baseline curve (or equivalently, if the endline curve lies to the right of the baseline curve), it means that fewer households fall into the lower resilience ranges, indicating a broad improvement in resilience across the population. This approach therefore allows the analysis to assess not only whether resilience increased on average, but also whether improvements were widespread across households or concentrated among specific groups.

Figure 7 below shows that the endline CDF for the SRI is systematically shifted to the right relative to the baseline across almost the entire support of the SRI, indicating a widespread improvement in household resilience in Region 1 (for which the SRI values can be directly compared between baseline and endline). The figure suggests that approximately 85-90% of households exhibit higher resilience levels at endline than at baseline: at any given cumulative share of the population, the corresponding value of the index is higher at endline. For instance, at the 50% percentile (the median), the Resilience Index increases from approximately 0.40-0.45 at baseline to about 0.50-0.55 at endline, corresponding to a gain of roughly 10 percent points. Similarly, at the 80%

percentile, the index rises from around 0.65-0.70 to approximately 0.75-0.80, indicating substantial improvements also in the upper-middle part of the distribution. This rightward shift reflects not only an increase in average resilience, but also a reduction in the concentration of households at low resilience levels, consistent with a decline in vulnerability and an overall improvement in the distribution of resilience outcomes in the sample.

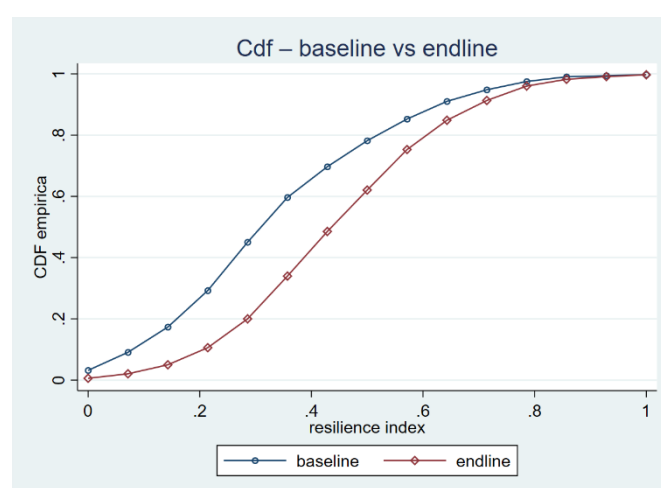


Figure 54: Comparison of the CDF for the normalized SRI index, baseline vs endline

Using the reconstructed values of the SRI at midline, it is further possible to assess the evolution of household resilience along the entire course of the project life-cycle in Region 1 (Figure 8). It reveals a clear non-linear trajectory in the evolution of the Resilience Index over time.

Relative to baseline, the midline distribution is shifted to the left across most of the support, indicating a temporary deterioration in resilience. This decline is particularly visible among households in the lower and middle parts of the distribution, where resilience levels are noticeably lower than those observed at baseline: : at the 20th percentile, the Resilience Index declines from approximately 0.15 - 0.20 at baseline to around 0.10-0.15 at midline, while at the median it decreases from about 0.40 - 0.45 to roughly 0.30 - 0.35. Given that the midline survey was conducted in December 2023, this pattern is likely to reflect the lingering economic and livelihood effects of the COVID-19 pandemic, which affected rural markets, mobility, and economic opportunities in many hinterland communities, particularly among the most vulnerable households.

By contrast, the endline CDF is systematically shifted to the right of both baseline and midline. At the 20th percentile, resilience increases to approximately 0.30 at endline, exceeding both earlier rounds. At the median, the index rises to about 0.50-0.55, and at the 80th percentile increases from around 0.65-0.70 at baseline and 0.75 at midline to

approximately 0.75-0.80 at endline. Overall, for more than 80% of the cumulative distribution, the level of resilience associated with a given population share is higher at endline than at both baseline and midline. This evidence indicates that the deterioration observed at midline was followed by a broad-based recovery and subsequent improvement, resulting in an endline distribution that dominates both earlier distributions.

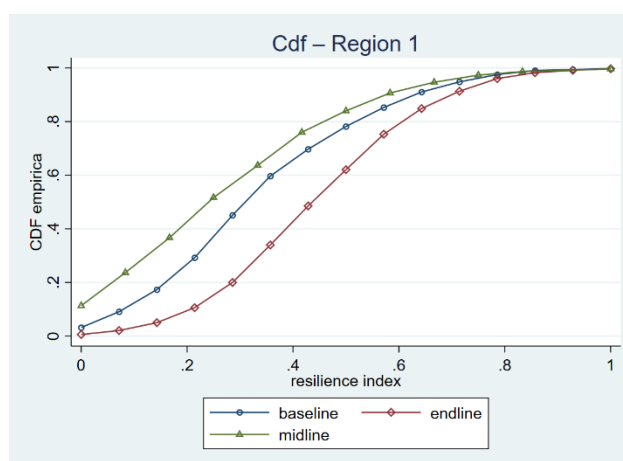


Figure 55: CDF for the SRI in Region 1 (including mid-term)

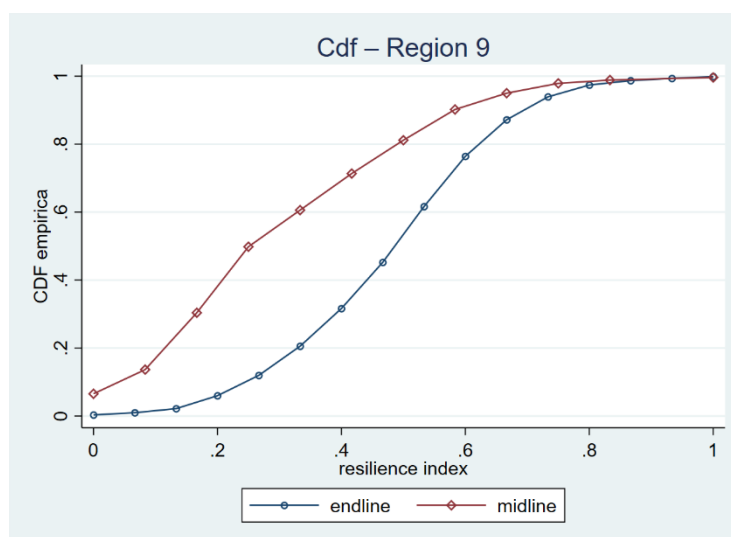
Figure 9 compares the midline and endline cumulative distribution functions (CDFs) for Region 9. As noted earlier, the SRI questionnaire was not administered at baseline in Region 9, and therefore the comparison focuses on changes between the midline and endline surveys. The analysis indicates a clear improvement in the distribution of the resilience index over time. The endline CDF is systematically shifted to the right of the midline curve across most of the distribution, signaling higher resilience levels at endline for a large share of households.

The improvements are particularly pronounced in the lower and middle segments of the distribution, suggesting that gains were especially significant among more vulnerable households. At the 20th percentile, the resilience index increases from approximately 0.15–0.20 at midline to around 0.30 at endline, representing an improvement of about 10–15 percentage points. At the median, resilience rises from roughly 0.30–0.35 at midline to about 0.50–0.55 at endline, indicating a substantial strengthening in the typical resilience level observed across households.

Improvements are also visible in the upper-middle part of the distribution. At the 60th percentile, the index increases from around 0.55–0.60 at midline to approximately 0.70–0.75 at endline. Differences become smaller toward the upper tail, with the two CDFs converging above the 80th percentile, where resilience levels are already relatively high and range between approximately 0.75 and 0.85 in both rounds.

Overall, for more than 80–85 percent of the cumulative distribution, the resilience level associated with a given population share is higher at endline than at midline. This pattern suggests that the temporary deterioration observed at midline—likely reflecting broader economic and livelihood disruptions during the pandemic period—was followed by a broad recovery and strengthening of resilience in Region 9, with particularly strong improvements among households that were initially the least resilient.

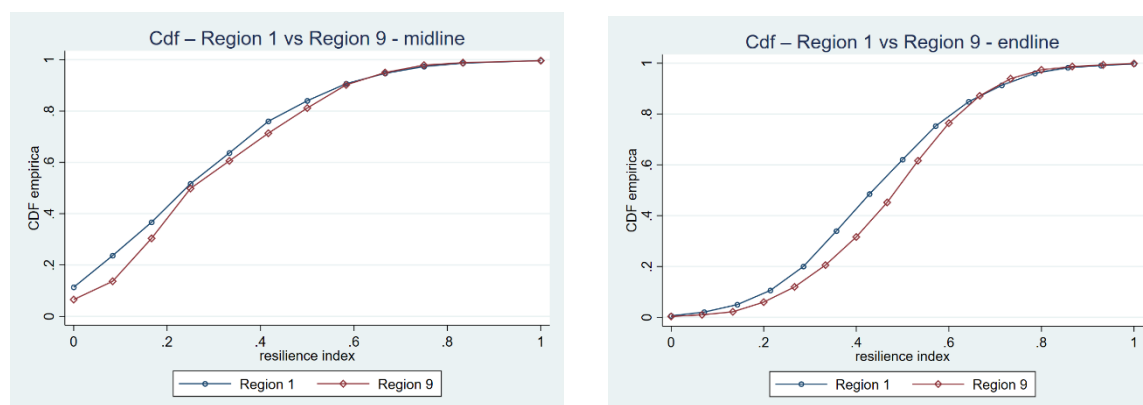
Figure 56: CDF for the SRI in Region 9, midline and endline (normalized values)



CDFs Comparison Between Regions. The comparison of cumulative distribution functions (CDFs) between Region 1 and Region 9 shows markedly different patterns at midline and endline (Figure 10). At midline, the two distributions are very similar across almost the entire support of the SRI. The CDFs largely overlap, with only minor differences in the lower tail, indicating that resilience levels were broadly comparable between the two regions at this intermediate stage. At both the median and the upper-middle part of the distribution, resilience values are nearly identical, suggesting no substantial regional gap at midline.

By contrast, clearer differences emerge at endline. The CDF for Region 9 is shifted to the right of that for Region 1 over a sizable portion of the distribution, particularly in the lower and middle quantiles. At the 20th percentile, the Resilience Index is approximately 0.20-0.25 in Region 9 compared to about 0.15-0.20 in Region 1, while at the median resilience reaches roughly 0.50-0.55 in Region 9 versus around 0.45-0.50 in Region 1. Differences gradually narrow toward the upper tail, where the two CDFs converge and resilience levels are similar in both regions above the 80th percentile. Overall, while resilience distributions were largely aligned at midline, the endline evidence indicates an interesting rightward shift for Region 9, consistent with higher resilience outcomes for a substantial share of households in this region. This pattern

indicates that the resilience-enhancing effects of the HESAD programme which may have materialized more fully by the endline in Region 9 compared to Region 1.



15.3.b Results according to the RDMT index

The results obtained using the Simplified Resilience Index (SRI) can now be compared with those derived from the more comprehensive RDMT framework. While the SRI provides a synthetic approximation of household resilience, the RDMT offers a more detailed measurement by separating the analysis into two complementary dimensions: the adoption of resilience-enhancing practices promoted by the project, and the results achieved in terms of improved livelihood outcomes. Examining these dimensions jointly allows for a more precise interpretation of how changes in resilience occurred between the midline and endline surveys.

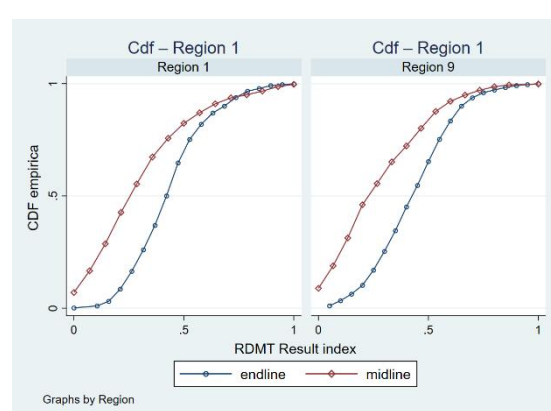
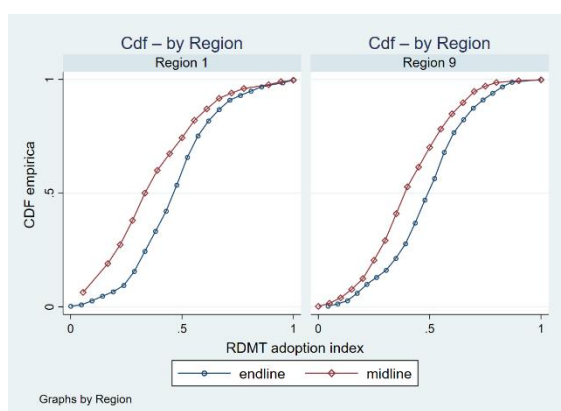
Across both Region 1 and Region 9, the cumulative distribution functions (CDFs) of the RDMT Adoption, Results and Overall indices show a clear and systematic rightward shift from midline to endline. This indicates that resilience levels improved for a large share of households during the final phase of project implementation. In both regions, the endline distribution dominates the midline distribution over most of the support, meaning that for a large majority of households the RDMT score associated with a given population share is higher at endline than at midline.

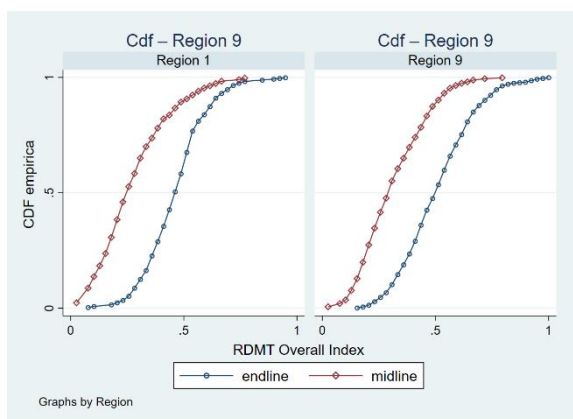
From a quantitative perspective, the improvement is broad-based. For approximately 80–85 percent of the cumulative distribution, the value of the RDMT indices observed at endline exceeds the corresponding midline value. The magnitude of the shift is particularly visible around the middle of the distribution. At the median, both the RDMT Results Index and the RDMT Overall Index increase by roughly 15–20 percentage points between midline and endline in both regions. These improvements reflect both the expansion in the adoption of project-supported practices and the increasing translation of these practices into tangible livelihood outcomes.

Regional patterns also provide useful insights. While Region 9 displays slightly higher resilience scores at midline, Region 1 shows a strong catch-up by the endline survey. By the end of the observation period, the distributions converge substantially, particularly in the upper half of the resilience distribution, suggesting that project-supported interventions contributed to achieving broadly comparable resilience outcomes across the two regions despite their different initial conditions.

Taken together with the results obtained using the SRI, these findings provide a consistent picture of resilience dynamics during the project period. The SRI analysis highlights a temporary deterioration in resilience around the midline survey, likely reflecting the lingering effects of the COVID-19 pandemic on rural livelihoods. The RDMT analysis shows that this downturn was followed by a strong recovery and further strengthening of resilience by the end of the project, driven by both increased adoption of resilience-enhancing practices and improvements in livelihood outcomes.

Based on the combined evidence from the SRI and RDMT distributions, it can be confidently estimated that 80 percent of households experienced an increase in resilience between the midline and endline surveys. This estimate is consistent with the observed rightward shift of the resilience distributions across both regions and provides the empirical basis for assessing progress against the project Logframe indicator “Targeted households have increased their resilience”. The results therefore indicate that a substantial majority of beneficiary households improved their resilience capacity during the project period.





15.4 Risk cluster–level synthesis: adoption, results, and coherence

As discussed above, the RDMT framework allows the resilience analysis to be decomposed along two complementary dimensions: the adoption of resilience-enhancing practices and the results achieved. Adoption indicators measure the uptake of practices or participation in project-supported activities, while results indicators capture the extent to which these practices translate into improved livelihood outcomes. These two dimensions can be further disaggregated across risk clusters and intervention groups. The two risk clusters that were selected for HESAD reflect the principal sources of vulnerability faced by households in the project areas. Each cluster is further subdivided into intervention groups that capture specific pathways through which the project aimed to strengthen household resilience. This hierarchical structure provides a useful analytical lens to understand how different types of project-supported actions contribute to resilience building, and to assess the degree of coherence between adoption and results across intervention domains.

Figures 10 and 11 present the average adoption and results scores for the intervention groups under Risk Cluster 1 (RC1) and Risk Cluster 2 (RC2). The matrices allow for a joint visualization of adoption intensity (horizontal axis) and realized results (vertical axis), thereby highlighting the relative positioning and performance of each intervention group. The specific questions contributing to each Risks Cluster and Intervention group are presented in Table A4.2 but a brief description will be given here to help the interpretation of results

Risk Cluster 1: Climate risk planning and management. Risk Cluster 1 focuses on strengthening households’ anticipatory and adaptive capacities by improving climate risk awareness, collective planning, economic practices and behavioural changes related to livelihoods and food security. It includes the following intervention groups.

RC1–INT1: Collective climate planning. This intervention group captures households' participation in community planning processes that incorporate climate risk considerations. Adoption indicators measure whether household members participated in community planning and received training on climate change and risk reduction. Results indicators assess whether the resulting plans include concrete actions to mitigate climate-related risks such as floods, saltwater intrusion, or extreme temperatures.

RC1–INT2: Producer groups and livelihood diversification. This intervention group reflects the role of collective economic action and diversified livelihood strategies in spreading climate-related risks. Adoption indicators capture whether household members participate in a producer group with an adopted business plan, and whether households have diversified their production systems by increasing the number of crops, livestock species, or livelihood activities. Results indicators measure whether participation in these economic and diversification activities has contributed to increased household income and whether households have maintained stable access to food despite shocks.

RC1–INT3: Nutrition and diets. This intervention group focuses on improvements in dietary practices and nutritional awareness. Adoption indicators assess whether households have changed their food consumption patterns to include more nutritious foods. Results indicators measure improvements in dietary diversity using the Minimum Dietary Diversity for Women (MDDW) indicator.

Risk Cluster 2: Climate hazards. Risk Cluster 2 addresses households' exposure to climate hazards such as floods, droughts, and extreme temperatures. Interventions in this cluster focus on technical practices, infrastructure investments, and services aimed at reducing vulnerability to climate shocks. It comprises the following intervention groups.

RC2–INT1: Climate-smart agriculture for crops and livestock. This intervention group captures the adoption of climate-smart agricultural practices in both crop and livestock production systems. Adoption indicators measure whether households have adopted or participate in groups implementing climate-smart production practices and the number of such practices implemented. Results indicators assess whether these practices have helped prevent significant losses in crop or livestock production during climate events.

RC2–INT2: Post-harvest practices. This intervention group focuses on improved storage, processing, and handling practices aimed at reducing post-harvest losses under climate stress conditions. Adoption indicators capture the uptake of climate-adaptive post-harvest techniques, while results indicators measure whether households have been able to limit post-harvest losses to below critical thresholds.

RC2–INT3: Water and flood infrastructure. This intervention group addresses households' access to water and the capacity of communities to manage flooding. Adoption indicators measure investments in rainwater harvesting, water supply infrastructure, drainage systems, and bridges that improve access during floods. Results indicators assess whether households experience adequate water availability and whether flooding disrupts access to homes, assets, or essential services.

RC2–INT4: Renewable energy and internet connectivity. This intervention group captures improvements in access to renewable energy sources and digital connectivity. Adoption indicators measure whether households or producer groups use renewable energy sources and have access to internet services. Results indicators assess whether households have reliable energy for household and productive uses and whether internet-based information (such as weather forecasts or climate-smart farming advice) is used in decision-making.

Together, these clusters and intervention groups capture the multiple dimensions through which the project seeks to strengthen resilience: improving knowledge, collective organization and collective economic action (RC1), while also reducing exposure to climate hazards through improved practices, infrastructure, and services (RC2). The adoption and results scores derived from these questions provide the basis for the intervention performance analysis presented in the following sections.

The synthesis of RDMT adoption and results scores at the Risks Cluster and Intervention level are presented in Figures 10 and 11 below. It is important to note that the values shown in these figures represent the *average normalized scores* derived from the RDMT index construction, rather than simple percentages of households adopting a practice or reporting a specific outcome. As explained above, each intervention score is calculated by aggregating and normalizing the responses to the RDMT questionnaire items associated with that intervention, with each intervention contributing a maximum of four points to the index regardless of the number of underlying questions. The scores are then normalized on a 0–1 scale to allow comparability across interventions and clusters. As a result, the values in the figures should be interpreted as relative performance indicators summarizing both the intensity and the quality of adoption and results, rather than as shares of households reporting a given practice or outcome. The percentage statistics presented elsewhere in the report (for example, the share of households participating in business plans) therefore describe specific practices, while the RDMT scores summarize the combined contribution of related indicators to overall resilience performance.

With this caveat in mind, some clear differences emerge between the two clusters in terms of both adoption patterns and the translation of adoption into results. Within RC1, adoption levels are generally high. In particular, RC1–INT2 (producer groups and livelihood diversification) displays the strongest adoption score, approaching the upper

range of the scale. While the main adoption driver is the extent of maintained or increased diversification of production systems, the project's capacity to mobilize producer groups through the Business Plans approach (while being below the original outreach target established at design) has contributed to increasing adoption scores on this dimension. Most importantly, this intervention group also resulted in high results scores, suggesting that participation in producer organizations and diversification strategies has translated into meaningful improvements in income stability and adaptive capacity. As reported above, a key element in this regard has been the high percentage of households participating in BP that reported substantial income increases.

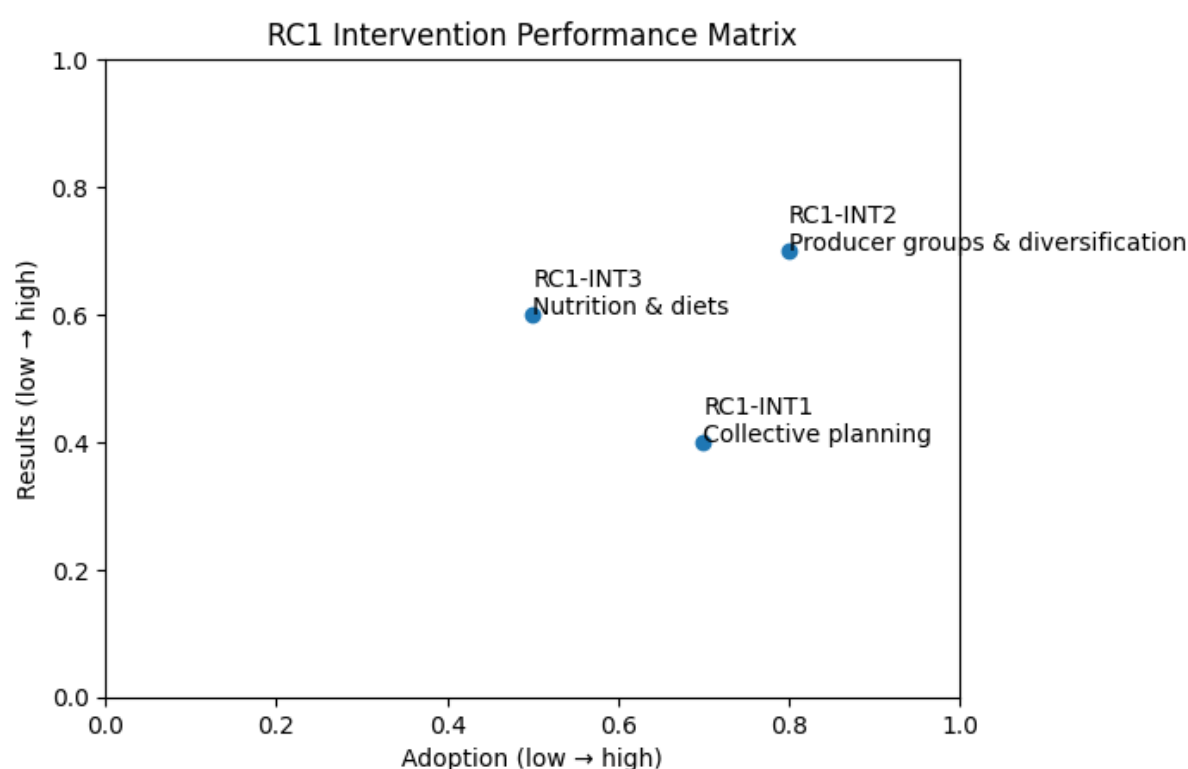


Figure 57: Adoption - results matrix for Risks Cluster 1

RC1-INT3 (nutrition and diets) displays a different profile. Adoption levels are moderate rather than high (that is, fewer households have reported making changes in their diets), but results scores are comparatively strong. This pattern suggests that even partial uptake of improved dietary practices, coupled with the nutrition-related awareness activities of the project, has generated tangible improvements in food security and diet quality among beneficiary households as measured through the MDDW (whose strong results have already been discussed above). In other words, the intervention appears to

generate relatively high returns in terms of outcomes once behavioral changes are adopted.

RC1–INT1 (collective climate planning) occupies instead a lower position in the results dimension. Although adoption levels are relatively high (indicating strong participation in community planning processes), the corresponding results scores are more modest. As will be further discussed below, this is likely due to two factors. First, climate-related training as part of the collective planning processes has generally been weak, and this may help explain why the climate-related actions considered in the plans were only to some extent considered adequate. Moreover, a longer time horizon may be required for more specific climate-resilience actions to be effectively incorporated in planning processes and translate into concrete livelihood improvements. Such interventions play a foundational role in strengthening local governance and risk awareness, but may yield measurable impacts only gradually.

A somewhat different configuration emerges within RC2, which focuses on climate hazards and on interventions that involve more technical practices or infrastructure investments. RC2–INT3 (water and flood management infrastructure) and RC2–INT4 (renewable energy and digital connectivity) show moderate adoption levels combined with moderate results scores. This positioning suggests that these infrastructure-related interventions are generating tangible benefits for households once implemented, but that their adoption remains constrained by financial, logistical, or institutional factors.

By contrast, RC2–INT1 (climate-smart agriculture practices for crops and livestock) and RC2–INT2 (post-harvest practices) display very low adoption scores, indicating that the uptake of these more technical or knowledge-intensive adaptation practices has remained extremely limited. As discussed above, this is also reflected in the very scarce number of beneficiaries that have received specific training on these aspects. However, RC2–INT2 (post-harvest practices) stands out in terms of results, showing one of the highest results scores among all interventions despite its limited adoption. This pattern suggests strong leverage effects: when these practices are adopted, they can generate substantial improvements in production efficiency and loss reduction, but their diffusion remains constrained.

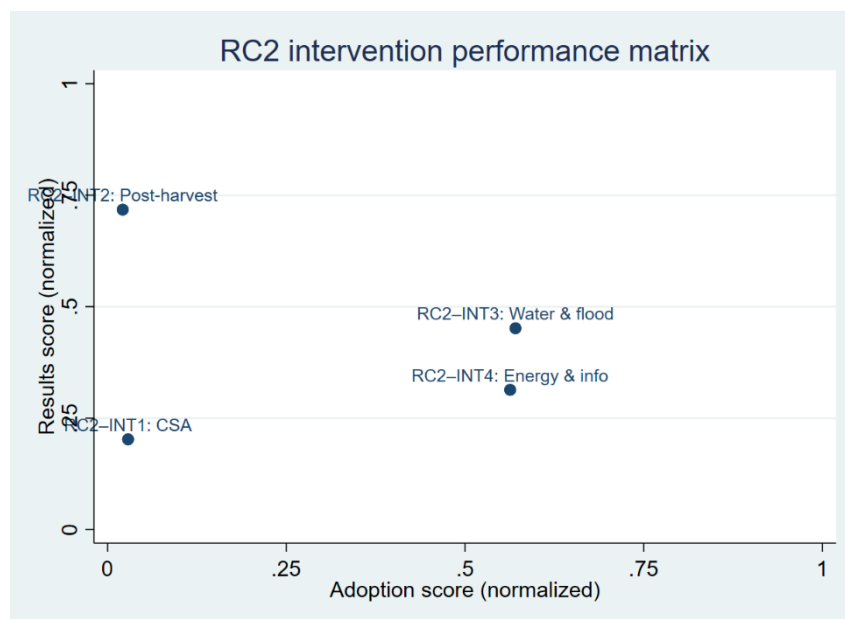


Figure 58: Adoption - results matrix for Risk Cluster 2

Adoption–results coherence and complementarities. A joint reading of the adoption and results dimensions reveals important patterns regarding the coherence between interventions and their realized outcomes. First, some interventions show a relatively balanced relationship between adoption and results. This is particularly the case for RC1–INT2 (producer groups and diversification), where adoption is accompanied by strong results. This pattern suggests that investments in production activities and diversified livelihoods have been particularly effective in contributing to strengthened household resilience.

Second, other interventions show moderate adoption but relatively strong outcomes. RC1–INT3 (nutrition and diets) and RC2–INT2 (post-harvest practices) fall into this category. In these cases, the results dimension appears to exceed what might be expected from adoption levels alone, indicating that even partial uptake of the promoted practices can generate significant improvements in household well-being.

Third, some interventions show relatively strong adoption but more limited results. RC1–INT1 (collective planning) illustrates this pattern. Such interventions may represent enabling conditions for resilience rather than direct drivers of immediate livelihood outcomes. Their impact is likely to materialize indirectly and over longer time horizons through improved coordination, planning capacity, and collective action.

When aggregated across risk clusters, the RDMT results show that adoption scores tend to be higher and more evenly distributed than results scores. This suggests that households have taken important steps toward adopting improved practices, but that

the full translation of these practices into measurable resilience outcomes is still unfolding. This gap between adoption and results should not necessarily be interpreted as a weakness of the interventions. Rather, it likely reflects the timing of project implementation. The HESAD project experienced significant delays in the delivery of investments in the communities, which reduced the time available for some interventions to fully translate into longer-term outcomes. This dynamic is further reinforced by the broader context in which households operate. As highlighted in previous sections of the report, communities continue to face high exposure to climate hazards and other structural constraints affecting markets, infrastructure, and access to services. In such contexts, behavioral change and the adoption of improved practices often precede measurable livelihood improvements, which may require several production cycles or additional complementary investments to fully materialize.

From this perspective, the RDMT results suggest that the HESAD project has been successful in supporting the early stages of the resilience pathway by promoting the adoption of improved practices, strengthening collective organization, and expanding access to productive opportunities. The results dimension indicates that these changes are already beginning to translate into tangible livelihood benefits, and the project has achieved its intended objective to increase resilience (as measured by the RDMT) for 80% of the beneficiary households. This notwithstanding, some of the expected outcomes will likely continue to emerge beyond the immediate project horizon.

From an operational standpoint, the intervention matrices suggest several priorities for future programming. First, interventions combining relatively strong adoption and strong results (such as investments in group business plans and livelihood diversification) appear to represent high-leverage areas that could be further scaled up in future initiatives. Second, interventions that appear to have generated strong results despite limited adoption (such as post-harvest practices leading to reduced losses) may require more targeted efforts to address barriers to uptake, including access to equipment, technical support, or financing. The same applies to the need for more deliberate efforts for the adoption of climate-smart and resilient production practices, that has remained extremely limited.

Third, interventions with high adoption but more limited short-term outcomes (such as community climate planning) should be recognized for their enabling role within the resilience system, even if their impacts become visible only over longer time horizons. However, stronger efforts and accompaniment would be needed to ensure that the climate-readiness dimension and related climate-awareness are fully and effectively integrated in community plans.

15.5 Group comparisons

RDMT results by gender of the head of household. When comparing results according to the gender of the household head, the distribution of RDMT scores reveals only limited differences in overall resilience performance between male-headed and female-headed households. Across adoption, results, and the RDMT Overall index, the two groups display broadly comparable score distributions, suggesting that gender of the household head is not a primary driver of aggregate resilience outcomes at the current stage.

Male-headed households tend to exhibit slightly higher average scores in RC1 Adoption and RC1 Results, reflecting marginally stronger performance in dimensions related to individual production practices and resource management. Female-headed households, by contrast, show similar or slightly higher values in RC2 Adoption, pointing to a comparable level of engagement in practices linked to governance, participation, and collective arrangements. These differences, however, remain modest and do not translate into a meaningful divergence in the RDMT Overall index.

Importantly, the adoption–results gap observed in the aggregate analysis persists for both household typologies. In both male- and female-headed households, adoption scores remain higher than results scores, indicating that the challenge of converting uptake into consolidated resilience is shared across gender groups rather than being concentrated in one typology. The similarity in RDMT Overall scores suggests that program interventions have benefited male- and female-headed households in a balanced way.

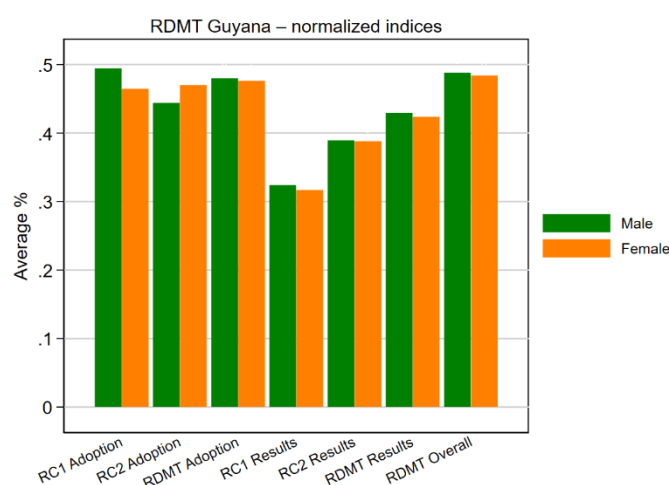


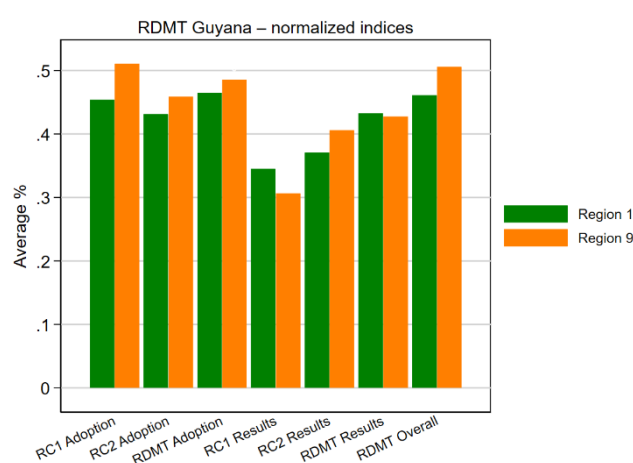
Figure 59: Comparison of normalized RDMT indexes according to the gender of the household head

Region. The comparison between Region 1 and Region 9 reveals distinct but complementary stages of the resilience pathway, which are likely related to differences

in project intervention effectiveness and timing. Region 9 consistently records higher adoption scores, particularly for RC1, indicating stronger and more widespread uptake of promoted practices. This pattern suggests a context in which households are more actively engaging with project-supported interventions and are able to implement changes at the production and household level.

Region 1, however, shows relatively stronger performance in results-based indicators and in the RDMT Overall index. This implies a greater degree of consolidation, where adopted practices are more effectively translated into resilience capacities, income improvements, and sustained access to resources. While these differences may point to differences in timing, exposure, and institutional maturity of the resilience-enhancing processes among the two regions, it is also important to recall that households in Region 9 are significantly more exposed to climate risks (as shown by the Severity Exposure Index distribution). In any case, Region 9 appears to be earlier in the resilience trajectory, while Region 1 reflects a more advanced stage in which outcomes have begun to materialize.

These findings underscore that resilience should be interpreted as a dynamic process rather than a static outcome. Regions with higher adoption are not necessarily underperforming; rather, they may require additional time and enabling conditions to convert uptake into measurable results.



Type of plan (PCIP vs. BP & PCIP). Disaggregation by the type of plan from which households have benefited reveals one of the most robust patterns in the RDMT analysis. Households that reported benefiting from both Business Plans (BP) and PCIPs consistently achieve higher scores across the adoption, results, and RDMT Overall indices compared to households supported only through PCIPs. This gap is particularly pronounced for the adoption dimension but remains clearly visible for results,

indicating that combined planning instruments generate both immediate improvements in practice uptake and stronger medium-term resilience outcomes.

The difference is especially visible in the RC1 dimension, which includes interventions related to collective planning, producer organization, and livelihood diversification. Households engaged in both BP and PCIP consistently display higher adoption scores across most interventions compared to those benefiting from PCIP only. This pattern is particularly pronounced for RC1–INT1 (community climate planning) and RC2–INT4 (renewable energy and internet access), suggesting that combined planning instruments strengthen households' capacity to engage with more complex or capital-intensive interventions that require forward planning and coordination.

Differences in results scores are generally smaller than those observed for adoption but remain directionally consistent. In several cases, households benefiting only from PCIPs achieve outcomes comparable to those with combined plans, particularly for nutrition and water-related interventions. This reflects the presence of spillovers and shared benefits where interventions rely on collective infrastructure or community-level services. Nevertheless, households benefiting from both BP and PCIP still display systematically stronger adoption and slightly higher outcomes overall, suggesting that business planning processes help translate enabling conditions into more sustained behavioural and livelihood changes. Similar patterns, though somewhat less pronounced, are also observed in the RC2 cluster, indicating that the complementarities extend to interventions addressing climate hazards and risk mitigation practices.

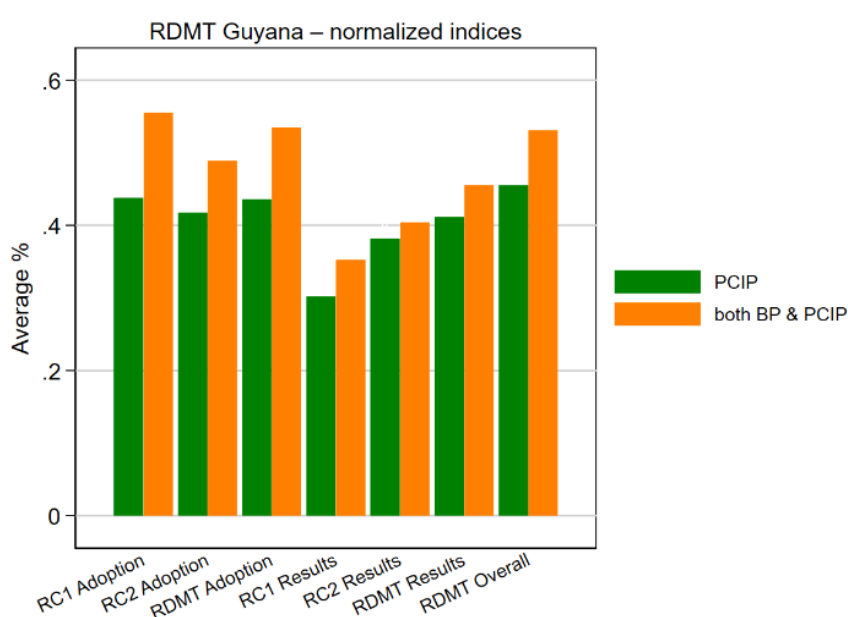
Governance arrangements introduce additional nuances. Infrastructure-related interventions tend to perform slightly better under public governance, consistent with the role of coordination and collective action in water, flood management, and energy systems. Under private governance arrangements, adoption of RC1 interventions remains strong and results are broadly comparable, indicating that household-level and market-oriented mechanisms are particularly effective in supporting behavioural change and production-related improvements.

Overall, plan type and governance arrangements appear to shape adoption intensity more strongly than realised results. This reinforces the interpretation that resilience outcomes depend not only on household-level uptake but also on the structural characteristics of interventions and their institutional embedding within communities.

At the aggregate level, the RDMT Overall index reaches approximately 0.53 among households benefiting from both BP and PCIP, compared to roughly 0.45 among households supported only through PCIP. This difference suggests that the combination of productive investments and community-level infrastructure creates reinforcing effects that enhance households' capacity to adopt improved practices and translate

them into resilience outcomes. In practice, PCIP investments appear to provide the enabling infrastructure and services for improved practices, while the addition of a Business Plan strengthens the planning capacity, resource allocation, and strategic orientation needed to convert these enabling conditions into tangible livelihood improvements.

From an operational perspective, the results suggest that stronger convergence and coordination between PCIP and BP instruments can generate important leverage effects. Aligning infrastructure investments with livelihood development strategies appears to amplify the effectiveness of both interventions. Future programming in similar contexts may therefore benefit from designing these instruments more explicitly as mutually reinforcing components within an integrated local development framework rather than as parallel intervention streams. The results also highlight the importance of ensuring that households initially benefiting from PCIP investments are progressively linked to livelihood and business development support. Such sequencing may help transform infrastructure gains into sustained economic and resilience outcomes..



Business plans implementer (Village Council vs. private groups). Disaggregation by the governance modality of Business Plans reveals moderate but informative differences between plans managed by village councils and those implemented by private groups. As shown in Figure XX, privately managed plans tend to exhibit slightly higher adoption scores, particularly in the RC2 cluster and in the overall adoption index. This suggests that smaller-scale, privately managed arrangements may facilitate faster

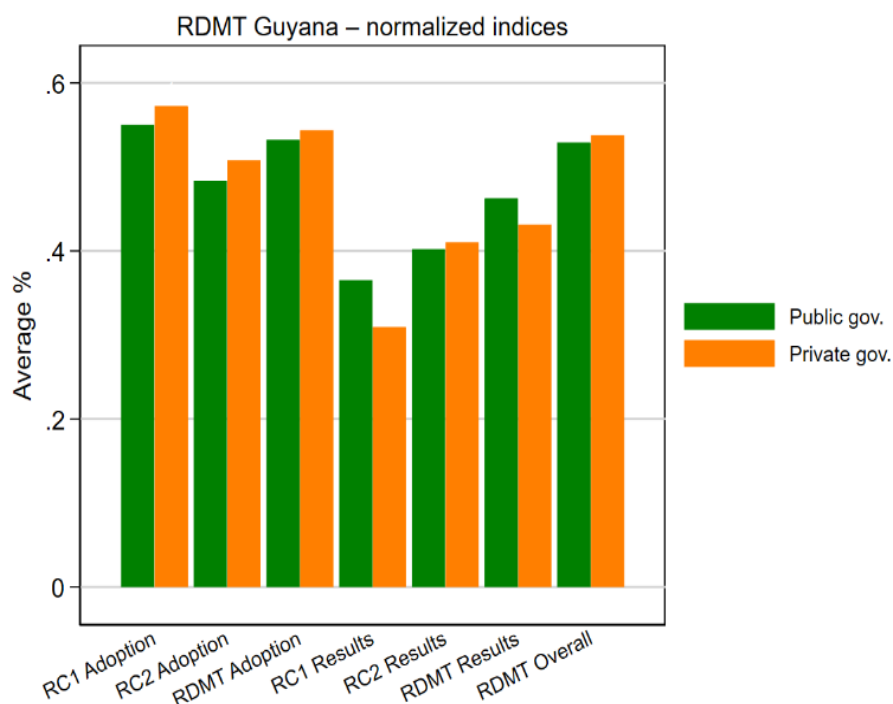
decision-making, clearer incentive structures, and more rapid implementation of promoted practices.

However, this relative advantage in adoption becomes less pronounced when examining the results-based indicators. In particular, village council–managed plans show slightly stronger performance in the RC1 results dimension and in the overall RDMT results index. These differences indicate that higher adoption under private management does not automatically translate into stronger or more durable resilience outcomes.

This pattern suggests that village councils may play an important stabilizing and coordinating role in the implementation of collective investments. While decision-making processes under council governance may sometimes slow the pace of early adoption, they may also strengthen collective oversight, support coordination among community members, and help ensure that investments and practices are sustained over time. In addition, village council involvement may facilitate broader distribution of benefits within the community, reinforcing the collective dimension of resilience-building interventions.

Overall, the RDMT Overall index remains very similar between the two governance arrangements, indicating that both management models can generate comparable resilience outcomes, albeit through somewhat different pathways. Private governance structures appear to facilitate faster uptake of practices, while village council governance may contribute to more stable consolidation of results, particularly where collective action and coordination are required.

From an operational perspective, these findings suggest that the effectiveness of Business Plans may depend less on the choice between private or council management than on the extent to which governance arrangements ensure both incentives for adoption and mechanisms for collective coordination and oversight..



15.6 Focus on some specific intervention groups

This section will provide more details on some of the intervention groups that contribute to the assessment of the RDMT. It will particularly focus on those groups not directly discussed in the earlier parts of the report.

15.6.1 Collective climate planning (RC1-INT1)

Collective climate planning represents the first intervention under Risk Cluster 1, which addresses households' capacity to anticipate and manage climate risks through improved planning, coordination, and access to information. The intervention focuses on strengthening community-level planning processes, integrating climate risk awareness into these processes, and ensuring that development plans include concrete actions aimed at reducing climate-related vulnerabilities. The intervention logic assumes a sequential pathway: participation in community planning processes should expose households to information and training on climate risks, which in turn should lead to the incorporation of concrete climate-resilient actions in community development plans. The RDMT therefore measures three key elements: (i) participation in community planning processes, (ii) access to climate-related training embedded in these processes, and (iii) the extent to which resulting plans include concrete climate risk-reduction measures.

The results show that direct participation in community planning processes is relatively widespread but far from universal. Overall, about 40% of households reported

participating in community development or investment planning processes. Participation is somewhat higher in Region 9 (43%) than in Region 1 (35.9%), suggesting stronger engagement in collective planning processes in the southern hinterland communities. These results should be viewed in light of the fact that all the surveyed communities had a PCIP active, and that 74% of the households in Region 1 and 71% of the households in Region 9 declared receiving some type of benefits from the PCIP. Thus, benefits extended well beyond the households directly involved in the formulation or preparation of the plans. At the same time, participation has now been universal and the “actively engaged” households are only about half of the benefiting households.

However, participation in climate-related training linked to planning processes remains significantly more limited. Only 14.9% of households reported receiving climate-related training as part of these processes. Again, Region 9 performs somewhat better (17.6%) than Region 1 (11.2%). This gap between general participation and climate-specific training suggests that, while community planning processes were relatively common, the integration of climate risk awareness within these processes remains uneven. These results indicate that a significant share of households participate in collective planning activities but do not necessarily receive climate-related training as part of these processes. In practice, this means that many planning processes may remain focused on general development priorities rather than explicitly addressing climate risks.

Table 47: Participation in collective climate planning processes

	Total hh)	(% N	Region 1 hh)	(% N	Region 9 hh)	(% N
Participation in community planning	40.0	800	35.9	340	43.0	460
Climate-related training received	14.9	800	11.2	340	17.6	460

The RDMT results indicator examines whether the community plans developed through these processes include concrete actions aimed at addressing climate risks. Based on the respondents’ assessment, approximately 47.1% of the plans included adequate climate risk–reduction actions, while 37.8% contained only limited or insufficient measures, and 15.1% included no climate-related actions at all. There are notable regional differences. Region 9 performs substantially better, with 54.3% of plans including adequate climate actions, compared to only 31.6% in Region 1. Conversely, Region 1 shows a higher share of plans with no climate-related actions (23.7%) compared to Region 9 (11.1%). These results suggest that while climate considerations

are increasingly integrated into community planning processes, there remains substantial variation in the depth and quality of this integration.

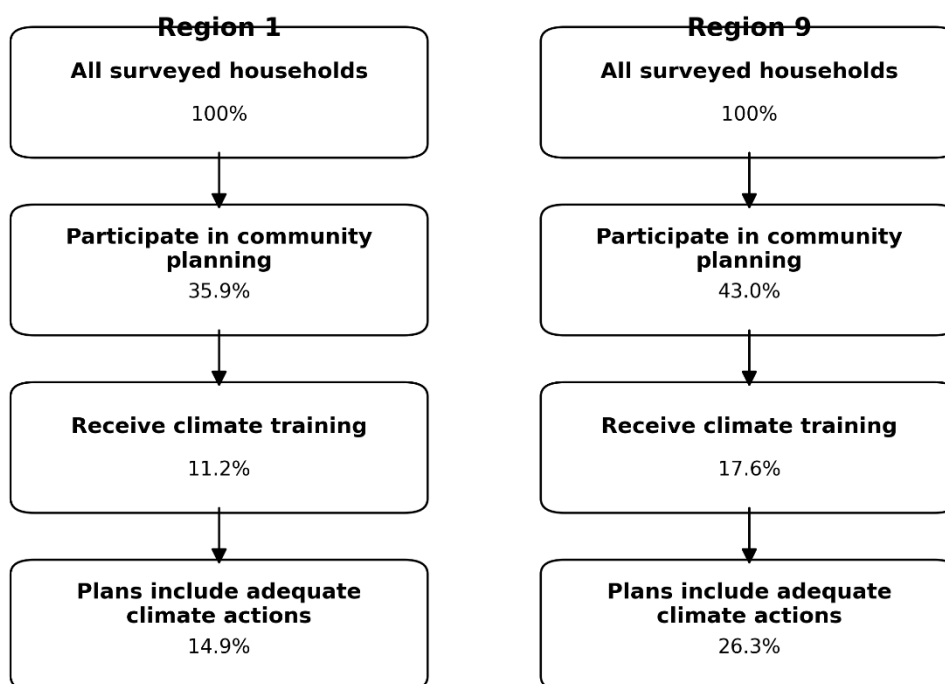
Table 48: Inclusion of climate risk reduction actions in community plans

Climate actions included in plans	Total (%) hh)	N	Region 1 (%) hh)	N	Region 9 (%) hh)	N
No climate actions	15.1	119	23.7	38	11.1	81
Few / insufficient actions	37.8	119	44.7	38	34.6	81
Adequate climate actions	47.1	119	31.6	38	54.3	81

Examining the relationship between participation in planning and the inclusion of climate actions provides further insight into the effectiveness of this intervention group. Among households that participated in community planning processes, slightly more than half (55.4%) reported that the resulting plans included adequate climate risk-reduction actions, while 44.6% indicated that the actions were insufficient. Once again, regional differences are notable. In Region 9, 61.1% of participating households reported adequate climate actions, compared to 41.4% in Region 1. Conversely, a majority of participants in Region 1 (58.6%) indicated that planning processes resulted in only limited climate measures. These results indicate that participation in planning processes does not automatically translate into the integration of strong climate adaptation measures. The effectiveness of planning processes therefore depends not only on participation rates but also on the quality of technical support, facilitation, and training provided during these processes.

Table 49: Adoption–results coherence in collective climate planning

Among households participating in planning	Total (%) hh)	N	Region 1 (%) hh)	N	Region 9 (%) hh)	N
Few / insufficient climate actions	44.6	101	58.6	29	38.9	72
Adequate climate actions	55.4	101	41.4	29	61.1	72



Note: "Plans include adequate climate actions" is shown as a share of all households (participation × adequacy among participants).

Figure 60: Summary of cascading actions for climate planning under RC1-INT1

Taken together, the findings suggest that collective planning processes represent an important entry point for strengthening anticipatory resilience capacities within communities. The relatively high levels of participation indicate that community planning mechanisms are functioning and that households are engaged in collective decision-making. However, the limited coverage of climate-related training and the uneven inclusion of climate risk-reduction actions suggest that the climate dimension of these planning processes remains only partially institutionalized. Strengthening the integration of climate risk awareness within community planning processes therefore represents a key opportunity for improving the effectiveness of this intervention.

From an operational perspective, the results highlight two priorities for future programming. First, expanding access to climate-related training within community planning processes could significantly strengthen the link between participation and resilience outcomes. Second, stronger technical accompaniment may be needed to ensure that climate considerations and the related needs are systematically translated into concrete actions within community development plans.

15.6.2 Water access and flood management infrastructure (RC2–INT3)

This intervention group focuses on strengthening households' resilience to climate hazards through investments in community-level water infrastructure and flood management systems. The interventions aim to reduce the vulnerability of households to water scarcity and flooding, which (as shown in the section on climate hazards exposure) represent two of the most significant climate-related risks in hinterland communities.

The intervention logic assumes that community investments in water supply systems (such as rainwater harvesting or other water infrastructure) improve households' access to safe water for domestic and production use. At the same time, investments in drainage systems and bridges are intended to reduce flood-related disruptions by protecting houses and enabling continued access to essential services and production activities during flood events.

The RDMT assessed this intervention through two complementary adoption questions: investments in water infrastructure (Q8.1) and investments in drainage and bridge infrastructure to manage flooding (Q9.1). Results were assessed through three questions capturing to what extent households experience water shortages or poor water quality (Q8.2), flooding and associated asset losses (Q9.2), and disruptions in access to services or production activities (Q9.3).

Community investments in water infrastructure appear relatively widespread across project areas. Overall, 60.9% of households reported that their community had invested in water infrastructure over the previous two years, with very similar levels across regions. These results suggest that water infrastructure investments have reached a majority of households in the surveyed communities. The relatively small difference between regions indicates that such investments have been implemented broadly across the project area.

Table 50: Community investments in water infrastructure (Q8.1)

Community invested in water infrastructure	Region 1	Region 9	Total
No	38.24%	39.78%	39.13%
Yes	61.76%	60.22%	60.88%
Total households (N)	340	460	800

Investments in flood-related infrastructure (such as drainage systems and bridges) are also relatively common but show stronger regional variation. **Overall, 53.3% of households reported community investments in drainage or bridge infrastructure**, with adoption substantially higher in Region 9. This pattern likely reflects the greater exposure of Region 9 communities to flood risks and seasonal access constraints, which may have increased the demand for flood mitigation infrastructure.

Table 51: Community investments in drainage and bridge infrastructure (Q9.1)

Community invested in drainage / bridges	Region 1	Region 9	Total
No	53.24%	41.96%	46.75%
Yes	46.76%	58.04%	53.25%
Total households (N)	340	460	800

Examining the joint adoption of water and flood infrastructure investments provides further insight into the extent to which communities benefit from integrated risk management systems. Approximately one third of households (33.3%) reported that their community had invested in both types of infrastructure, suggesting that integrated water and flood management systems are present in a significant share of communities. However, nearly one fifth of households still reported no investments in either type of infrastructure, highlighting remaining gaps in access to basic resilience-enhancing investment.

Table 52: Combined adoption of water and flood infrastructure

Infrastructure investments	Region 1	Region 9	Total
Neither investment	21.47%	17.39%	19.13%
Water infrastructure only	31.76%	24.57%	27.63%
Flood infrastructure only	16.76%	22.39%	20.00%
Both water and flood infrastructure	30.00%	35.65%	33.25%
Total households (N)	340	460	800

The results indicators provide further insight into the effectiveness of these investments in improving water access. The results reveal persistent challenges in water access. Although over one third of households report having reliable access to good-quality water, a majority still experience either water shortages or poor water quality. The pattern also differs significantly across regions. Region 9 shows higher levels of adequate water access, while Region 1 reports a much higher prevalence of poor water quality.

Table 53: Household experience of water shortages or poor water quality

Household water access experience	Region 1	Region 9	Total
Lack of water for more than one month	16.76%	25.22%	21.63%
Have water but not of good quality	55.29%	33.26%	42.63%
No lack of water / water of good quality	27.94%	41.52%	35.75%
Total households (N)	340	460	800

Flooding remains an important source of vulnerability in the project areas. Approximately 20% of households reported that their house had been flooded with resulting asset losses, with higher exposure observed in Region 9. In addition to physical damages, floods also continue to frequently disrupt access to essential services and production activities. Nearly 31% of households reported being unable to reach essential services or production activities due to lack of bridges or crossing infrastructure, highlighting the importance of transport and drainage infrastructure in maintaining access to key services , including markets for economic activity, during flood events.

Table 54: Flooding of and loss of assets (Q9.2)

House flooded with asset losses	Region 1	Region 9	Total
No	83.13%	77.39%	79.77%
Yes	16.87%	22.61%	20.23%
Total households (N)	326	460	786

Table 55: Inability to access services or production due to lack of bridges (Q9.3)

Unable to reach services or production	Region 1	Region 9	Total
No	72.35%	66.96%	69.25%
Yes	27.65%	33.04%	30.75%
Total households (N)	340	460	800

Taken together, these findings highlight the importance of water and flood infrastructure investments as a key component of climate resilience in hinterland communities. Adoption of such infrastructure appears relatively widespread, with a majority of households reporting investments in either water systems or flood management infrastructure. However, the persistence of water access problems and flood-related disruptions indicates that these investments have not yet fully eliminated vulnerability to water-related hazards. In particular, water quality issues remain widespread, and a substantial share of households continues to face disruptions in access to services and production activities during flood events.

From a resilience perspective, these results illustrate the critical role of infrastructure investments in addressing structural vulnerabilities that cannot be mitigated solely through behavioural or household-level practice. At the same time, the results suggest that further investments may be required to consolidate these gains. Expanding water infrastructure coverage, improving water treatment systems, and strengthening transport and drainage infrastructure could significantly reduce the remaining vulnerability of households to water-related hazards. In this sense, water and flood management infrastructure appear to generate strong resilience benefits once implemented, but their effectiveness depends on sufficient coverage and maintenance at the community level.

15.6.2 Renewable energy and internet connectivity (RC2–INT3)

This intervention group focuses on strengthening resilience through improved access to energy and digital connectivity. Reliable energy and access to information are critical enabling conditions for rural livelihoods, influencing household welfare, agricultural productivity, and the ability of farmers to respond to climate risks.

The RDMT captures this intervention group through two main components. The first relates to the adoption of renewable energy technologies, particularly solar energy systems, both for household consumption and for productive uses such as processing

and small-scale agro-enterprises. The second relates to internet access and the use of digital information, including access to weather forecasts, market information, early warnings, and climate-smart agricultural advice.

The adoption dimension of this intervention group is measured through four indicators: the use of renewable energy for household needs (Q10.1), the use of renewable energy for production and processing (Q10.2), access to reliable internet in the community (Q11.1), and the use of internet-based information services on production, markets, climate and early warning systems (Q11.2). Results are assessed through indicators capturing access to reliable energy for household and production needs (Q10.3 and Q10.4) and the extent to which information obtained through digital channels is used in decision-making related to production activities (Q11.3).

Renewable energy adoption for household needs is widespread across the surveyed communities. Overall, 93.6% of households reported using renewable energy sources, primarily solar energy, for household purposes. Adoption levels are particularly high in Region 9, potentially reflecting the limited availability of conventional electricity infrastructure in hinterland communities and the increasing reliance on renewable technologies.

Table 56: Use of renewable energy for household needs

Renewable energy use for household needs	Region 1	Region 9	Total
No	8.82%	4.57%	6.38%
Yes	91.18%	95.43%	93.63%
Total households (N)	340	460	800

However, as shown in Table 57, the use of renewable energy for productive activities remains much more limited. In fact, only 18.8% of households report using renewable energy for productive activities, indicating that while energy access for household consumption is widespread, its use in agricultural production and processing remains relatively limited. Adoption is somewhat higher in Region 9, suggesting that renewable energy systems may be increasingly used to support productive activities in hinterland communities. While this result can be at least partially explained by the low diffusion of agroprocessing activities in the surveyed hinterland communities, it still highlights a key bottleneck for expanding agroprocessing and other energy-dependent livelihood activities.

Table 57: Use of renewable energy for production and processing

Renewable energy for production/processing	Region 1	Region 9	Total
No	75.88%	77.78%	76.91%
Yes	14.71%	22.22%	18.79%
Not applicable	9.41%	0.00%	4.30%
Total households (N)	340	405	745

The analysis of the combined use shows that , when available, renewable energy sources are primarily destined to household use, since only in few cases renewables are used exclusively for production (Figure 69). Combined use for household and production purposes is more widespread in Region 9, where it has been reported by about 23% of the respondents.

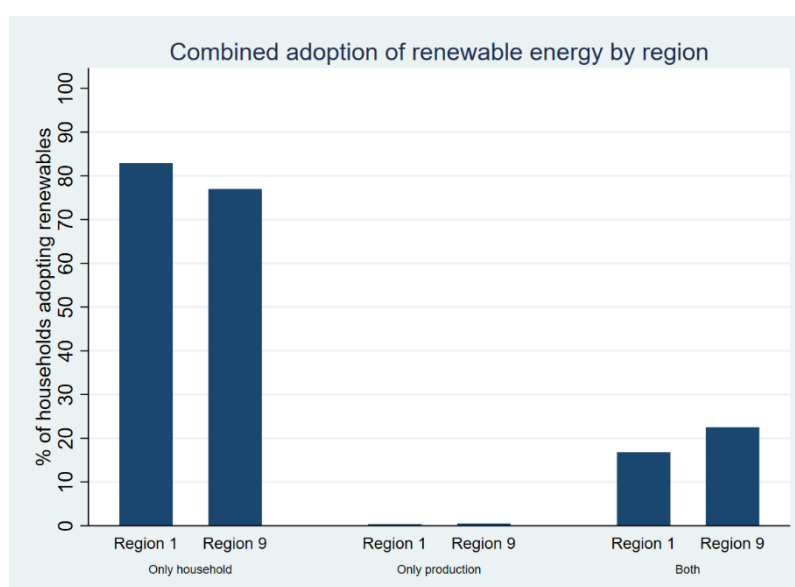


Figure 61: Combined use of renewable energy for household and production purposes

Access to renewable energy is strongly associated with improved energy access for household needs. As shown in Figure 70, households relying on renewable energy sources report substantially higher levels of reliable and affordable energy access than those without such systems. In Region 1, 86% of households using renewable energy report reliable and affordable household energy, compared to only 33% among households without access to renewables. A similar pattern is observed in Region 9, where 81% of households using renewable energy report reliable energy access, compared to 50% among those without renewable sources. These results suggest that

renewable energy systems (primarily solar installations) play an important role in improving basic energy security in the surveyed communities.

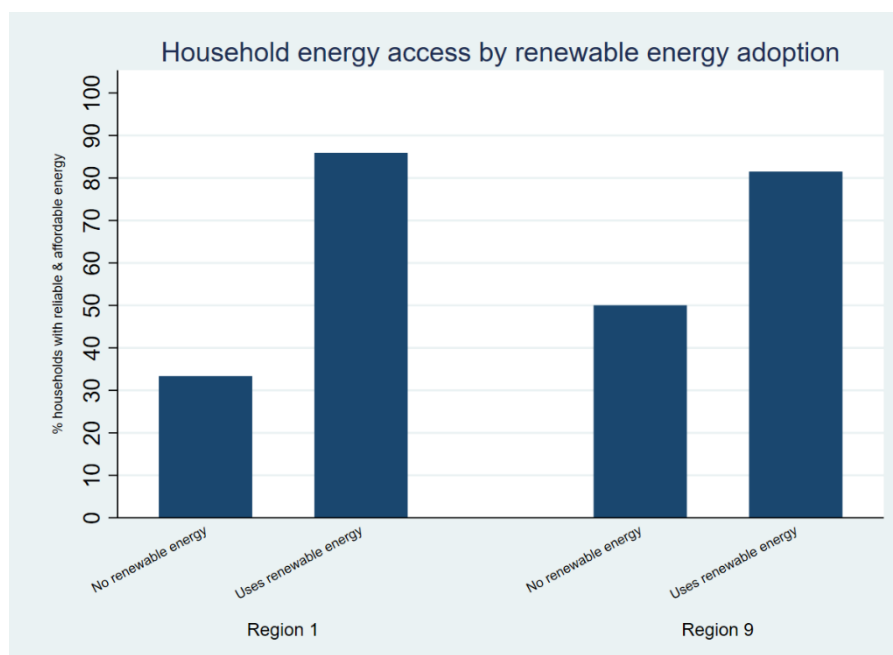
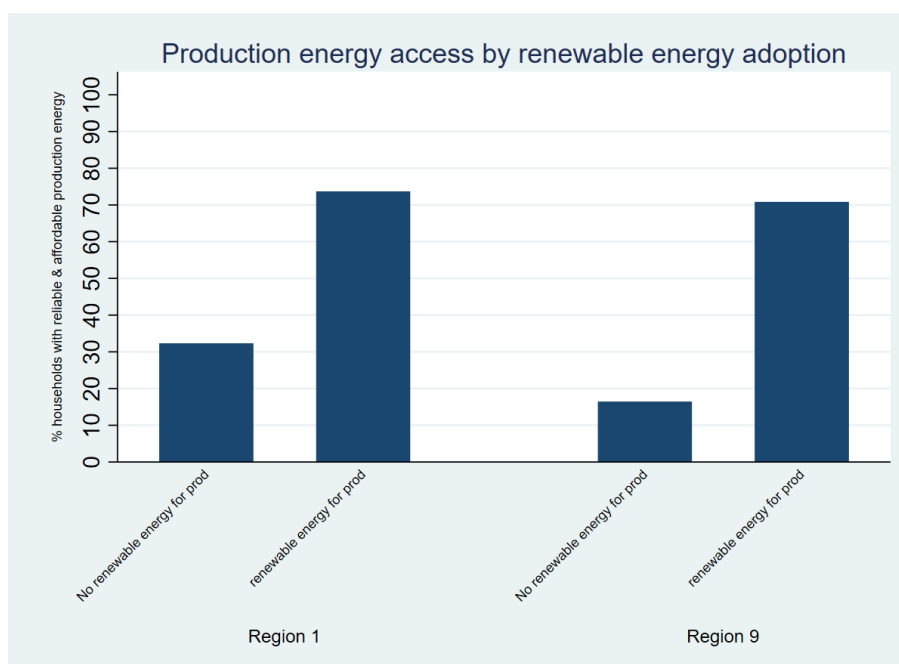


Figure 62: Share of households reporting having access to reliable and affordable energy for household needs,

The same holds true (albeit for fewer respondents) for the relation between access to renewables and energy security and affordability for production needs (Figure 71). IN this case, the relevance of renewables for ensuring energy security for production is even stronger, given that (in the absence of renewable systems) only 17% of households in Region 9 and 32% of households in Region 1 can rely on affordable energy for their production needs.



With regards to internet connectivity, access has expanded significantly in the surveyed communities, particularly in Region 9 where about 90% of the surveyed respondents reported having access (Table 58). However, access to connectivity does not automatically translate into the active use of digital information. In fact, notwithstanding the widespread access to the internet, only 31.6% of households report using the internet to access market, climate, or agricultural advisory information. Moreover, when internet use to access information has been reported, only in 32% of the cases the households reported that the information resulted in useful changes to their decision-making, while 37% found the information of limited value, and 31% of respondents found the information not useful. This suggests that, beyond ensuring basic internet connectivity, significant opportunities remains to strengthen the delivery of effective digital extension and information services leveraging the potential offered by the broad internet access base.

Table 58: Access to reliable internet

Access to reliable internet	Region 1	Region 9	Total
No	27.06%	10.43%	17.50%
Yes	72.94%	89.57%	82.50%
Total households (N)	340	460	800

Table 59: Households reporting use of internet to access climate, early warning, production and market information

Internet used for climate and market information	Region 1	Region 9	Total
No	77.94%	61.30%	68.38%
Yes	22.06%	38.70%	31.62%
Total households (N)	340	460	800

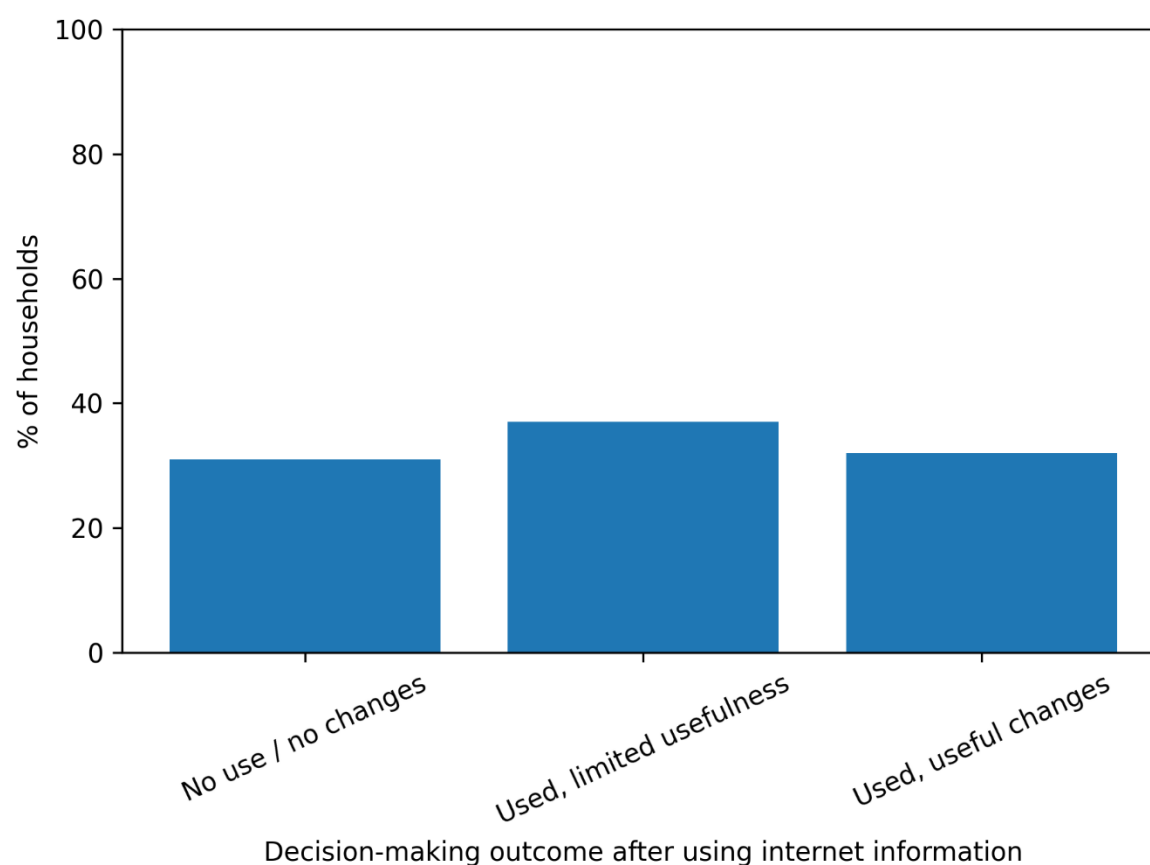


Figure 63: Assessment of usefulness of decision-making based on internet information

17. Summary of Findings and Conclusion

The endline survey results provide evidence that the HESAD project generated tangible improvements in livelihoods, resilience-building and local economic activity across participating hinterland communities in Region 1 and Region 9.

Community-level investments financed under Public and Collective Investment Plans (PCIPs) reached a large share of the population in targeted communities. More than 70 percent of surveyed households reported benefiting from at least one community investment, reflecting the broad reach of project-supported infrastructure and services. These investments included productive infrastructure, processing and storage facilities, and community services designed to strengthen local economic opportunities and improve living conditions. Importantly, the large majority of these investments remain operational after project completion. Around 81 percent of respondents reported that infrastructure created through the project continues to be used, and more than 92 percent indicated that related activities remain functional. This suggests that the investments have been integrated into community livelihoods and that local ownership and management structures have been effective in sustaining the facilities.

The project also generated measurable improvements in household economic conditions. Approximately one quarter of surveyed households reported higher income compared to the situation before the project, with the majority attributing these increases directly to HESAD-supported activities. Although income growth was not universal, the findings indicate that project interventions contributed meaningfully to improving household economic opportunities in a context where livelihoods depend heavily on primary production and where alternative sources of income remain limited.

Business Plans played a central role in driving these income gains. Among households participating in Business Plan groups, income improvements were widely reported. More than four out of five BP participants in Region 1 and more than two thirds in Region 9 reported that participation in these productive investments contributed to higher household income. These results confirm the importance of enterprise development as a pathway for strengthening rural economies and generating economic opportunities in hinterland communities. It is also relevant to note that above-average income effects were reported for shorter-cycle and directly market-oriented activities like agroprocessing (100% reporting income increase), small-scale food enterprises like bakeries / snakettes (100%), shadehouses (84%) and poultry (79%). Considering the significant delays in the delivery of productive investments in the communities, and the limited time available for the full benefits to unfold,

A particularly relevant finding is that, among the 91 respondents for whom information on land size change was collected, more than one third (35.2%) reported that the area they farm had increased compared to the period before HESAD. This pattern suggests that the project may have created incentives or enabling conditions for increased agricultural engagement. In hinterland contexts where access to land (particularly under community/communal arrangements) is relatively less constrained than access to capital or inputs, the expansion of cultivated area may represent the most immediately available pathway for scaling up production. Improved opportunities, group-based support, or stronger production prospects under the project may have translated into greater use of the factor of production that was most accessible (land, particularly under collective and group arrangements) rather than into more input-intensive intensification strategies.

Enterprise performance data further supports the finding on the economic impact of the project. About half of surveyed enterprises reported higher sales compared with the pre-project period, while most of the remaining enterprises reported similar levels of sales. Only a small minority reported declines in sales performance. The reported trends suggest that many enterprises supported through the project have been able to maintain or expand their level of commercial activity. Significantly, growth was more frequently reported by enterprises that had been in operation for longer, thus further confirming the need to continue to support younger enterprises to ensure the full delivery of potential benefits and economic growth.

Employment generation emerges as one of the most significant outcomes of the project, with benefits spreading beyond the direct beneficiaries. Enterprise activities supported under Business Plans generated employment for 232 individuals outside the beneficiary groups, in addition to 88 co-managers engaged in enterprise management and operations. At the same time, PCIPs generated employment opportunities at the community level through infrastructure construction and operation, with more stable employment opportunities generated by plans focused on service delivery or implying continued maintenance and activities. Employment benefits linked to these investments were reported by nearly one third of respondents in Region 1 and almost half of respondents in Region 9. These employment outcomes are particularly significant in the hinterland context, where labour markets remain thin and opportunities outside subsistence agriculture are limited. By creating employment

opportunities through both enterprise development and community investments, the project contributed to diversifying local income sources and strengthening economic resilience.

The employment benefits generated by the project demonstrate strong inclusion of women and young people. Women account for approximately 69 percent of individuals employed outside beneficiary groups, while young people aged 14–35 represent more than 40 percent of the workforce engaged in enterprise activities. Young women in particular constitute the largest share of this group, indicating that the project helped create opportunities for younger generations within rural communities. Another notable feature of the project's impact is the strong participation of Indigenous populations. Nearly all employment opportunities generated through enterprises and community investments benefited Indigenous individuals, reflecting the project's focus on improving livelihoods in Indigenous hinterland communities and supporting locally rooted economic development.

Despite these positive outcomes, the endline survey results also highlight several areas where project on economic activities and income generation were limited, or where important challenges remain. First, as mentioned, improvements in household income were not evenly distributed across the surveyed population. While a significant share of households reported income gains, the majority reported either stable or unchanged income levels. This indicates that the economic benefits of the project were concentrated among specific groups of participants, particularly those directly involved in Business Plans or productive activities.

Second, market access remains constrained in many project areas. A large share of producers reported relying primarily on direct sales to private individuals or to institutional buyers such as schools, while sales through more structured commercialization channels such as traders, cooperatives, or agro-industrial buyers remain relatively limited. This suggests that local value chains remain weak and that opportunities for scaling up production and commercialization are still constrained. Moreover, dependency on the main buyer remains extremely high, given that for more than 50% of respondents, the share going to the main buyer is above 75%. At the same time, this also indicates that the support offered by the project to strengthening village-

level school feeding programmes has contributed to some extent to generating demand for local products.

Third, notwithstanding the project's investment in climate-resilient infrastructure, physical access to markets continues to represent a major challenge in several communities. In Region 1 in particular, many respondents reported travel times of more than one hour to reach market facilities, reflecting the persisting geographical isolation and logistical constraints that characterize hinterland communities. While institutional buyers such as school feeding programmes have helped provide local market outlets in some cases, broader improvements in market connectivity remain necessary.

The project strongly contributed to improvements in food security and nutrition. Dietary diversity among women improved significantly during the project period. At endline, more than 85 percent of women reported consuming at least five food groups during the previous day, meeting the Minimum Dietary Diversity for Women (MDD-W) threshold. In Region 1, this represents a substantial increase compared with baseline levels, indicating that the project's agricultural and livelihood interventions contributed to improved food consumption patterns.

Households in the project areas remain highly exposed to climate-related shocks. A large share of respondents reported experiencing prolonged dry spells, floods, and other climate stresses during the previous two years. These findings highlight the continued importance of strengthening climate resilience in agricultural production systems and rural livelihoods in the hinterland regions.

Despite this challenging risk environment, the resilience analysis shows clear evidence of progress. Using the Resilience Design and Monitoring Tool (RDMT) and the Simplified Resilience Index (SRI), the analysis finds that household resilience improved substantially during the course of the project. 80% of households experienced an increase in resilience between the midline and endline surveys. The distributional analysis further indicates that improvements were widespread across the population and particularly pronounced among more vulnerable households.

The resilience trajectory tracked over time between the baseline, mid-term /outcome and endline survey shows a temporary deterioration at midline, followed by a strong

recovery and improvement by endline. The midline survey was conducted in the aftermath of the COVID-19 pandemic and associated economic disruptions, which likely contributed to the temporary decline observed during that period. By endline, however, resilience levels had not only recovered but exceeded baseline levels for the majority of households, indicating that the project interventions contributed to strengthening households' ability to manage risks and adapt to shocks.

Moreover, the data show a reduced severity of impacts from adverse some types of climate events. For long dry seasons and floods, the share of households reporting high severity impacts appears to decline at endline compared to the mid-term, while the proportion reporting moderate impacts increases. This pattern indicates that, although these hazards continue to affect a large number of households, their perceived intensity has decreased over time. Furthermore, comparing the endline with the midterm data, there was a substantial increase in the share of households reporting no climate-related losses for their crop or livestock production. With regard to crops, while only 14% of households had reported "No losses" at midline, at endline this percentage had increased to 35.6% (32.6% in Region 1, and 37.6% in Region 9). A similar trend was observed for livestock, for which the percentage of no losses at midline was 39.8%, while at endline it had increased to 54% (51.4% in Region 1, and 56.5% in Region 9). Notwithstanding these improvements, climate-related losses of more than 50% of the production were still reported by 10% of the households in the case of livestock, and 30.8% of the households in the case of crops.

The RDMT analysis further suggests that the project was particularly successful in promoting adoption of resilience-enhancing practices including the participation in producer groups, diversification of livelihoods, improved nutrition practices, and investments in infrastructure that reduce climate risks. While some resilience outcomes may take longer to fully materialize, the evidence indicates that the project succeeded in establishing the foundations for sustained resilience improvements.

Importantly, the resilience benefits, as assessed through the RDMT, were equally shared by female-headed and male-headed households. At the same time, households that declared having benefited from both Business Plans (BP) and PCIPs consistently achieve higher scores across the adoption, results, and RDMT Overall indices compared to households supported only through PCIPs. This gap is particularly

pronounced for the adoption dimension but remains clearly visible for results, indicating that combined planning instruments generate both immediate improvements in practice uptake and stronger medium-term resilience outcomes. Overall, the RDMT Overall index reaches approximately 0.53 among households benefiting from both BP and PCIP, compared to roughly 0.45 among households supported only through PCIP. This difference suggests that the combination of productive investments and community-level infrastructure creates reinforcing effects that enhance households' capacity to adopt improved practices and translate them into resilience outcomes.

This finding points to strong complementarities between PCIP and BP interventions, and suggests that stronger convergence and coordination between PCIP and BP instruments can generate important leverage effects. Aligning infrastructure investments with livelihood development strategies appears to amplify the effectiveness of both interventions. Future programming in hinterland contexts may therefore benefit from more clearly designing these instruments as mutually reinforcing components within an integrated local development framework, rather than as parallel intervention streams. Finally, the results also highlight the importance of ensuring that households benefiting initially from PCIP investments are progressively linked to livelihood and business development support. Such sequencing may help transform initial infrastructure gains into sustained economic and resilience outcomes.

Moreover, the adoption of climate-smart and adaptive agricultural practices remained low, suggesting that technical or investment barriers continue to constrain uptake. In addition, while economic activities supported by the project generated important benefits, the scale of income improvements remains modest relative to the structural constraints faced by hinterland economies, including limited market access and high transport costs.

Overall, the endline survey findings suggest that the HESAD project contributed to strengthening rural livelihoods, expanding economic opportunities, and improving food security in participating communities. Through a combination of community infrastructure investments, support to productive enterprises, and agricultural development activities, the project generated tangible benefits for households while also supporting employment creation and local economic development. At the same time, the persistence of climate risks and structural constraints in remote hinterland

areas underscores the need for continued investment in resilient production systems, local value chains, and inclusive rural economic development.

Appendix

Questionnaire

Photos

Logical framework

Appendix 4

The RDMT and SRI Questionnaires

Table A4.1: SRI questions and scoring system (from Region 1 baseline)

SRI question	Scoring
Have one or more household members participated in the formulation of CPDPs and P/CIPs?	Yes: 1 No: 0
Is at least one family member participating in a producer group with an adopted business plan that has increased household incomes?	Yes: 1 No: 0
Does the household use the same or an increased number of crops and animal varieties and wild species as food or income-generating sources compared to use at project start?	Yes: 1 No: 0
Has the household adopted a climate-smart production system, including measures for the sustainable management of soils and water, in at least one quarter (1/4) of its cultivated land?	Yes: 1 No: 0
Does the household have access to a secure water source (rainwater harvesting and micro-irrigation) for at least one fifth (1/5) of its cultivated land (Region 1)?	Yes: 1 No: 0
In the last years, has the family used the internet to access climate, weather, or market information and used this information to make decisions on crops and varieties to cultivate and time of planting?	Yes: 1 No: 0
Does the family have access to a renewable energy source for household and production needs?	Yes: 1 No: 0
Do women and children aged 6–23 months in the household consume a diet with a minimum acceptable level of dietary diversity?	According to MDDW. Above minimum diversity: 1. Below minimum: 0

The RDMT Questionnaire

The RDMT matrix was constructed concurrently with the preparation of the mid-term survey questionnaire, according to the process described in the RMDT How To Do Note. The adoption and monitoring questions related to each risk cluster were subsequently derived from the analysis of the risks, vulnerabilities, interventions and expected resilience improvements identified in the RDMT matrix. The list of questions is presented below, grouped by the two main risk cluster that were considered relevant for the HESAD project's theory of change. Given the contextual differences and the prevailing activities in Region 1 and Region 9, some adaptations were made to the overall questionnaire so as to reflect local specificities while maintaining comparability. For the sake of brevity, the list of the specific practices or options presented for each question are provided in separate tables.

Table A4.2: RDMT questions and related scores

Risk cluster	Resilience capacities clusters	Question type	Question	Scores
Risk Cluster 1: Low climate risk awareness planning and action capacities for mitigating and spreading risks	RC1 – INT1: The households are part of communities with collective capacities in planning their development and implementing corporative adaptive actions	Adoption	Q1.1 Have one or more household members participated in the development or updating of a community development plan, village investment plan or similar the last 12 months?	No:0 Yes: 1
		Adoption	Q1.2 As part of this planning process, did the community receive training in climate change and what can be done to reduce the impacts from climate events on the livelihoods of the community?	No: 0 Yes: 1
		Results	Q1.3 Were actions related to reducing impacts from climate events such as floods, saltwater intrusion or periods with unusual high temperatures, considered in this plan?	No: 0 Yes but few and insufficient: 1 Yes: 2

Risk cluster	Resilience capacities clusters	Question type	Question	Scores
	RC1 – INT2: Households have increased their income by participating in a producer group, despite adverse climate events	Adoption	Q2.1 Are one or more household members participating in a community or producer group with an adopted business plan?	No: 0 Yes: 2
		Results	Q2.2 Has the business plan contributed with an increase in the household incomes in the last two years (24 months)?	No: 0 Yes but only limited increase: 1 Yes: 2
	RC1 – INT2: The households have diversified their livelihood streams, spreading risks and suffering less total loss in incomes and access to food in case of shocks	Adoption	Q3.1 Does your household use the same or an increased number of crops and animal varieties and wild species as food or income generating source compared to 2 years (24 months) ago?	No: 0 Yes: 2
		Results	Q3.2 Over the last 2 years (24 months), did your household have to reduce the food you consume due to lack of access to food and for how long time?	Yes, more than one month: 0 Yes but less than one month: 1 No: 2
	RC1 – INT3: The household consumes a diversity of nutritious food	Adoption	4.1 Has your household made changes to the food you consume the last 2 years (24 months) to eat more nutritious food?	No: 0 Yes: 2
		Results	4.2 Measured through the MDDW	MDDW < 4: 0 MDDW = 4: 1 MDDW > 5: 2
Risk Cluster 2: Increased frequency and severity of flood events, increasing temperatures and occurrence of dry spells	RC2 – INT1: The households and communities have adopted climate smart livestock practices in integrated farming systems, preventing losses of more than 20% due to climate	Adoption	5.1 The last 2 years (24 months), have you adopted or are you participating in a community or producer group that has adopted climate-smart production practices or techniques?	No: 0 Yes: not scored, filter for next question

Risk cluster	Resilience capacities clusters	Question type	Question	Scores
	shocks [<i>for livestock producers only</i>]			
		Adoption	5.2 If yes, what are these practices? (*)	No practices: 0; 1 or two practices: 1; 3 or more practices: 2
		Results	5.3 Over the last 2 years (24 months) have your household or the community group you participate in experienced any losses in your chicken, pig, fish or cattle production due to climate events (e.g. floods, heatwaves/high temperatures or prolonged dry seasons)?	Yes, more than 20% loss of animals/production : 0 Yes, less than 20% of loss of animals/production : 1 No: 2
	RC2 – INT1: The households and communities have adopted climate smart cultivation practices in integrated farming systems, preventing losses of more than 20% of crops and/or agroforestry produce due to climate shocks [<i>for crop and agroforestry producers only</i>]	Adoption	6.1 The last 2 years (24 months), have you adopted or are you participating in a community crop producer group that has adopted climate-smart crop production practices or techniques?	No: 0 Yes: not scored, filter for next question
		Adoption	6.2 If yes, what are these practices? (*)	No practices: 0; 1 or two practices: 1; 3 or more practices: 2
		Results	6.3 Over the last 2 years (24 months) have your household or the community group you participate in experienced	Yes, more than 20% loss of crop production: 0 Yes, less than 20% of loss of crop

Risk cluster	Resilience capacities clusters	Question type	Question	Scores
			any losses in your crop production due to climate events (e.g. floods, heatwaves/high temperatures or prolonged dry seasons)?	production: 1 No: 2
	RC2 – INT2: The households and communities have adopted climate adaptation practices in postharvest storage and processing, preventing post-harvest losses of more than 20% due to climate shocks	Adoption	7.1 Over the last 2 years (24 months), have you adopted or are you participating in a community producer group that has adopted climate adaptation practices in post-harvest storage and processing?	No: 0 Yes: not scored, jump to next question
		Adoption	7.2 If yes, what are these practices? (*)	No practices: 0 1 or two practices: 1 3 or more practices: 2
		Results	7.3 Over the last 2 years (24 months) have your household or the community group you participate in experienced post-harvest losses in your agricultural products?	Yes, more than 20% loss: 0 Yes, but less than 20% loss: 1 No: 2
	RC2 – INT3. The communities and households have sufficient water of adequate quality for household needs throughout the year	Adoption	8.1 Over the last 2 years (24 months), has your community invested in rainwater harvesting or other water infrastructures that have improved your households access to water?	No: 0 Yes: 2
		Results	8.2 Over the last 2 years (24 months), has your household experienced lack of water of good quality for household needs?	Yes, lack of water for more than 1 month: 0 Have water but not of good quality: 1 No: 2

Risk cluster	Resilience capacities clusters	Question type	Question	Scores
	RC2 – INT3. The communities and households have enhanced capacities to manage flood waters	Adoption	9.1 Over the last 2 years (24 months), has there been investments in drainage and bridges in your community to ensure crossing points of flood waters and people's access to important local services (education, health, food markets, etc.)?	No: 0 Yes: 2
		Results	9.2 Over the last 2 years (24 months), has your household experienced flooding of your house causing loss of assets?	Yes: 0 No: 1
		Results	9.3 Over the last 2 years (24 months), has your household not been able to reach important local services or your production activities due to lack of bridges in your community?	Yes: 0 No: 1
	RC2 – INT4. The households and communities have access to reliable renewable energy sources	Adoption	10.1 Do you use a renewable energy source (e.g. solar panels) for your house?	No: 0 Yes: 1 Yes (and next question N/A): 2
		Adoption	10.2 Do you and/or the producer group you or a member of your household participate in use a renewable energy source for production and processing activities?	No: 0 Yes: 1 N/A (and previous question yes): 0
		Results	10.3 Does your household have access to a reliable and affordable energy source for household needs?	No: 0 Yes: 1
		Results	10.4 Does your household have access to a reliable and affordable energy source for production needs?	No: 0 Yes: 1

Risk cluster	Resilience capacities clusters	Question type	Question	Scores
	RC2 – INT4. The households and communities are using the internet to access information on weather forecast and early warnings and advice on climate smart farming practices	Adoption	11.1 Do you have access to a reliable internet in your community center?	No: 0 Yes: 1
		Adoption	11.2 In the last 12 months, has your household used the internet to access information on markets, weather forecast and early warnings and advice on climate smart farming practices?	No: 0 Yes: 1
		Results	11.3. Over the last 2 years (24 months) have you used information on markets, weather forecast and early warnings and advice on climate smart farming practices to take decision on your farming activities, and how useful have these changes in activities been (e.g. crops and varieties to cultivate, time of planting, farming practices, protection of animals and crops from floods)?	No: 0 Yes, but the usefulness of the changes was limited: 1 Yes, and the changes in activities were useful: 2

(*) See the list of practices for each question presented in the following tables.

Table A4.3: List of practices presented as options for the RDMT questions

RDMT question	Practices
[For livestock producers] 5.1 The last 2 years (24 months), have you adopted or are you participating in a community or producer group that has adopted climate-smart production practices or techniques?	• Placement of chicken pens on higher grounds to protect from floods • Placement of beehives on higher grounds and under shade • Placement of cattle/goat corrals on higher grounds to protect from floods • Secure access to cattle/goat sheds or tree coverage for shade • Use of flood warning information and having a contingency plan, facilities, and a buffer of feed in place to move cattle • Having a fire contingency plan to move cattle or beehives to a safe place in case of fire • Rangeland management to avoid overgrazing (e.g. herd size management and rotational grazing systems; if fencing is used, wildlife passage corridors are ensured) • Local fodder production and storage to build a buffer for times of shortage • Community veterinary services are available • Ensuring proper circulation of air in pens, sheds, and corrals to minimize diseases and ensure animal welfare • Rooftop (pens and sheds) rainwater harvesting for animal consumption • Rainwater harvesting in ponds • Protection of vegetation cover in catchments to protect important water sources • Use of solar pumping of water for cattle, goats, pigs, or poultry • Use of species less dependent on external expensive feed, more resistant to diseases, and adapted to local climate conditions • Recycling/composting manure into crop farming, providing an additional income source • Placement of fish ponds close to freshwater sources • Protection of vegetation cover in catchments to protect water sources for fish ponds • Use of native fish species to avoid invasive species • Use of fish species adapted to local heat conditions • Use of fish species that can feed on locally available fodder sources • Recycling water from fish ponds for crop production • Avoid overfeeding of fish • Avoid the use of antibiotics in fish farming • Other (specify)
[For crop producers] 6.1 The last 2 years (24 months), have you adopted or are you participating in a community crop producer group that has adopted climate-smart crop production practices or techniques?	• Shade houses for vegetables • Placement of shade house on high grounds to avoid floods • Cultivation in raised beds and with drainage to protect from floods and salt water intrusion • Reducing flammable vegetation around the shade house to protect from fires • Placement of shade house close to structures that have rooftop rainwater harvesting for irrigation • Solar pumping of water • Drip irrigation • Recycling of nutrition-rich household grey water into the shade house production • Rainwater harvesting in ponds for crop production • Protection of vegetation cover in catchments to protect water sources • Soil improvement and fertility management practices (mulching, raised beds, compost and manure, soil coverage, integration of trees for shade, rotation with or integration of nitrogen-fixing crops, minimum soil disturbance/tillage, and no use of fertilizer) • Integrated pest management (IPM) techniques to reduce or avoid the use of chemical pesticides (intercropping and crop rotation, preparation and use of bio-pesticides, air ventilation, mesh, insect traps, natural predators, pest- and disease-tolerant varieties, push-and-pull strategies, continued monitoring and observation, and application of chemical pesticides only as a last resort and in precise volumes) • Collaboration with livestock producers to access manure

	• Ensuring arrangements are in place for collection, proper disposal, or recycling of plastic and mesh from shade houses when the cover needs to be renewed • Agroforestry systems with high diversity • Other (specify)
As part of the production activity, you started with support from HESAD, what practices or measures, if any, did you implement to protect the production activity from climate events such as floods, long dry periods without rain, periods with high temperature?	From outcome / mid-term • Safe storage facilities on high grounds to protect from floods • Cold storage for animal products and other perishable products • Use of construction materials that can withstand heavy rainfall • Rooftop rainwater harvesting and secure access to complementary water sources if needed • Use of solar panels and secure access to complementary energy sources if needed • Use of recyclable or biodegradable plastic, or alternative materials for packaging and storage (avoiding single-use plastics) • Proper waste management, including composting and recycling of organic material • Proper waste management from slaughtering (e.g. composting in windrow piles with layered slaughter waste) • Proper wastewater management, including mechanical and biological treatment and, when possible, recycling • Maintenance arrangements in place for infrastructure and equipment (roles and responsibilities, financing) • Proper bookkeeping, accounting, and cash-flow management • Other From endline • Placing infrastructures on higher grounds protected from floods (e.g. chicken pens, pig enclosures, cattle corrals, beehives, storage and processing facilities, shade houses, bakeries) • Ensuring animals have access to shade from sheds or tree cover • Use of animal species adapted to local climate conditions • Using locally produced animal feed • Keeping a storage of animal feed for periods of floods or droughts • Rainwater harvesting and storage from rooftops for animal or crop production (pens, sheds, greenhouses, processing and storage facilities) • Rainwater harvesting in ponds • Use of drip irrigation • Using renewable energy sources such as solar panels • Recycling/composting manure into crop farming • Use of soil cover in crop farming to keep the soil moist • Use of compost • Use of intercropping to control pests and diseases • Use of bio-pesticides to control pests and diseases • Farming on lower grounds during prolonged dry seasons • Providing shade for animals and keeping corrals on higher grounds outside flood-risk areas • Other

Mapping between the RDMT and the SRI

As mentioned in the report, the SRI questionnaire items were only included in the Region 1 baseline. To permit comparisons on this index across different points in time, the SRI was recalculated drawing on the corresponding RDMT questions from the mid-term and endline questionnaires. The mapping between the RDMT questions and the SRI scores is presented in the following table.

Table A4.4: Mapping between the RDMT and the SRI

SRI question	Corresponding RDMT <u>survey</u> question	Scoring
Have one or more household members participated in the formulation of CPDPs and P/CIPs?	SECTION 11: RESILIENCE INDEX/11.5 Have one or more household members participated in the development or updating of a community development plan, village investment plan or similar within the last 2 years?	Yes: 2 No: 0
Is at least one family member participating in a producer group with an adopted business plan that has increased household incomes?	SECTION 11: RESILIENCE INDEX/11.8 Are one or more household members participating in a community or producer group with an adopted business plan? SECTION 11: RESILIENCE INDEX/11.9 Has the implementation of the business plan contributed to an increase in the household incomes in the last 2 years?	Yes & Yes: 2 Yes & No: 1 No & Yes: 1 No & No: 0
Does the household use the same or an increased number of crops and animal varieties and wild species as food or income-generating sources compared to use at project start?	SECTION 11: RESILIENCE INDEX/11.10 Does your household use the same or an increased number of crops, animal varieties and wild species as food or income generating source compared to 2 years ago?	Yes: 2 No: 0
Has the household adopted a climate-smart production system, including measures for the sustainable management of soils and water, in at least one quarter (1/4) of its cultivated land?	SECTION 11.A (Crops) and SECTION 11.B (Livestock): In the last 2 years, have you adopted/participated in a community or producer group using climate-smart practices?	Yes: 2 No: 0
Does the household have access to a secure water source (rainwater harvesting and micro-irrigation) for at least one fifth (1/5) of its cultivated land (Region 1)?	SECTION 11: RESILIENCE INDEX/11.14 In the last 2 years, has the household experienced lack of good quality water for household needs?	No: 2 "Have water but not good quality": 1

		"Yes lack of water for more than 1 month": 0
In the last years, has the family used the internet to access climate, weather, or market information and used this information to make decisions on crops and varieties to cultivate and time of planting?	SECTION 11: RESILIENCE INDEX/11.21 Do you have access to a reliable internet in your community center? SECTION 11: RESILIENCE INDEX/11.22 In the last 12 months, has your household used the internet to access information on markets, weather forecast and early warnings and advice on climate smart farming practices?	Yes & Yes:2 Yes & No: 1 No & Yes: 1 No & No: 0
Does the family have access to a renewable energy source for household and production needs?	SECTION 11: RESILIENCE INDEX/11.18 Do you use a renewable energy source (e.g. solar panels) for your house? SECTION 11: RESILIENCE INDEX/11.19 Do you or the producer group you [or a member of your household] participate in use a renewable energy source for production and processing activities?	Yes & Yes:2 Yes & No: 1 No & Yes: 1 No & No: 0
Do women and children aged 6–23 months in the household consume a diet with a minimum acceptable level of dietary diversity?	MDDW: SUB-SECTION 12A: QUESTIONS ON DIETS/12A.1 to 12.A11	MDDW>=5: 1 Otherwise: 0

Guyana

Hinterland Environmentally Sustainable Agricultural Development Project **Project Completion Report**

Appendix 4: Summary of the amendments to the loan agreement

Mission Dates: 21/10/2025 - 29/10/2025
Document Date: 24/06/2026
Project No. 2000001472
Report No. 7531-GY
Loan ID 2000001704

Latin America and the Caribbean
Programme Management Department

This document will be publicly disclosed unless there is written dissent on its disclosure by the Borrower at the time of this document submission to IFAD or no later than the project closing date.

Appendix 4: Summary of the amendments to the loan agreement

Level-2 Modification 1	Borrower request, Reallocation (Among categories), Logframe, Implementation arrangements, Project costs,	07/10/2020
Level-2 Modification 2	Borrower request, Extension, Reallocation (Among categories), Logframe, Project area,	12/12/2022
Level-2 Modification 3	Borrower request, Extension,	22/03/2024
Level-2 Modification 4	Borrower request, Extension,	21/03/2025

1st restructuring (October 2020)

Description of changes:

In Region 9 project implementation will be supported by District-level organizations (including the North Rupununi District Development Board, the Kanuku Mountain Community Representative Group, and the South Rupununi District Council). In Region 1 implementation will be supported by a NGO or firm.

Management of the Investment Fund by the MoA's Agriculture Sector Development Unit (ASDU), with the evaluation of applications to the Fund by an independent Assessment Panel, and other measures to address accountability (external annual audit).

In Region 1, a shift in emphasis from Value Chain Action Plans (VCAPs) to Community Production Development Plans (CPDPs) mirroring the approach originally proposed for Region 9 and thus simplifying and unifying the overall intervention strategy in both regions.

Completion of the State of Food and Agriculture Study from a disbursement condition to a timeline completion condition of June 2021. This allows the project to proceed with procurement and investments in Region 1 while this activity is ongoing.

Expansion of number of targeted communities from approximately 80 villages to approximately 89 villages. The increase is expected to stem from an open call for proposals for COVID19 Recovery Public Investment Projects. Despite the increase in targeted communities, the number of beneficiary households has been reduced, from 6000 to 3500 households. Broadly, this responds to a review of the assumption of the PDR that all households in a community would benefit from community investment plans, to a less ambitious assumption that only 60% of them would benefit. Further changes to the logical framework targets (including a comparison of original versus revised targets) are included in Annex 4 of the attached Restructuring Proposal.

The inclusion of individual agri-entrepreneurs as beneficiaries of services offered by the project (training, mentoring, technical support etc.), with access to financing facilitated by financial institutions (and not via the project's Investment Fund).

Incorporation of accountability mechanisms (such as a public call-in radio program, annual participatory workshops and grievance and redress mechanisms) to strengthen stakeholder feedback.

A reallocation of Categories of Eligible Expenditures as per the table attached (Updated Project Cost Tables).

Expense Category	Original Allocation	Spending to Date	Budget Remaining (for reallocation)	Revised Allocation
Vehicles & Equipment	\$ 170,000	\$ 72,217	\$ 97,783	\$ 121,941
Training	\$ 550,000	\$ -	\$ 550,000	\$ 533,400
Consulting Services	\$ 3,120,000	\$ 70,940	\$ 3,049,060	\$ 2,396,589
Grants (for Sub-Projects)	\$ 2,880,000	\$ -	\$ 2,880,000	\$ 3,941,196
Salaries and operating expenses	\$ 940,000	\$ 189,338	\$ 750,662	\$ 1,134,380
Unallocated	\$ 800,000		\$ 800,000	
TOTAL	\$ 8,460,000	\$ 332,494	\$ 8,127,506	\$ 8,127,506

2nd restructuring (December 2022)

Description of changes:

Extension of implementation period. The 12-month extension will allow the project to stabilise and set the basis for the current ongoing activities to deliver more impactful and sustainable results, as well as to increase investments and outreach.

Change in log-frame targets: The extension proposal revises the project's log-frame targets upwards and reduces project cost-per-beneficiary. The extension will allow for an additional 63 Community plans, 94 Business Plans and 30 Training Plans, which all have mainstreamed resilience building interventions (see examples in paragraph 17). HESAD's outreach will be increased to 40,000 people at the end of the extension phase (detailed new log-frame targets available in Section 8 of Government Proposal attached).

Summary of changes in log-frame targets

	Achieved to date	Current log-frame target	Increased log-frame target
Public/Community investment Plans	71	89	134
Business Plans	106	200	200
Training Plans	20	50	50
Outreach (Number of persons)	11,871 ^[1]	10,000	40,000

HESAD will consider a limited number of new proposals from communities that have not been able to access project services to date, or that have submitted proposals and are awaiting evaluation. The consideration of new proposals will allow the PMU to integrate lessons learned from project activities to date, including recommendations from recent supervision missions. During the extension phase, the project will consider investments that strengthen community resilience to extreme weather events, including the establishment of storage bonds, germplasm banks and Automated Weather Stations.

Pilot in new geographical areas: The Government proposes to pilot the HESAD approach in four communities in hinterland regions 7 & 8, targeting 546 households (allocating USD 100 000 of IFAD resources). Regions 7 & 8 presents a more complex environment than Regions 1 & 9 (where HESAD currently works), generally ce government's extension proposal suggests that this is a stepping stone to a wider upcoming programme of support to agricultural communities characterized by a higher degree of remoteness and inaccessibility, a dependence on artisanal gold mining for cash income, and the absence of significant development programming despite high levels of poverty. Expansion in these regions will be implemented with existing PMU staff and will take advantage of the agreements signed with MoA technical agencies to provide technical support to investments during the extension period and beyond..

Reallocation: The Government of Guyana is requesting a reallocation of categories as per the table below:

HESAD Budget Reallocation by source: IFAD Loan 2000001704

Cat	USD'000	Current Allocation	Disbursed	Pending WA	Reallocation	New allocation	%
	<i>Initial deposit Designated Account</i>	-	603 000	1 672 995	-	-	
I	Vehicles and Equipments	194 158	145 295	839	711 273	905 431	366%
II	Training	533 400	121 643	17 841	694 863	1 228 263	130%
III	Consultancy Services	1 967 529	78 371	-	(1 533 315)	434 214	-78%
IV	Grants (for Sub-projects)	3 941 196	1 354 886	136 283	601 900	4 543 096	15%
V	Salaries and operating expenses	1 323 717	585 190	32 269	(474 721)	848 996	-36%
Total		7 960 000	2 285 384	187 233	-	7 960 000	

% Recurring costs

17%

11%

3rd restructuring (March 2023)

Description of changes:

Extend the project implementation period by **six months from the 31st of March 2024 to the 30th of September 2024**, with a subsequent close-out period of six months. This would allow the PMU to complete the delayed provision of training and technical support to beneficiary communities, and to complete measures identified in the project's sustainability and exit plan. This includes transitioning oversight of community projects and HESAD field staff to the agencies of the Ministry of Agriculture, and central PMU staff to the Hinterland Development Unit. The extension entails no changes to project financing nor to the development objective. The extension would imply one additional (hybrid) supervision mission with no further budget implications to IFAD.

4th restructuring (March 2025)

Description of changes:

5-month extension to the financial closure date for HESAD with a new closing date of 31st August 2025, to allow for an orderly financial and technical closure.

The extension of the financial closure date would allow to i) collect M&E data through the endline survey in order to measure results of the project, review and update the Logical Framework and elaborate the PCR; ii); Include endline survey expenditure as part of the winding up expenditures to be reported on the closing period of the final audit report

Guyana

Hinterland Environmentally Sustainable Agricultural Development Project **Project Completion Report**

Appendix 5: Actual project costs

Mission Dates: 21/10/2025 - 29/10/2025
Document Date: 24/06/2026
Project No. 2000001472
Report No. 7531-GY
Loan ID 2000001704

Latin America and the Caribbean
Programme Management Department

This document will be publicly disclosed unless there is written dissent on its disclosure by the Borrower at the time of this document submission to IFAD or no later than the project closing date.

Appendix 5: Actual project costs

a. Table of initial/amended projected disbursements and actual disbursements, by Financier.

Annual expenditures by financier and by year (in USD)

	PGI	PGI	PGI	PGI	PGI	PGI	IFR Q4 2023	IFR Q4 2024	IFR Q3 2025	IFR Q3 2025	FA & PR	Amended FA and IFR Q3 2025	
Financier	2017	2018	2019	2020	2021	2022	2023	2024	2025	Executed	Approved (Original)	Approved (Updated)	%
IFAD Loan 2000001704	-	74 000	93 000	171 000	781 000	2 059 000	2 855 168	1 906 776	-	7 957 474	7 960 000	7 960 000	100%
IFAD Grant 2000001705	-	11 000	59 000	60 000	140 000	6 000	-	-	76 675	352 642	500 000	500 000	71%
Government	10 000	70 000	50 000	80 000	93 000	168 000	558 613	726 163	272 192	2 018 219	2 430 000	2 426 000	83%
Beneficiaries	-	-	-	-	9 000	14 000	17 043	227 222	269 786	612 808	265 000	265 000	231%
TOTAL	10 000	155 000	202 000	311 000	1 023 000	2 247 000	3 430 825	2 860 160	618 654	10 941 143	11 155 000	11 151 000	98%
Estimated expenditures as per Design (PDR)	1 567 000	2 606 000	3 594 000	2 234 000	483 000	658 000	-	-	-				
% Executed	1%	6%	6%	14%	212%	341%							

b. Table of initial/amended budgeted amounts and actual expenditures, by Component

Annual expenditures (Loan) by component and year (in USD)

	IFR Q3 2025	IFR Q3 2025	Amended FA and IFR Q3 2025	
Components	Executed	Approved (Original)	Approved (Updated)	%
Component 1 - Strengthening of C & PG	1 083 842	2 150 000	2 695 000	40%
Component 2 - Imp of Investment Plans	5 486 883	4 755 000	3 941 000	139%
Component 3 - Project Management & Coordination	1 386 750	1 055 000	1 324 000	105%
Total	7 957 474	7 960 000	7 960 000	100%

Annual expenditures (Grant) by component and year (in USD)

	IFR Q3 2025	IFR Q3 2025	Amended FA and IFR Q3 2025	
Componentes	Executed	Approved (Original)	Approved (Updated)	%
Component 1 - Strengthening of C & PG	206 227	247 000	247 000	83%
Component 2 - Imp of Investment Plans	-	-	-	
Component 3 - Project Management & Coordination	146 415	253 000	253 000	58%
Total	352 642	500 000	500 000	71%

c. Table of initial/amended budgeted amounts and actual expenditures, by Cost Category

Annual expenditures (Loan) by category and year (in USD)

	PGI	PGI	PGI	PGI	PGI	PGI	IFR Q4 2023	IFR Q4 2024	IFR Q3 2025	IFR Q3 2025	FA & PR	Amended FA and IFR Q3 202	
Categories	2017	2018	2019	2020	2021	2022	2023	2024	2025	Executed	Approved (Original)	Approved (Updated)	%
Category 1 - Vehicle Equipment	-	13 000	13 000	48 000	15 000	104 000	159 331	389 772	-	743 084	170 000	906 000	82%
Category 2 - Training	-	-	-	2 000	56 000	184 000	175 559	280 109	-	697 038	550 000	1 228 000	57%
Category 3 - Consultancy Services	-	1 000	-	4 000	45 000	34 000	57 759	20 409	-	179 781	2 620 000	434 000	41%
Category 4 - Grants (Sub-Projects)	-	-	-	-	447 000	1 416 000	2 290 891	1 216 485	-	5 370 464	2 880 000	4 543 000	118%
Category 5 - Salaries & Operations	-	60 000	80 000	116 000	217 000	322 000	171 628	-	-	967 107	940 000	849 000	114%
Unallocated	-	-	-	-	-	-	-	-	-	-	800 000	-	-
Total	-	74 000	93 000	170 000	780 000	2 060 000	2 855 168	1 906 776	-	7 957 474	7 960 000	7 960 000	100%

Annual expenditures (Grant) by category and year (in USD)

	PGI	PGI	PGI	PGI	PGI	IFR Q4 2022	IFR Q4 2023	IFR Q4 2024	IFR Q3 2025	IFR Q3 2025	IFR Q3 2025	Amended FA and IFR Q3 202	
Categories	2017	2018	2019	2020	2021	2022	2023	2024	2025	Executed	Approved (Original)	Approved (Updated)	%
Category 1 - Vehicle Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-
Category 2 - Training	-	-	-	-	-	-	-	-	-	-	-	-	-
Category 3 - Consultancy Services	-	11 000	59 000	60 000	140 000	6 227	-	-	76 675	352 642	500 000	500 000	71%
Category 4 - Grants (Sub-Projects)	-	-	-	-	-	-	-	-	-	-	-	-	-
Category 5 - Salaries & Operations	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	11 000	59 000	60 000	140 000	6 227	-	-	76 675	352 642	500 000	500 000	88%

Guyana

Hinterland Environmentally Sustainable Agricultural Development Project **Project Completion Report**

Appendix 6: EFA/Value for money

Mission Dates: 21/10/2025 - 29/10/2025
Document Date: 24/06/2026
Project No. 2000001472
Report No. 7531-GY
Loan ID 2000001704

Latin America and the Caribbean
Programme Management Department

This document will be publicly disclosed unless there is written dissent on its disclosure by the Borrower at the time of this document submission to IFAD or no later than the project closing date.

Appendix 6: EFA/Value for Money

Introduction

This annex presents the ex-post economic and financial analysis (EFA) and Value for Money assessment of the investments implemented under the HESAD project. Its main objective is to provide the evidence to assess the project's economic performance based on observed results, and to compare these with the assumptions and estimates made at design (the ex-ante EFA). The analysis also aims to identify the key drivers and bottlenecks of economic performance, and to derive lessons to inform future similar interventions in Guyana's hinterland areas

In line with IFAD PCR guidelines on EFA and VfM, the analysis is "mainly ex-post", since it combines observed data on costs, outputs and outcomes from implemented investments plans with forward-looking assumptions where benefits flows are expected to continue beyond the project completion period. This is particularly relevant in the case of HESAD since, as explained below, the totality of investments under the Business Plans (BP) and Public and Collective Investment Plans (PCIPs) was implemented in the second half of the project lifecycle, later than envisaged at design. As a result, the realization of incremental benefits has been shifted over time compared to the projections underpinning the EFA at design.

The analyses presented in this Appendix are based on the triangulation of multiple data sources. These include data from the project's monitoring and evaluation (M&E) system, particularly the PCIP and BP dashboards, as well as the endline survey conducted at project completion. To assess the financial performance of the agricultural production and processing business plans, the M&E data were complemented by 30 in-depth interviews conducted using a structured quantitative EFA questionnaire tailored to the characteristics of the farming systems and business models supported by HESAD. The in-depth interviews were conducted partly alongside the endline survey and partly during the project completion mission. The sample of groups covered with the in-depth interviews was purposively selected to reflect the main types of business plans supported by the project. Within each group, respondents were selected among individuals holding managerial roles (typically president or treasurer), thus ensuring access to detailed and reliable information on production, costs, revenues and group-level financial management. The quantitative analysis was further complemented by qualitative evidence and field observations collected during site visits and focus group discussions carried out as part of the completion mission.

Summary and key findings

The initial assumptions regarding the project's financial execution and implementation pace that underpinned the ex-ante EFA proved insufficiently robust. Both execution and beneficiary onboarding were heavily concentrated in the later years, and the number of Business Plan (BP) beneficiaries (the project's main pathway for income generation) fell significantly short of expectations. As a result, economic benefit flows were substantially delayed and reduced compared to design projections. This led to a marked decline in key economic performance indicators relative to the ex-ante EFA, resulting in negative EIRR and ENPV values if the same discount period used for the ex-ante analysis is applied ex-post (see below for details).

However, the ex-ante EFA was performed with a 10-years time horizon, that is the minimum discount period advised by the IFAD EFA Guidelines (Vol. 2, page 35) and only considered appropriate for project focused on crop enhancement through better inputs. Given that HESAD included investments with longer gestation periods (such as infrastructure and livestock development) a 15-year time horizon was considered more appropriate for the ex-post EFA. This allows for a more meaningful assessment of the project's economic performance while

maintaining a degree of comparability with ex-ante projections, since 15 years represents a midpoint between the 10-year period used ex-ante and the standard 20-year horizon recommended by IFAD guidelines. Moreover, in hindsight, a 10-year discount period is considered not in line with the complex realities of the Guyana Hinterland and the analysis is excessively influenced by the implementation difficulties experienced in the initial years by the HESAD project, that was eventually able to accelerate the rate of investment and funds utilization between 2021 and 2023.

With a 15 years discount period, the ex-post EFA based on actual project data yields positive economic performance indicators with an EIRR of 19.3% (above the 5% social discount rate utilized for the ex-post analysis), an ENPV of USD 5.2 million and a BCR of 1.69. It is also noted that, when the analysis is conducted over a 13-year discount period (that is, capturing 10 years of benefit flows following the initial project investments in BP and PCIPs, and thus more in line with the benefits accounting period used for the ex-ante EFA under the assumption of beneficiaries enrollment starting in PY2), the indicators remain positive with an IRR of 14.9%, an ENPV of USD 2.7 million and a BCR of 1.36.

Although the ex-post results are below the ex-ante estimates (EIRR 21.0%, ENPV USD 6.97 million, BCR 2.01) and reflect the effects of implementation delays and lower-than-expected BP outreach, they nonetheless indicate that the project was, overall, a worthwhile investment. It should also be considered that a significant part of the benefits from collective investment in PCIPs could not be monetized due to lack of mechanisms to capture and value, for example, the long-term health and human capital benefits linked to improved nutrition shown in the significant MDDW improvements. Thus, the economic results mainly reflect the incremental benefit flows from BP, and only part of the resilience-enhancing effects from PCIP interventions (as captured by the RDMT increase) were estimated through a conservative valuation of incremental benefits from reduced crop and livestock losses.

Overview of the main changes compared to the ex-ante EFA

Before presenting the detailed results of the financial and economic analysis, it is useful to summarize the main changes in key parameters for the analyses presented in this Appendix. This step is essential not only for methodological consistency and comparability with the ex-ante EFA, but also because it helps identify the main drivers of deviations between projected and actual project performance and will support the assessment of overall project efficiency.

The financial analysis performed for the ex-ante EFA, as presented in the PDR Annex 10, was based on the estimation of the flow of incremental benefits at market (financial) prices over a 10-year horizon. The benefits considered in the financial analyses were assumed to derive from two main investment streams:

1. Business plans for Producer Groups, currently named simply Business Plans (BP), further divided in “Agricultural Production” plans and “Enterprise” (that is, off-farm) plans.
2. Community Production Development Plans, subsequently renamed as Public and Collective Investment Plans (PCIP).

In the ex-ante EFA, these two streams were assumed to generate benefits through a rapid deployment of investments and near-full realization of productivity and income gains across the participating beneficiaries.

Changes in timing and beneficiaries onboarding for BPs. The projected incorporation of beneficiaries on which the ex-ante financial analysis was based is presented in Table 6.1 below, taken from the HESAD PDR. The ex-ante analysis assumed that a total of 6,000 households would benefit from participation in Business Plans; of these, 5,750 households were expected to participate in agricultural production plans and 250 households in enterprise plans (25 plans with an average of 10 households each). Moreover, it was assumed that 6,100 households would benefit from PCIPs, with representative activities identified as the provision of drinking water systems and internet facilities.

As can be seen from Table 6.1, the incorporation of beneficiaries (and thus the realization of investments and the flow of incremental benefits) was expected to start from project year 2 (PY2), and to be fully completed by PY4.¹ This implied, consistently with the phasing plan established at design, a front-loaded implementation profile, with most benefits accruing early in the project lifecycle.

Table 6.1: Ex-Ante EFA, projected incorporation of beneficiaries



Source: HESAD PDR, Annex 10, Table 1 – Beneficiaries incorporation to the project

With regard to both outreach and timing of the investment and the beneficiary households onboarding rates, the actual project results significantly differ from the ex-ante assumptions. Since these differences constitute one of the main explanatory factors behind the divergence between the ex-ante and ex-post EFA results, they are described in detail below.

For ease of presentation and to facilitate direct comparisons with the ex-ante EFA, the BP financed by the project and recorded in the project Dashboard have been classified into groups consistent with those used at design. Specifically, the “Agricultural Production” group includes BP supporting crop production (e.g. cassava, horticulture, ginger and spices, shadehouses etc.), livestock production (cattle, sheep, pork), and poultry (broilers and layers). The “Enterprise” group includes BP supporting agroprocessing activities (e.g. cassava processing, peanut butter production, cocoa) and other (that is, off-farm) rural enterprises (e.g. hospitality, brickmaking, sewing).

The first relevant discrepancy compared to the ex-ante projections concerns the actual timing of investment, that was significantly delayed. In contrast with design assumptions, the project only started investing in Business Plans from Project Year 5, rather than from PY2. This represents a delay of approximately three years in the onset of benefit generation, relative to the ex-ante EFA. A similar delay also affected investment in PCIPs.

Table 6.2: Actual phasing of Business Plans (number of plans by Project Year)

TYPES OF BUSINESS PLANS	Project Years
-------------------------	---------------

¹ “PY4” is erroneously reported as “PY6” in Table 6.1 below; the typo was in the original PDR table and is maintained here for coherence. However, PY6 in the table is clearly referring to PY4, as confirmed by the Excel tables of the ex-ante EFA.

	PY1- PY4	PY5	PY6	PY7	PY8- PY10	TOTAL
AGRICULTURAL PRODUCTION						
Crops production	-	14	3	10	-	27
Livestock (excluding poultry)		18	14	12		44
Poultry	-	16	5	15	-	36
<i>Total agricultural production</i>	-	48	22	37	-	107
RURAL ENTERPRISES						
Agroprocessing	-	8	2	6	-	16
Other enterprises		6	17	22		45
<i>Total enterprises</i>	-	14	19	28	-	61
Total Business Plans (per year)	-	62	41	65	-	-
Total Business Plans (cumulative)	-	62	103	168	168	168

Source: elaboration based on data from HESAD Project Dashboard

The delayed start of business plans investments inevitably had a direct impact on the actual rate of beneficiaries onboarding. As shown in Table 6.3, the actual number of beneficiary households (that is, households participating in BP groups) was significantly lower than planned at design. Based on the data from the BP Dashboard and Logframe, the final total number of households participating in the BPs was in fact 2,414 instead of the initially planned 6,000 households. This corresponds to only 40.2% of the target used for the ex-ante EFA, indicating a substantial shortfall in BP outreach relative to design assumptions.

In addition to the reduction in scale, the distribution of beneficiaries across types of BP also differs from ex-ante projections. The number of enterprise BP eventually implemented (61) exceeded the original target (25), resulting in a higher number of participating households in enterprise activities (862 vs 250 planned). Conversely, the share of participation in agricultural production BP was lower than expected (1,536 households vs 5,750 planned), corresponding to only 26.7% of the initial target. This shift in the composition of the BP beneficiaries pool has of course relevant implications for the structure and timing of benefit flows.

Table 6.3: Realized phasing of BP beneficiaries (number of participating households, by PY)

TYPES OF BUSINESS PLANS	Project Years					TOTAL
	PY1- PY4	PY5	PY6	PY7	PY8- PY10	
AGRICULTURAL PRODUCTION						
Crops production	-	247	74	161	-	482
Livestock (excluding poultry)	-	285	68	192	-	545
Poultry	-	217	68	215	-	500
<i>Total agricultural production</i>	-	749	210	568	-	1 527
RURAL ENTERPRISES						
Agroprocessing		156	25	100	-	281
Other enterprises	-	453	132	21	-	606
<i>Total enterprise</i>	-	609	157	121	-	887
Total Beneficiaries HH (per year)	-	1 358	367	689	-	-
Total Beneficiaries HH (cumulative)	-	1 358	1 725	2 414	2 414	2 414

Changes in actual participation rates. A further adjustment was required in the ex-post EFA to account for differences between nominal participation rates and actual realization of benefits. The estimation of aggregate project net incremental benefits for the financial analysis in the ex-ante EFA was based on the “aggregate production of the 5,750 rural households and 25 enterprises that will be supported by the project” (PDR Annex 10, paragraph 60). That is, the aggregate benefits (that is, the financial aggregation of the net incremental benefits) were calculated considering an adoption rate (or, equivalently, a realization-of-benefits rate) of 100% among the BP participants. However, the endline survey indicates that this was not the case, since only 76.1% of the surveyed BP participants reported an increase in income.

This finding implies that the effective rate of benefit realization was lower than assumed at design, and that not all formally registered beneficiaries were able to translate their participation in BPs into actual economic gains and incremental net benefits. This finding on the lower-than-expected accrual of actual incremental income benefits to BP participants was confirmed by in-depth interviews, field visits and focus groups conducted during the completion mission. Two main factors explain this gap. First, some BP were not fully functional and viable, or operated below capacity. For example, this was the case for some of the poultry BP, when limited local availability of feed had not been properly factored in the initial business planning. The subsequent high transport costs for feed to be flown in eventually hindered the plans’ viability and sustainability. Second, in some case not all the formally registered BP members maintained an active involvement in the BP group activities throughout project implementation, and therefore did not benefit from the group’s income increases.

Consistent with the conservative approach adopted in this ex-post EFA analysis, the households onboarding rates were therefore adjusted downwards to reflect actual lower rates of benefits realization (or, equivalently, to account for a lower adoption rate for the new activities supported through the BPs). The adjusted onboarding rates are reported in Table 6. These figures reflect the estimated number of households effectively benefiting from increased incomes flows from BP interventions, and are used as the basis for the aggregation of incremental net benefits in the ex-post EFA. The figures also reflect some minor adjustments made to reflect minor variations in the actual onboarding and adoption rates recorded for different types of BP. At the most general level, it is important to note that the adjusted number of actual beneficiaries (that is, beneficiaries that participated in BP groups and actively partook of BP activities and benefits) is 1,704, corresponding to 28.4% of the initially projected 6,000.

Table 6.4: Adjusted phasing of BP beneficiaries (No. of actually benefiting households, by PY)

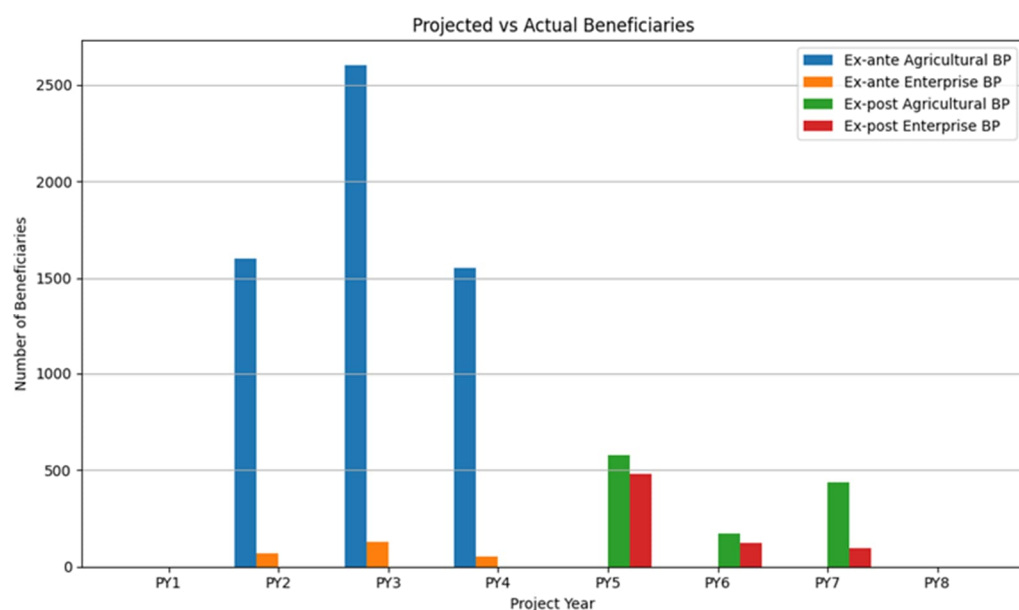
TYPES OF BUSINESS PLANS	Project Years					TOTAL
	PY1- PY4	PY5	PY6	PY7	PY8- PY10	
AGRICULTURAL PRODUCTION						
Crops production	-	173	52	112	-	337
Livestock (excluding poultry)	-	204	58	134	-	396
Poultry	-	152	48	150	-	350
<i>Total agricultural production</i>	-	529	158	396	-	1 083
RURAL ENTERPRISES						
Agroprocessing		109	18	70	-	197

Other enterprises	-	317	92	15	-	424
<i>Total enterprise</i>	-	<i>426</i>	<i>110</i>	<i>85</i>	-	<i>621</i>
Total Adjusted Beneficiaries HH (per year)	-	955	268	481	-	1 704
Total Adjusted Beneficiaries HH (cumulative)	-	955	1 223	1704	1 704]	1 704

Source: elaboration based on data from HESAD Project Dashboard, adjusted by endline survey and interview results

The differences in numbers and phasing between the ex-ante and the ex-post EFA are illustrated in Figures 6.1 and 6.2. Figure 6.1 shows that, under the ex-ante assumptions, BP beneficiary onboarding was highly concentrated in PY2-PY4; in contrast, the ex-post results show that onboarding (hence, benefit flows) occurred only from PY5 onwards. Figure 6.2, which present cumulative number of BP beneficiaries per PY, further highlights the relevance of this deviation and the significant reduction in both the aggregate number of beneficiaries, and in the number of years where benefits flows can be accounted for.

The reduction in total number of BP beneficiaries, and the significant shift in the benefits timing, have important implications for the financial and economic analysis. As noted in the Endline Survey Report, the BP have been the main mechanism through which the project has supported income generation. The significant implementation delays in BP investment, coupled with the lower number of effective beneficiaries, imply that returns were realized later in the analysis period, and that the aggregate stream of incremental benefits were significantly reduced. Both factors have significantly affected project efficiency and will be explicitly considered when interpreting the results of the ex-post EFA analysis.



Projected (ex-ante) vs actual (ex-post) phasing of BP beneficiaries

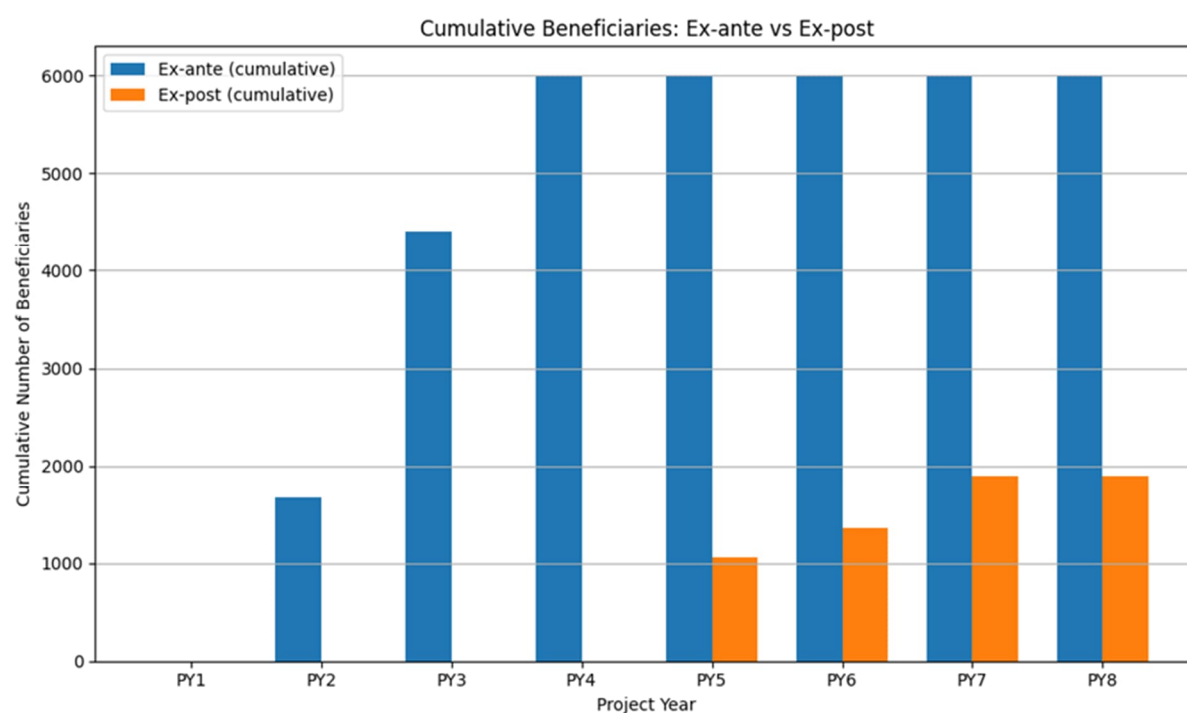


Figure 6.2: Comparison of cumulative BP beneficiaries, ex-ante and ex-post

Financial analysis

Consistently with the approach used ex-ante and to allow direct comparability of results, the financial analysis was conducted by calculating the flow of annual incremental net benefits valued at market prices over a period of 10 years. The value for the opportunity cost of capital assumed at design (14%) was considered still appropriate for the ex-post analysis in light of prevailing commercial bank lending rates in the Guyana Hinterland. The analysis was based on the calculation of the financial internal rate of return (FIRR) and the financial net present value at market prices (FNPV).

Selection and construction of farm and enterprise models. Mirroring the approach adopted ex-ante, and in line with the IFAD Guidelines, a set of farm models was constructed through the aggregation of individual crop and livestock budgets. Based on the expectations at design stage on beneficiaries' demands and agricultural production activities, the ex-ante analysis considered two farm models: cassava-cattle and peanut-sheep. The ex-ante farm models also included other family activities reflecting prevailing hinterland livelihood patterns, such as incomes from hunting and fishing. However, returns from these activities were assumed to remain constant over the discount period of the ex-ante analysis and were therefore uninfluential for the estimation of incremental net benefits flows. For this reason, as well as for the lack of reliable data on additional livelihood activities, these income streams have not been considered for the ex-post analysis.

Crop models. For the ex-post EFA, the set of farm models was expanded to reflect implementation evidence, ensuring that the analysis captures the actual BP-supported activities and the observed combinations of activities in beneficiaries' production systems. The crop and livestock models developed for the ex-post EFA include: poultry (broilers), cattle, sheep raising, shadehouse vegetable cultivation, purple potato (as representative of diversification crops), ginger production under plantain (as representative of higher-value crops), and cassava (as representative of staple crop production).

For poultry, sheep, and shadehouse vegetable production, the models were estimated at the aggregate group level. These activities were implemented through organized BP groups that operate shared infrastructure and inputs (e.g. poultry houses, shadehouses, common equipment), with production decisions and outputs managed collectively. As a result, total production and costs are determined at the group level and are not directly proportional to the number of active participants. Estimating these models at the group level therefore more accurately reflects the underlying cost and benefits parameters. Per-capita incremental net benefits were subsequently derived by dividing group-level results by the average number of active BP members and attributed to individual beneficiaries. In contrast, for ginger, purple potato, and cassava, where production activities are often managed at the individual household level, incremental net benefits were estimated directly at the level of individual production modules. A similar approach was preferred for cattle production since, although activities were often organized under BP groups and Village Councils, there was substantial variation in herd size and the number of participants across groups.

Farm models. The combinations of activities used to aggregate crop models into farm models were defined based on patterns observed during field interviews. Cassava production, as the universally adopted staple crop with strong relevance for both self-consumption and commercialization of surplus, was included as a complementary activity in all farm models alongside the BP-supported production systems. Thus, five farm models were considered for the ex-post analysis instead of the two farm models considered ex-ante. These were: (A) cattle-cassava (also considered ex-ante); (B) ginger-cassava; (C) poultry-cassava; (D) sheep-vegetable shadehouse-cassava; (E) purple potato-cassava.

The inclusion of cassava also allows the analysis to capture an additional benefit stream associated with project support. Evidence from the Endline Survey indicates that more than one third of beneficiaries (35.2%) reported an increase in farmed area compared to the pre-HESAD period, a finding further corroborated by EFA field interviews. Beyond financing investments and training, the project provided in fact additional agricultural inputs and planting materials, which in the resource-constrained context of the Guyana Hinterland were frequently used to expand cultivated areas. This expansion was achieved by mobilizing the most readily available production factors (land and family labour) and was accompanied by the adoption of improved farming practices promoted by the project. The cassava area expansion factors incorporated in the models are based on conservative estimates derived from

beneficiary interviews and range from 10% in the poultry–cassava model to 30% in the cattle–cassava model. No expansion was assumed in the sheep–shadehouse model, since the interviews showed that the additional resources and inputs were instead allocated to the more intensive shadehouse vegetable production.

Enterprise models. The two enterprise models selected for the ex-post analysis focus on agroprocessing activities, namely: (E) cassava processing (production of cassava farine and cassava bread); and (F) peanut butter production (also assessed ex-ante). The selection of agroprocessing models was guided by two main considerations: field accessibility considering logistic and budget constraints, and the fact that agroprocessing represented the most widespread category of off-farm business plans with strong relevance for group-based activities.

To reflect the diversity of off-farm BPs, the selected cases were chosen to represent two distinct typologies. Cassava processing represents a larger-scale, more structured business plan linked to a well-established market demand for a local staple food, while peanut butter production represents a smaller-scale group activity associated with more discretionary consumption patterns. Additional partial interviews and focus group discussions conducted with other types of business plans (e.g. small-scale bakeries, larger-scale brick production) provided supporting evidence on the fact that the cost structures, labour use, and market conditions were similar to those of the analysed enterprises, thus confirming that the selected models are broadly indicative of the economic performance of off-farm enterprise BPs and can therefore be used as reasonable proxies for the wider set of enterprises supported by HESAD. Net incremental benefits were calculated for the group activity, to then derive per-capita net incremental benefits dividing by the average active group participants.

Financial results for the farm and enterprise models. The financial results obtained for the estimated farm and enterprise models are reported in Table 1 below. For each model, annual net financial benefits in the without-project (WOP) and with-project (WP) scenarios (at full benefit realization) are reported, together with the incremental difference. In addition, the financial net present value (FNPV), calculated over a 10-year period at a 14 % discount rate, is provided. Results for farm models are expressed on a per-beneficiary basis, while enterprise models reflect group-level activities. For ease of comparison, all values (originally estimated in financial GYD) were converted into USD using the average official exchange rate during the implementation period (stable at 1 USD = 208.5 GYD). The financial internal rate of return (FIRR) was calculated only in cases where the structure of cash flows allowed for a meaningful and unique solution. This applies primarily to models involving significant upfront investment in longer-term assets (e.g. livestock infrastructure or agroprocessing equipment). In cases where early positive cash flows and limited initial investment lead to unstable or non-informative IRR estimates (particularly for crop-based activities relying mainly on improved inputs and expansion of annual production) model performance is assessed primarily through the FNPV.

Table 6.5: Financial results for the farm and enterprise models

FARM MODELS		Benefit (US\$ / year)			FIRR	FNPV 10yrs @14%
		Without project	With project (*)	Diff.	%	US\$
Model A	Cattle - cassava production	736	2 539	1 803	120%	5 574
Model B	Ginger - cassava production	2 820	8 168	5 347	n / a	24 398
Model C	Poultry - cassava production	288	1 023	736	78%	2 276
Model D	Sheep - shadehouse production	266	681	415	78%	1 317
Model E	Purple potato - cassava production	288	813	525	244%	2 090

ENTERPRISE MODELS		Benefit (US\$ / year)			FIRR	FNPV 10yrs @14%
		Without project	With project	Diff.	%	US\$
Model F	Cassava processing	-	34 268	34 268	88%	51 329
Model G	Peanut butter	-	1 174	1 174	25%	1 424

The farm models show consistently positive incremental financial benefits across all production systems, confirming the economic viability of the activities supported through the HESAD Business Plans. Incremental annual net benefits range from USD 415 (sheep–shadehouse model) to USD 5,347 (ginger–cassava model), reflecting differences in production intensity, market orientation, and value addition. Higher-value and more market-oriented activities, such as ginger production, generate the largest gains, with an incremental benefit exceeding USD 5,000 per year and a high FNPV (USD 24,398). This reflects both strong market demand and the relatively low incremental investment required to expand production. In contrast, staple-based systems such as cassava–cattle and poultry–cassava show more moderate but stable gains (USD 1,803 and USD 736 respectively), consistent with their role in supporting both subsistence and income generation. The sheep–shadehouse and purple potato–cassava models illustrate the relevance of agricultural diversification pathways, generating incremental benefits of USD 415 and USD 525 respectively; while smaller in magnitude, these gains are associated with relatively low initial investments. FIRR for livestock-related models are high (78–120%), reflecting relatively low capital intensity and rapid returns once production is established. The very high FIRR observed in the purple potato model (244%) is driven by low initial investment requirements and quick turnover of a production with increasing local demand.

Enterprise models generate substantially higher absolute returns at the group level, particularly in the case of cassava processing, which yields an annual incremental benefit of USD 34,268 and an FNPV exceeding USD 51,000. This reflects strong and stable demand for processed cassava products, as well as the gains from value addition and collective organization. Peanut butter production, while smaller in scale, remains financially viable, with an incremental benefit of USD 1,174 and a positive FNPV (USD 1,424), albeit with a more modest FIRR (25%), reflecting narrower margins and more limited market depth. Field evidence from the interviewed beneficiaries indicates that some of the peanut processing groups faced constraints related to the limited and unreliable local availability of key inputs, underscoring the importance of strengthened business planning during the early stages of enterprise selection, as well as the need to develop complementary local supply chains. The financial results also highlight the complementarity between farm and enterprise activities support in the Hinterland: while farm models provide widespread and moderate income gains at the household level, agroprocessing enterprise models offer higher-value opportunities at the group level and contribute significantly to local employment generation, as also evidenced by the endline survey results.

Overall, the results indicate that the financial performance of the models estimated at design has largely been confirmed and, in several cases, exceeded based on ex-post evidence. In particular, the cassava–cattle model shows a good degree of consistency between ex-ante and ex-post estimates: the FIRR at design was estimated at 101 %, compared to 120 % ex-post. At the same time, the scale of benefits

has increased substantially, with the FNPV (over a comparable 10-year period and at the same 14 % discount rate) rising from USD 1,436 at design to USD 5,574 ex-post. A similar pattern is observed for cassava processing, where the FNPV increased significantly from USD 17,473 at appraisal to USD 51,329 ex-post. These results suggest that, while the number of active BP beneficiaries was lower than initially projected, the magnitude of benefits per beneficiary or per production unit was higher than anticipated. Overall, the analysis indicates that the reduction in beneficiary numbers has been at least partially offset by higher per-unit returns, resulting in robust financial performance across the main assessed production and enterprise models.

Economic Analysis

The economic analysis was conducted in accordance with IFAD's Economic and Financial Analysis Guidelines, following a domestic numeraire approach and building on the methodology applied at design (PDR Annex 10, Section C). The analysis converts financial values into economic values to reflect the opportunity cost of resources and assess the project's contribution to the national economy. Under this framework, economic viability was assessed through the calculation of the Economic Internal Rate of Return (EIRR), Economic Net Present Value (ENPV), and Benefit-Cost Ratio (BCR), derived from the stream of incremental net benefits from the estimated financial models aggregated according to the actual beneficiaries phasing.

In addition to the benefits captured through the farm and enterprise models described above, the economic analysis incorporates a conservative estimate of resilience-related benefits associated with Public and Collective Investment Plans (PCIPs), which are not fully reflected in production models. These benefits were approximated using an "avoided agricultural production losses" approach applied to beneficiaries' households not covered by the BP models. The estimation is based on endline survey evidence showing a substantial improvement in resilience outcomes between midline and endline through the RDMT and SRI. In particular, the share of households reporting no climate-related losses increased from 14 % to 35.6 % for crops and from 39.8 % to 54 % for livestock, corresponding to reductions of 21.6 and 14.2 percentage points respectively in the incidence of losses.

To ensure a conservative estimate, only 50 % of these improvements was attributed to PCIP-supported interventions, resulting in estimated reductions in loss incidence of 10.8 % for crops and 7.1 % for livestock considered for the analysis. The annual avoided losses were calculated as the product of: (i) the number of households engaged in livestock or crop activities (approximately 4,200 households for crops and 1,800 for livestock, corresponding to 70 % and 30 % of the total in line with endline survey results); (ii) the average annual value of cassava or cattle production per household, expressed in economic prices ; (iii) the reduction in the probability of incurring losses; and (iv) conservative assumptions on the average magnitude of losses among affected households (20 % of production value for crops and 15 % for livestock). The resulting benefit stream was phased in progressively over the implementation period (at economic prices) in line with the PCIP beneficiaries phasing tables, and subsequently aggregated with the economic benefits derived from the BP models. This approach captures only a partial share of resilience-related gains, as it does not account for broader and longer-term benefits such as improved food security, nutrition outcomes, and human capital development.

The overall methodological framework adopted for the ex-post economic analysis remains consistent with the ex-ante EFA. However, key parameters were updated using observed data and to reflect the changed macroeconomic and trade situation in Guyana. In particular, the ex-ante analysis estimated a set of shadow prices and key economic parameters to convert financial values into economic terms. These included: (i) the shadow wage rate, reflecting labour market conditions and underemployment levels in rural areas; (ii) shadow prices for tradable goods (both outputs and inputs), derived from market prices adjusted, where relevant, for taxes; (iii) the shadow exchange rate (SER), calculated using Balance of Payments data as a function of foreign exchange inflows and outflows; and (iv) the social discount rate, set at 4 % based on prevailing opportunity costs of capital.

In line with this approach, agricultural products produced by smallholders were valued at market prices in the ex-ante analysis, reflecting their VAT-exempt status and the fact that most producers operate below the VAT registration threshold. In contrast, enterprise outputs and investment inputs were

adjusted to exclude VAT and other indirect taxes, ensuring that economic prices reflected resource costs net of transfer payments. The ex-post analysis adopts a similar approach to ensure comparability, as well as because the underlying ex-ante assumption remain largely valid.

The ex-post analysis adopts the domestic price level as numeraire. Financial values expressed in Guyana dollars (GYD) were first converted into economic values in GYD and subsequently expressed in USD for reporting purposes. The shadow exchange rate (SER) was recalculated using the same methodology as at design, based on Balance of Payments data from the Bank of Guyana Annual Reports. A five-year average was applied, updated to cover the period 2019–2023, corresponding to the project implementation phase. As a robustness check, an alternative estimation was also derived using trade data from the World Bank's World Development Indicators. The resulting SER for the ex-post analysis is estimated at 213.5 GYD/USD, compared to 223.5 GYD/USD used in the ex-ante EFA.

This moderate decrease in the SER suggests a slight reduction in the foreign exchange premium over the implementation period, reflecting improved export performance and increased foreign exchange inflows associated with Guyana's recent macroeconomic developments. However, the difference between the official exchange rate and the SER remains limited in both the ex-ante and ex-post estimates. This confirms that distortions in the foreign exchange market are relatively low and that the use of market prices as proxies for economic values for tradable goods primarily traded in local markets, as done at design, remains a reasonable and robust assumption. This assumption is particularly justified in the context of the Guyana Hinterland, where the majority of agricultural outputs and inputs considered in the analysis consist of bulky, low-value primary products (e.g. cassava, vegetables, livestock) that are predominantly traded in local or regional markets. Due to high transport and transaction costs, limited infrastructure, and geographic remoteness, these products are only weakly integrated into international markets. In line with IFAD EFA Guidelines (Vol. 2), where goods are not effectively tradable in practice, observed market prices can be considered a reasonable approximation of their economic value, provided that major distortions such as taxes and subsidies are accounted for. In this case, the combination of VAT exemptions for primary agriculture, limited foreign exchange distortions, and the structural constraints to trade integration supports the use of financial prices as proxies for economic prices for a large share of the commodities included in the farm models.

With regard to labour, the ex-post analysis retains the assumptions adopted at design due to the absence of updated unemployment data for Hinterland regions. Unskilled and semiskilled labour was valued at 90 % of the market wage (SWR=0.9), reflecting persistent underemployment. In line with IFAD methodology, taxes and duties are treated as transfer payments and excluded from economic costs. Under the Value-Added Tax Act (2005, as amended), Guyana applies a standard VAT rate of 14 %. However, primary agricultural production is largely exempt or zero-rated, and many key agricultural inputs benefit from preferential VAT treatment. In addition, most smallholder farmers (particularly in Hinterland regions) and rural enterprises operate below the VAT registration threshold and are not VAT-registered. As a result, VAT does not constitute a significant distortion in farm-level financial prices.

The main parameters used in the ex-post analysis are the following:

- Official exchange rate (OER): 208.5 GYD/USD
- Shadow exchange rate (SER): 213.5 GYD/USD
- Standard conversion factor (SCF): 0.977 (OER/SER)
- Shadow exchange rate factor (SERF): 1.024 (SER/OER)
- Shadow wage rate (SWR): 0.9 of the market wage

Farm-level and enterprise-level financial budgets were converted into economic values by classifying inputs and outputs into tradable and non-tradable categories and applying appropriate conversion factors. Primary agricultural outputs and locally traded goods were valued at market prices, reflecting limited integration with international markets and negligible distortions and VAT exemption. Given the absence of reliable and detailed data on inland transport and marketing margins to remote Hinterland regions, explicit import parity pricing (e.g. CIF/FOB-based calculations) was not undertaken. Instead, tradable inputs, particularly those with a significant import component (e.g. fertilizers, veterinary products, agrochemicals and feed), were treated as tradable goods and adjusted using the shadow

exchange rate factor (SERF) as a proxy to reflect the foreign exchange premium. Non-tradable goods and services were valued at market prices net of taxes. Labour inputs were adjusted using the SWR.

Economic net benefits were calculated as the difference between with-project and without-project scenarios and aggregated across beneficiaries, taking into account revised adoption rates and actual implementation phasing. Project costs, originally expressed in USD, were converted into economic values using a decomposition approach consistent with COSTAB methodology, separating tradable, non-tradable, and labour components and applying SER, SCF, and SWR respectively.

A key methodological adjustment in the ex-post analysis concerns the choice of the discount period. The ex-ante EFA was conducted over a 10-year horizon, which represents the minimum period recommended by IFAD guidelines and is generally appropriate for projects focused on short-cycle crop production. However, HESAD included significant investments with longer gestation periods, particularly in livestock development and infrastructure under BPs and PCIPs. In addition, implementation delays resulted in a postponement of benefit flows by approximately three years, meaning that a substantial share of benefits materialized only in the latter part of the project lifecycle. In this context, a 10-year horizon is overly restrictive and heavily influenced by early implementation constraints.

To address this, the ex-post analysis considers three scenarios: (i) a 10-year horizon (Ex-post A), for direct comparability with the ex-ante analysis; (ii) a 13-year horizon (Ex-post B), capturing approximately 10 years of benefit flows following the delayed investment phase, as this permits to account for a same period of benefit flows as considered in the ex-ante analysis; and (iii) a 15-year horizon (Ex-post C), considered the most appropriate scenario for the ex-post EFA and for the assessment of the project economic performance to reflect the longer-term nature of project investments. The 15-year period represents a midpoint between the 10-year horizon used at design and the 20-year period recommended by IFAD guidelines. Moreover, for the ex-post analysis, a Social Discount Rate of 5% was utilized instead of the 4% SDR applied ex-ante.

Results are reported in Table 6.5 below. Under the 10-year scenario (Ex-post A), the project yields negative indicators (EIRR -6.4%, ENPV -USD 1.55 million, BCR 0.8), reflecting the impact of implementation delays and the late realization of benefits. When the horizon is extended to 13 years (Ex-post B), the indicators become positive, with an EIRR of 15.1%, an ENPV of USD 2.79 million, and a BCR of 1.4. Under the 15-year horizon (Ex-post C), that is considered the most appropriate for the ex-post analysis, the project demonstrates a positive economic performance, with an EIRR of 19.5%, an ENPV of USD 5.35 million, and a BCR of 1.7, well above the 5 % social discount rate applied.

Compared to the ex-ante estimates (EIRR 21.0%, ENPV USD 6.97 million, BCR 2.0), the ex-post results are lower across all scenarios, reflecting implementation delays, reduced outreach, and lower effective participation in Business Plans. However, the comparison also shows that the gap with ex-ante projections narrows significantly when a longer and more appropriate time horizon is considered. In particular, under the 15-year scenario, the EIRR approaches the ex-ante estimate (19.5% vs 21.0%), while the ENPV reaches USD 5.35 million, indicating that a substantial share of the originally anticipated economic value has been realized.

It should be noted that the analysis likely underestimates total economic benefits. A significant share of benefits from PCIPs, particularly those related to improved nutrition, human capital, and long-term resilience, could not be monetized due to data and methodological limitations. While some resilience-related benefits were captured through a conservative estimation of avoided production losses, these represent only a partial valuation of broader impacts observed, including improvements in dietary diversity and adaptive capacity.

Overall, the economic analysis confirms that, despite implementation challenges, HESAD generated positive and substantial economic returns when assessed over an appropriate time horizon. The results underscore the importance of aligning the analytical period with the nature of project investments and implementation realities, particularly in contexts characterized by delayed benefit realization and structural constraints such as the Guyana Hinterland.

Table 6.5: Results from the ex-post economic analysis, under the three scenarios (discount periods)

INDICATORS	EFA RESULTS			
	Ex-ante	Ex-post A	Ex-post B	Ex-post C
EIRR	21.0%	-6.4%	15.1%	19.5%
ENPV (USD)	6 970 000	-1 548 132	2 792 706	5 353 024
ENPVb (USD)		6 119 965	10 460 803	13 021 120
ENPVc (USD)		7 668 097	7 668 097	7 668 097
BCR	2.0	0.8	1.4	1.7
Discount period (years)	10	10	13	15
SDR	4%	5%	5%	5%

A basic sensitivity analysis was performed for Scenario C, considering possible variations to benefits flows over the future years (from PY10 to PY15); the results are shown in the table below. The results indicate that the economic performance of the project remains robust under a range of plausible assumptions and confirms that the project's economic viability is resilient to variations in future benefits flows. Even under a substantial reduction in benefits of 30 % in the remaining years considered in the 15-years horizon, the EIRR remains at 13.9 %, well above the 5 % social discount rate, and the ENPV remains positive. More moderate reductions in benefits (-10 % and -20 %) result in EIRRs of 17.8 % and 16.0 % respectively, confirming that the project's economic viability is not highly sensitive to downside risks in future benefit streams. Conversely, increases in benefits lead to further improvements in returns, with the EIRR rising to 21.0 %, 22.5 %, and 23.8 % under +10 %, +20 %, and +30 % scenarios respectively. These results highlight the potential gains associated with sustained support to the projects financed by the HESAD project, and suggest that continued technical assistance and business development support over the coming years still have the potential to further enhance the project's economic returns.

Table 6.6: Sensitivity analysis on benefits PY10 – PY15 (Scenario C)

Scenario		EIRR	ENPV (GYD '000)
Base scenario		19.5%	2 441 672.3
Benefits	+10%	21.0%	1 293 229.2
Benefits	+20%	22.5%	1 470 353.1
Benefits	+30%	23.8%	1 647 476.9
Benefits	-10%	17.8%	938 981.6
Benefits	-20%	16.0%	761 857.7
Benefits	-30%	13.9%	584 733.9

Guyana

Hinterland Environmentally Sustainable Agricultural Development Project Project Completion Report

Appendix 8: Dates of supervision mission and follow-up missions

Mission Dates: 21/10/2025 - 29/10/2025
Document Date: 24/06/2026
Project No. 2000001472
Report No. 7531-GY
Loan ID 2000001704

Latin America and the Caribbean
Programme Management Department

This document will be publicly disclosed unless there is written dissent on its disclosure by the Borrower at the time of this document submission to IFAD or no later than the project closing date.

Mission	Dates
Supervision Mission 1	19 November 2017 - 25 November 2017
Supervision Mission 2	16 September 2018 - 29 September 2018
Supervision Mission 3	21 October 2019 - 31 October 2019
Impl. Sup/Follow Up Mission 2	10 February 2020 - 15 February 2020
Remote partial supervision 1	01 June 2020 - 23 June 2020
Mid-Term Review 1	18 October 2021 - 29 October 2021
Partial supervision mission 1	08 March 2022 - 18 March 2022
Impl. Sup/Follow Up Mission 3	13 June 2022 - 13 June 2022
Supervision Mission 4	19 September 2022 - 30 September 2022
Impl. Sup/Follow Up Mission 4	06 February 2023 - 10 February 2023
Supervision Mission 5	09 October 2023 - 20 October 2023
Partial supervision mission 2	06 May 2024 - 10 May 2024

Guyana

Hinterland Environmentally Sustainable Agricultural Development Project Project Completion Report

Appendix 9: Terms of Reference of the completions review mission

Mission Dates: 21/10/2025 - 29/10/2025
Document Date: 24/06/2026
Project No. 2000001472
Report No. 7531-GY
Loan ID 2000001704

Latin America and the Caribbean
Programme Management Department

This document will be publicly disclosed unless there is written dissent on its disclosure by the Borrower at the time of this document submission to IFAD or no later than the project closing date.

Terms of Reference
Project and Country Strategy Note Completion Mission
Hinterland Environmentally Sustainable Agricultural Development Project
HESAD
Mission dates: 20-30 October 2025

I. BACKGROUND

1. The Hinterland Environmentally Sustainable Agricultural Development Project (HESAD) was a six-year, US\$ 11.14 million project funded by IFAD in the Co-operative Republic of Guyana. The project was implemented by a Programme Management Unit (PMU) embedded in the Agriculture Sector Development Unit (ASDU) of the Ministry of Agriculture.
2. HESAD's financing structure included a US\$ 8.4 million investment from IFAD (US\$ 7.9 million loan and US\$ 0.5 million grant, US\$ 2.4 million in counterpart funding by the Government of Guyana, and US\$ 0.3 million in contributions from beneficiaries.
3. The project's development objective was to improve livelihood resilience through income generation, access to assets, improved nutrition, and adaptation to climate variability. It operated in Region 9 and in the Mabaruma and Moruca subregions of Region 1, with pilot projects in Regions 7 & 8 as part of its extension activities. To achieve its objective, the project worked through three types of community-developed investment plans: Public/Collective Investment Plans (P/CIP), Community Training Plans (CTP), and Business Plans (BP).
4. Approved by IFAD's Executive Board in November 2016, the project entered into force on 21 March 2017 and, following a total of 18 months extension, completed activities on 30 September 2024. In 2020, the project was restructured while maintaining the original development objective and targeting approach, with a revision of logframe targets and the transfer of management of the Grant Investment Fund to the ASDU.
5. A Mid-Term Review conducted in October 2021 noted significant improvements in project performance, paving the way for an extension. In November 2022, a supervision mission confirmed that the criteria for an extension had been met, and in December of that year IFAD approved a 12-month no-cost extension. On the sidelines of the UN Food Systems Stocktaking Moment (July 2023), IFAD and the Government of Guyana discussed a potential scale-up through additional financing by both parties. However, this did not materialize, as Guyana's reclassification as a High-Income Country (HIC) precluded new financing under concessional terms. Instead, a second no-cost extension was granted to ensure an orderly closure and sustainability of investments. The project officially completed on 30 September 2024, with financial closure on 31 August 2025.
6. In May 2024, IFAD conducted a final supervision of HESAD, during which several actions were agreed to enhance the final leg of project implementation, sustainability, and impact. This included arrangements to close all investment plans, accelerating the procurement of automated weather stations and of the endline survey, facilitating the delivery of localised capacity building to the beneficiary groups, documenting the stability and viability needs for each business plan, and ensuring an exit strategy addressing the need for sustained technical support post project completion.

7. The IFAD team discussed the Project Completion Review process with the PMU and agreed on the respective roles and responsibilities. As the Government of Guyana did not approve the contracting of the end-line survey, the project team took on the responsibility of conducting the necessary data collection for the Project Completion Report. Between February and June 2025, the PMU, in coordination with the Ministry of Agriculture, conducted the endline data collection to estimate figures that will provide evidence for the Project Completion Report (PCR). IFAD contributed to the development of an evaluation roadmap and by providing technical guidance throughout the data collection phase.
8. The timing of this completion mission has been arranged to take place after the general elections in Guyana, scheduled for 1 September 2025, to ensure an appropriate context for government engagement and full ownership by the new Government in place.
9. The Completion Mission will entail consultations with all project stakeholders to assess results and gather insights.

II. MISSION'S OBJECTIVES

10. The Completion Mission will be jointly carried out by IFAD and the Government of Guyana (GoG), and in close consultation with all relevant stakeholders, particularly beneficiaries. The mission aims to achieve the following key outcomes:
 - Review and assess the relevance of HESAD's objectives and activities in relation to the GoG's rural development priorities and the needs of the target population.
 - Evaluate the effectiveness of project implementation, focusing on the extent to which objectives were achieved and the immediate results and impacts of project interventions.
 - Assess the efficiency of the project by reviewing its costs, benefits, and overall implementation process, including the performance of IFAD and its partners.
 - Examine the prospects for sustaining project benefits beyond closure.
 - Generate and document lessons learned to inform future programming by IFAD and the GoG.
 - Prepare the PCR, a joint output endorsed by IFAD and the GoG, showcasing best practices and serving as a reference for country projects and/or potential future operations.
 - To finalize the Country Strategy Note (CSN) Completion Review, following IFAD's guidelines and procedures.
11. To achieve these outcomes, the mission will focus on the following priority areas:
 - Project preparedness and exit strategy: assess the project's closure process, including financial reconciliation and loan closing procedures; review the implementation of the exit strategy and confirm that critical actions have been completed.
 - Assessment of Results and Sustainability: conduct a comprehensive evaluation of project performance in terms of relevance, effectiveness, efficiency, and sustainability; verify that beneficiaries have the capacity and resources to maintain results after project completion.
 - Monitoring and Evaluation System and stakeholder engagement: review all available results data, including Core Outcome Indicators (COI) surveys, monitoring reports, and

updated logframe; participate in stakeholder workshops to gather feedback on achievements, challenges, lessons learned, and perceptions on IFAD's support.

III. EXPECTED DELIVERABLES

12. The Mission's expected deliverables are:

- An Aide-Mémoire summarizing mission activities and key agreements, to be finalized within one week after the mission concludes.
- A jointly prepared Project Completion Report documenting the implementation timeline, key results, and guidance for future operations. The report is expected to be finalized by 19 December 2025
- The CSN completion report to be finalized by 14 November 2025.

IV. METHODOLOGY

13. The Completion Mission will be conducted in the hybrid format with a combination of in-person and virtual meeting. The methodology will apply a mix of qualitative and quantitative approaches, drawing on both primary and secondary data sources, as well as direct observation. Key elements include:

- Critical review of project documentation, including: the MTR report, previous supervision and implementation support mission reports, progress reports, updated logframe, AWPBs and Procurement Plan, the final technical report (including results of endline data collection), updated exit strategy and sustainability plan, knowledge products, financial implementation reports, and audit statements.
- Field visits to selected beneficiary communities. Consultations will focus on: (i) key results achieved; (ii) implementation drivers and challenges; (iii) lessons learned; and (iv) actions or prospects related to sustainability. Verification mechanisms will be coordinated with the PMU.
- Stakeholder workshops (places to be defined) with broad participation from project beneficiaries (including IFAD's priority groups), national and local authorities, civil society, and the private sector.
- Bilateral interviews with key actors involved in rural development and agricultural transformation in the project areas.
- Internal working sessions of the IFAD team to coordinate tasks, reflect on field findings, and consolidate technical discussions, conclusions, and recommendations.

14. An online shared folder will be created to host all reference and working documents, facilitating real-time collaboration among team members.

V. MISSION PREPARATION

15. In preparation for the Completion Mission, the PMU is responsible for preparing all core project documentation and any additional information required for the mission in a timely manner, as well as for organizing field visits, stakeholder workshops, and other necessary

meetings. All requested materials should be submitted to IFAD no later than 6 October 2025 (two weeks prior to the mission start). This documentation includes:

- Final (and cumulative) technical report of the project
- Presentation of final results against the updated Logical Framework
- Information on the implementation of the latest AWPB and Procurement Plan
- Cumulative financial and physical execution data up to project completion
- Updated list of agreements from previous supervision and implementation support missions
- Updated matrix on the status of organizational strengthening and business plans of beneficiary organizations
- Updated exit strategy and closure plan
- Logistical support to the mission team for travel to the project site
- Availability of all key project staff during the mission to ensure the possibility of bilateral and consultation meetings
- Presentation of an updated table of agreed follow-up actions from previous missions
- The final technical report (including results of endline data collection)

VI. MISSION COMPOSITION

Participant	Title	Participation Arrangements
Samir Bejaoui	Country Director, Mission Leader	In-person
Rikke Olivera	Project Technical Lead	In-person
Amanda Assin	Program Officer	In-person
Ana Nestorovic	Gender and Social Inclusion Specialist	Virtual
Santiago Alvarez Gei	Finance Officer	Virtual
Timothy McIntosh	IFAD Liaison Consultant	In-person
Annie Chumpitaz	M&E Consultant	Virtual
Georges Bou Botros	Procurement Specialist	Virtual
Ivan Cucco	EFA Specialist	In-person

Co-operative Republic of Guyana
Hinterland Project – HESAD (2000001472)
Completion Mission I TOR – Mission dates: 20-30 October 2025

A preliminary list of proposed stakeholder meetings includes:

Georgetown	Region 1	Region 9
NAREI (National Agricultural Research and Extension Institute)	RDC (Regional Democratic Council)	RDC (Regional Democratic Council)
GLDA (Guyana Livestock Development Authority)	Regional Agriculture Department	Regional Agriculture Department
GMC (Guyana Marketing Corporation)	Mabaruma Premier Cocoa Growers Association	KMCRG (Kanuku Mountains Community Representative Group)
Ministry of Finance		SRDC (South Rupununi District Council)
Planning Department – Ministry of Agriculture		NRDDB (North Rupununi District Development Board)
Merundoi & Food Policy Department – Ministry of Health		RLPA (Rupununi Livestock Association)
Carnegie School of Home Economics		
Ministry of Amerindian Affairs		
HLB, R. Seebarran & Co		
Audit Office of Guyana		

ANEXES

Annex 1. Terms of Reference for Mission members

Samir Bejaoui	
Country Director, Mission Leader	
Activities	
(i)	Ensure that the mission is conducted in alignment with the mandate, principles, and priorities of the Government of the Cooperative Republic of Guyana and IFAD, through appropriate coordination with national authorities.
(ii)	Lead the mission, guiding the various activities carried out by the mission team and ensuring effective engagement with government counterparts and project partners.
(iii)	Plan and oversee the organization of mission activities and overall logistics.
(iv)	Support the review of findings, the development of conclusions, and the preparation of the Aide-Mémoire and final report.
(v)	Carry out dissemination activities to share results within IFAD and with relevant stakeholders.
Rikke Olivera	
Project Technical Lead and Lead Global Technical Specialist on Land Tenure and NRM	
Activities	
The PTL holds primary responsibility for ensuring the technical quality of the PCR.	
Key responsibilities include:	
(i)	Provide guidance and oversight of the team's technical work, in close coordination with the Country Director.
(ii)	Support the consolidation of the PCR in collaboration with the technical coordinators.
(iii)	Lead the articulation of the theory of change and contribute to the structuring of key findings, results achieved, and outstanding lessons, as needed.
(iv)	Ensure that the PCR complies with IFAD's guidelines and reporting standards.
(v)	Participate in field visits, workshops, and other mission activities, as availability permits.
(vi)	Contribute to and validate the preparation of the mission's Aide-Mémoire.
Amanda Assin	
Programme Officer	
Activities	
(i)	Coordinate among mission team members and with government officials.
(ii)	Facilitate relevant inputs and information for the mission team to support the preparation of mission documents and deliverables.
(iii)	Support the Country Director in presenting the mission's findings with the project team and government partners.
(iv)	Review the overall quality of programme management.
(v)	Support the organization of stakeholder workshops.
(vi)	Provide inputs to relevant sections of the PCR.
(vii)	Contribute to and review the consolidated Aide-Mémoire to ensure consistency and coherence.
Santiago Alvarez Gei	
Finance Officer	

Activities	
(i)	Review the progress in the financial execution of the last Annual Work Plan and Budget (AWPB).
(ii)	Assess the status of audits, disbursements, and financial management related to 2024 implementation.
(iii)	Review cumulative financial execution by source of funding, expenditure category, and component as of the project completion date.
(iv)	Review the administrative and financial aspects of the project's closure plan.
(v)	Formulate conclusions and lessons learned within the area of specialization.
(vi)	Review and provide recommendations to inform the final evaluation and preparation of the PCR, in line with the area of expertise.
(vii)	Contribute inputs to the preparation of the Aide-Mémoire.
Andrijana Nestorovic	
Gender and Social Inclusion Specialist	
Activities	
(i)	Lead the review of social inclusion and gender-related issues, in coordination with the Country Director, the PTL, and the ECG team.
(ii)	Support the assessment of targeting, poverty focus, and gender equity based on findings from recent supervision and implementation support missions.
(iii)	Contribute to the analysis of key factors influencing gender and inclusion outcomes as of the project completion date.
(iv)	Review and provide recommendations for the assessment of results and finalization of the PCR.
(v)	Contribute to the related sections of the Aide Mémoire and complete her assigned sections of the PCR.
Annie Chumpitaz	
Technical Coordinator of the Completion Mission and M&E Specialist	
Activities	
(i)	Review the final presentation of results and the overall achievement of the programme's objectives.
(ii)	Conduct an analysis of physical progress under the 2024 Annual Work Plan and Budget (AWPB).
(iii)	Support the assessment of subproject results, identifying factors that influenced their implementation, outcomes, and sustainability.
(iv)	Analyse M&E results.
(v)	Assess cumulative achievements against the project's Logical Framework.
(vi)	Consolidate progress related to the closure plan (technical, administrative, and financial aspects).
(vii)	Review and provide recommendations to support the finalization of the evaluation and the PCR.
(viii)	Lead the compilation and final drafting of the Closure Mission Aide-Mémoire.
(ix)	Contribute to the preparation of the CSN Completion Review document, following IFAD's guidelines and procedures, and review comments from the revision team.
Timothy McIntosh	
IFAD Liaison Consultant	
Activities	
(i)	Prepare the organizational and methodological aspects of the mission, including the final agenda and coordinating the requirements of IFAD specialists.
(ii)	Provide support and coordination for the preparation of the Aide-Mémoire.
(iii)	Contribute to the PCR by providing inputs on relevant sections.
(iv)	Lead the preparation of the CSN Completion Review document, following IFAD's guidelines and procedures, and review comments from the revision team.

Georges Bou Botros	
Procurement Specialist	
Activities	
(i)	Support the review of the project's closure plan (technical, administrative, and financial) within the area of specialization.
(ii)	Conduct an overall assessment of procurement and contracting management throughout the project cycle in terms of quality, reliability, transparency, and efficiency. This assessment will be based on a desk review of all relevant supervision mission reports, with emphasis on the following aspects: - Strengths and weaknesses in the organization and implementation of procurement and contracting processes under the project. - Corrective measures taken to address identified challenges. - Key lessons learned. - Overall conclusions and insights to inform future operations in the same country and with the same lead implementing agency.
(iii)	Confirm the following in coordination with the project team: - Review and provide recommendations to inform the final evaluation and completion of the PCR.
Ivan Cucco	
Economist in charge of the Economic and Financial Analysis	
Activities	
(i)	Participate in the collection of information, in meetings with the government team, in workshops with key stakeholders, and in final wrap-up meetings.
(ii)	Coordinate with financial management and monitoring and evaluation specialists to integrate the final cost inputs into the Economic and Financial Analysis (EFA) and the calculation of efficiency metrics.
(iii)	Identify the main sources of quantifiable benefits and define the financial models of beneficiaries according to the prevailing typologies, in agreement with the government and the country team.
(iv)	Identify the existing and missing information required for the preparation of the EFA.
(v)	Prepare the ex post EFA, taking into account the assumptions made by the project and the results projected in the design, as well as the corresponding sensitivity analysis.
(vi)	Present the preliminary results of the EFA after the mission and discuss the lessons learned in terms of efficiency, sustainability, and potential for scaling up.
(vii)	Prepare Appendix 6 of the Project Completion Report (PCR).
(viii)	Prepare section E3 of the PCR, based on the review of project costs and benefits, and of the overall efficiency of the project implementation process, including the performance of IFAD and its counterparts in this regard.

Guyana

Hinterland Environmentally Sustainable Agricultural Development Project **Project Completion Report**

Appendix 10: List of person met and mission's programme

Mission Dates: 21/10/2025 - 29/10/2025
Document Date: 24/06/2026
Project No. 2000001472
Report No. 7531-GY
Loan ID 2000001704

Latin America and the Caribbean
Programme Management Department

This document will be publicly disclosed unless there is written dissent on its disclosure by the Borrower at the time of this document submission to IFAD or no later than the project closing date.

Appendix 10: List of persons met and mission's programme

Name	Organization
Marcel Chan-A-Sue, Sustainable Landscape Coordinator	Conservation International
Una Poon, Project Beneficiary	Wanaina Village
Niomi Gill, Project Beneficiary	Wanaina Village
Dhanmatie Ashby, Project Beneficiary	Sacred Heart Village
Edward James, Project Beneficiary	Hosororo Hill
Aletha Williams, Project Beneficiary	Barima Black Water
Allana Moonsammy, Project Beneficiary	Barima Black Water
Clyde Fredericks, Project Beneficiary	Savannah Black Water
Robert La Rose, Project Beneficiary	Kamwatta
Abigail Abraham, Project Beneficiary	Yarakita Village
Aneil Khan, Project Beneficiary	Morawhanna Village
Shevanie Persaud, Project Beneficiary	Kamwatta Village
Aaron Ramascindo, Project Beneficiary	Bumbury Village
Anthony Caravaio, Project Beneficiary	Waikarebi-Aruka
Cassandra Fiedtkou, Project Beneficiary	Mabaruma Settlement
Shirino Francis, Project Beneficiary	Wanaina
Azim Poon, Project Beneficiary	Lower Kaituma
Denise Boyer, Project Beneficiary	Three Brothers Village
Meliza Nedd, Project Beneficiary	Arukamai Village
Darlene Marian, Project Beneficiary	Korabo-Arukamai
Deon Francis, Project Beneficiary	Wanaina
Carlos Fredericks, Project Beneficiary	Lower Koriabo
Nestor Joseph, Project Beneficiary	Wauna
Franklyn Edwards, Project Beneficiary	Wauna Village
Kingsley Bahtiste, Project Beneficiary	Waini Village
Edward Williams, Project Beneficiary	Lower Korebo
Sharlene Jeffrey, Project Beneficiary	Mabaruma Settlement
Shivanie Solomon, Project Beneficiary	Unity Square
Sarah Rammitt, Project Beneficiary	Unity Square
Jacinta Alfred, Project Beneficiary	Yorung paru
Jason Alfred, Project Beneficiary	Yorung Paru
Kennedy Bento, Project Beneficiary	Rukumuta
John Edwards, Project Beneficiary	Tigerpond
Collette Johnny, Project Beneficiary	Tiperu
Kelvin Isaac, Project Beneficiary	Taushida
Carolyn Francis, Project Beneficiary	Kokshebai
Ivor Daniels, Project Beneficiary	Annai Village
Mark Simpson, Project Beneficiary	Surama Village
Cyril Kartino, Project Beneficiary	Katuur Village
Roxanne Beck, Project Beneficiary	Awarenaunau Village
Bryan Ambros, Project Beneficiary	Potarinau Village
Patrick Hovaro, Project Beneficiary	Rewa Village

Cletus John, Project Beneficiary	Shiriri Village
Ramkissoo Johnson, Project Beneficiary	Shiriri Village
Priscilla Torres, Ex-HESAD Field Facilitator	Wowetta
Kendall Francis, Project Beneficiary	Paipang
Andrew Albert, Project Beneficiary	Karasabai Village
Handley Thomas, Project Beneficiary	Crashwater Village
Mariel Mandook, Project Beneficiary	Quatata Village
Suresh Andries, Project Beneficiary	Rupertee Village
Grace Charles, Project Beneficiary	Rupertee Village
Jeva Augustine, Project Beneficiary	Crashwater village
Vionne Edwards, Project Beneficiary	Rewa Village
Bertrand Allcock, Project Beneficiary	Surama Village
Victorine Singh, Project Beneficiary	Surama Village
Nowell Domingo, Project Beneficiary	Wowetta Village
Archer Moses, Project Beneficiary	Katoka Village
Gary Demetro, Project Beneficiary	Nappi Village
Jacqueline Allcock, Project Beneficiary	Surama Village
Bryan Allcock, Former Regional Chairman, Adviser to the President on Agriculture	Kwatamang Village
Jose Charles, Project Beneficiary	Fly Hill Village
Nilas Vincent, Project Beneficiary	Kaicumbay Village
Russian Dorrick, Project Beneficiary	Yupukari Village
Vania Albert, Chairperson – RDC-9; Former HESAD Field Facilitator	Regional Democratic Council, Region 9
Carlos Rahaman	GLDA
Dr. Darren Halley, Regional Agriculture Coordinator	Regional Democratic Council, Region 9
Brentnol Ashley, Regional Chairman	Regional Democratic Council, Region 1
Paul Pierre, Regional Vice-Chairman	Regional Democratic Council, Region 1
Hon. Zulfikar Mustapha, M.P, Minister of Agriculture	Ministry of Agriculture
Raymond Latchman, Project Coordinator	PMU, ASDU, MoA
Dominic Stewart,	
Jennifer Daziel, Finance Manager	ASDU
Germaine Robinson, Finance Officer	ASDU
Hakeem Yearwood, Procurement Officer	PMU, ASDU, MoA
Selywn Anthony, Senior Livestock Extension Officer	GLDA
Amit Parbat, Agri-Business Development Officer	GMC
Aaron Ramroop, Hinterland Extension Coordinator	NAREI
Farran Pearson, Former HESAD Regional Coordinator, Region-1	MoA
John Hernandez, Toshao	Bumbury Village
Christine James, Chairwoman	Blue Flame Women's Group
Mr. Walker, Project Beneficiary	Hosororo Premier Cocoa Growers Association
Mr. Fischer, Project Beneficiary	Hosororo Premier Cocoa Growers Association

Colvin Alfred, Regional Extension Officer	GLDA, Region-1
David Albert, Toshao	Karasabai Village
Luke Davis, Project beneficiary	Tigerpond Village
Royal Albert,	Tigerpond Village
Leal Marslow,	Tigerpond Village
Margaret Lawrence, Executive Director	Merundoi Inc.
Mosa Telford, Scriptwriter	Merundoi Inc.
Timolyn Barclay	Merundoi Inc.
Felicity Persaud, Finance Officer	Merundoi Inc.
Gillian Trim, Director (ag)	Food Policy Unit, Ministry of Health

Guyana

Hinterland Environmentally Sustainable Agricultural Development Project Project Completion Report

Appendix 11: Final wrap-up/stakeholder workshop findings

Mission Dates: 21/10/2025 - 29/10/2025
Document Date: 24/06/2026
Project No. 2000001472
Report No. 7531-GY
Loan ID 2000001704

Latin America and the Caribbean
Programme Management Department

This document will be publicly disclosed unless there is written dissent on its disclosure by the Borrower at the time of this document submission to IFAD or no later than the project closing date.

Appendix 11: Final wrap-up/Stakeholder workshop findings

A stakeholder workshop was conducted as part of the Project Completion mission to capture beneficiary perspectives on project performance, outcomes and lessons learned. The workshop took place in October 2025 and brought together a diverse group of stakeholders, including community leaders, project beneficiaries, representatives of the Regional Democratic Councils, staff from the Project Management Unit (PMU), and representatives from IFAD.

The workshop was structured to facilitate both information sharing and participatory reflection. Participants were organized into thematic groups to assess project performance across four key areas: (i) climate change and livelihoods, (ii) nutrition, (iii) women and youth inclusion, and (iv) sustainability of community investments. The discussions focused on identifying evidence of project results and reflecting on lessons learned and recommendations for future interventions.

A. Main findings

Climate resilience and livelihoods. Participants widely acknowledged that the project contributed to improve their ability to sustain livelihoods in the context of increasing climate variability. Investments in water storage (e.g. water tanks) and community infrastructure were highlighted as particularly important in addressing challenges related to droughts and water availability. However, participants also emphasized that climate-related constraints remain significant, particularly in relation to transportation and access during extreme weather events, which continue to affect production and market access.

Nutrition and food systems. The project was perceived to have had a positive impact on nutrition awareness and practices. Participants reported increased knowledge of healthy diets, including improved understanding of food preparation, dietary diversity and the nutritional value of local products such as cassava and spices. Training sessions, especially those linked to school feeding programs and community kitchens, were highlighted as effective in promoting behavior change. At the same time, participants noted that access to a wider range of food products remains constrained, reflecting ongoing limitations in local food systems.

Women and youth inclusion. The workshop findings indicate that HESAD contributed to strengthening the involvement of women and youth in livelihood activities. Participants highlighted the introduction of income-generating opportunities that are accessible to women, such as sewing, baking and poultry production, as well as improvements in access to equipment and facilities that reduced labour intensity and increased productivity. Training activities were also identified as a key driver of inclusion, enabling participants (particularly women) to acquire new skills and share knowledge within their communities. At the same time, the importance of ensuring equal access to financial resources and maintaining balanced participation between men and women was emphasized.

Sustainability of community investments. Discussions on sustainability highlighted both strengths and remaining gaps. Participants expressed strong ownership of project-supported investments and noted that community involvement in planning and implementation contributed to their continued use. This was further reinforced by the project's approach of allowing villages to take a leading role and responsibility in implementing their own investments, which was consistently identified as a key strength of HESAD. However, several challenges were identified, including the need for stronger technical support, more consistent monitoring and follow-up (mainly focused on sustainability aspects), and improved planning processes. In particular, participants emphasized the importance of conducting

feasibility studies prior to implementation and strengthening capacities in areas such as proposal writing and financial record keeping to ensure long-term viability of investments. These gaps suggest that while ownership was strong, technical and managerial capacities were not always sufficiently developed to sustain investments over time.

B. Cross-cutting lessons and recommendations

Strengthening technical and managerial capacities prior to implementation, while ensuring institutional support, is critical for the success and sustainability of investments. Participants consistently emphasized that training, primarily in areas such as proposal development, financial record keeping and technical production practices, should be provided before the implementation of investments. This would enable beneficiaries to better plan, manage and sustain their activities. At the same time, workshop discussions and PCR findings suggest that capacity constraints were compounded by limited and uneven access to technical assistance and extension services during implementation. This highlights the need for a dual approach that combines strengthened beneficiary capacities with timely and coordinated institutional support, including the effective deployment of technical service providers and sustained post-investment follow-up.

Peer learning and knowledge exchange can enhance the scaling of successful practices. Participants highlighted the value of exchange visits between communities and interaction with similar initiatives. These mechanisms were seen as effective complements to formal training, enabling experiential learning and facilitating the replication of successful practices. While some exchange activities were implemented, expanding and systematizing these opportunities could further strengthen learning outcomes and support the scaling of viable livelihood models.

Simplifying project design and processes can improve implementation efficiency. Several participants pointed to delays during the early stages of the project and emphasized that a simpler design and streamlined procedures could facilitate faster start-up and more timely delivery of investments. This is particularly relevant in remote contexts where logistical challenges already affect implementation timelines.

Early and sustained institutional coordination is a key enabler of effective implementation and service delivery. Strong collaboration between IFAD and the Government of Guyana, particularly the Ministry of Agriculture, as well as the establishment of effective systems for fund disbursement and monitoring were positive aspects noted by participants. Partnerships with private sector actors and NGOs were also highlighted as important enablers of implementation, contributing to the delivery of activities and support services. It was stated that engaging relevant institutions early in the project cycle and ensuring clear coordination mechanisms was crucial to avoid delays and to strengthen the delivery of technical support services throughout implementation.

Investments in post-harvest management and storage infrastructure are needed to strengthen value addition and reduce losses. Participants identified gaps in storage and processing facilities for crops such as grains and peanuts, which limit the ability to preserve products, add value and access better market opportunities. Addressing these constraints would contribute to improving income generation and market integration.

Overall, the stakeholder workshop findings are consistent with the results observed in the endline data analysis and provide valuable qualitative evidence on the project's performance. They confirm the relevance and effectiveness of the project's core interventions, while also highlighting the importance of strengthening technical support, market integration and institutional coordination to enhance the sustainability and impact of future interventions.





What we would like HESAB to
do differently

- 1) Set training on a schedule/ at a
suitable time
- 2) Increase the number of days
for training sessions
- 3) Fundings for projects should be
based on community population
- 4) Supplies for projects should be
given out in a timely manner
- 5) Would like the help by HESAB
for marketing products

What went well

WHAT
DID
IFAD DO?
WELL?

GAG

- 1. Coming on board with Ministry of Agriculture & MOFA
- 2. Having a Good System in place for monitoring and disbursement of funds (transfers)
- 3) First Extension of the Project
- 4) Consultation & Design of the Project
- 5) Partnering with Private business & NGOs to carry Projects / L
- 6) Provide Best Vehicle & equipments for the monitoring and successful implementation of