ANNUAL PARTICIPANTS BASED SURVEY

(PaBS FY2020)

Photo 1 : Inteview avec une Bénéficiaire dans le village de Sokolo, communne de Dandoli Cercle de Bandiagara, Crédit Photo CARE Harande

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Prepared by USAID Harande MEAL Unit

ACRONYMS

ANC	Antenatal Care
BHA	Bureau for Humanitarian Assistance
CARE	Cooperative for Assistance and Relief Everywhere, Int'l NGO
COP	Chief of Party
DFSA	Development Food Security Activity
DIP	Detailed Implementation Plan
FGD	Focus Group Discussions
FFBS	Farmer Field and Business School
FtF	Feed the Future
GBV	Gender Based Violence
GoM	Government of Mali
IYCF	Young Child Feeding
IPTT	Indicators Performance Tracking Table
KII	Key Information Interviews
M&E	Monitoring and Evaluation
MSME	Micro, Small and Medium Enterprises
PaBS	Participant-Based Sample Survey
ODF	Open Defecation-Free
R&I	Refine and Implement
SOW	Scope of Work
SBCC	Social Behavior Change Communication
ToC	Theory of Change
USAID	United States Agency for International Development
WRA	Women of Reproductive Age

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EXECUTIVE SUMARY

"The Human Capital, Accountability and Resilience program for the Promotion of Nutrition Security, Livelihoods and Accountability" program (Harande), a 45-million USD USAID funded program, is implemented in Mopti Region (Mali) for September 2015 to September 2020.

As required by USAID, to inform all the annual monitoring survey indicators and establish the performance achievement, Harande program has to conduct an annual monitoring survey as part as FY20 MEAL activities.

Harande program, implemented the annual monitoring survey through the M&E Unit and Program team supported by the CARE USA Regional M&E Advisor. The methodology is based on the Participants Based Survey (PaBS survey) guidelines expressed in Feed the Future PABS guideline[1]. It has been conducted using the latest BHA participants-based survey methodology guidance. All fourteen (14) annual survey indicators have been computed using weighting procedures. Except for, gross margin, value of incremental and yield indicators that used more complex formulas, standard errors and confidence intervals have been established for the remaining indicators. FY20 Data collection has been made during the period of July 15 - 29, 2020 and methodology comply with the PaBS FtF guideline as recommended by BHA.
The PaBS have been implemented in the following four (4) communes: Dourou, Dandoli, Douentza and Koubewel Koundia, and a total of 48 villages have been reached through these communes for data collection.

A total of 1,733 participants have been sampled for this PaBS. Within them 11% refused the survey and 72% were female. That bring the total participant who responded to the survey in all the frames without double counting to 1,529. Participants who overlap between frames during the survey were counted once. It appears that 28% of participants were youth. Out of a total of 1,529 interviewed respondents 1,265 come from households and 18% of them were household heads. The average size of households was 9 members (the number varies from a minimum of 2 to a maximum of 35 household members).

FY20 actual for gross margins for value chain commodities (Beans, Shallot and Chickens) was positive and better than for two previous years. It was obvious, that the quantity and specifically the value of sales have been improved compared to previous years for the respective commodities. This trend has been observed during the previous survey and directly affected the overall value of gross margin. Furthermore, there are some contextual factors (climate, conflict, adequate use of technologies, quality of soils, rainfall, ..., etc.) influencing the production and also the use of the product. Although quantity of sales for shallot reached 58% of the total production, bean and poultry remained under 40%. It seems that for all the value chain commodities, approximatively the half (50%) of the total production is used for household consumption or any other purposes. It's worth mentioning that around 75% of the total production destined for sale and 25% maximum for household consumption/other uses may be a better scenario to encourage value chain participants to put their product on market and improve their profit.

[1] "Sampling guide for Beneficiary-Based Surveys", Diana Maria Stukel & Gregg Friedman, FtF/USAID, February 2016.

Regarding the use of technologies, 85% of farmers and others targeted participants have applied improved technologies and management practices promoted by Harande during the reporting year. It comes out that for most of the technologies and management practices the number of producers and other reached in FY20 increased with regard of the targets and the previous year achievements. The number of hectares under improved technologies estimates confirmed that farmers had knowledge in using technologies and management practices. Previous years trends observed are maintained over years Even though some of this knowledge have been gained before, then reinforced through the Harande program. Also, data show an average hectare of land under improved technologies or management practices used by farmers 1.09 hectare. This confirm means measured in previous years that is 1 hectare per small farmer. The FFBS highly contributed to this success and FY20 achievement show all farmers interest with regards of promoted technologies and practices. This may bring evidence of a good acceptance and adequacy of the FFBS strategy within this intervention area. It results also that some of the technologies and practices declared to be used by the farmers not promoted by Harande comes from other partner's interventions and are finally complementary.

According to youth indicators, 79.0% of participants have qualified jobs through the non-farm activities to support their livelihoods, against 75% for FY19, 74.3% for FY18 and 54.3% for FY17. Thus, the program contributes to increase the indicator level by 24% since FY17. Approximatively 92% of youth who responded to the survey declare that their livelihoods are based mainly on non-farm activities. It results from this finding that approximatively 7% of targeted youth failed to build their livelihoods on non-farm activities. In addition, result show that 86% of 7,453 direct Harande participants reported to see improvement in the access and the quality of at least one public service available in their area during the reporting period. It's obvious, that Harande contributions to those changes between FY17 and FY20 is attributable to non-farm livelihoods activities like vocational and entrepreneurship support. These success evidences bellow reinforce the finding expressed, stating successful youth interventions strategy implementation by Harande.

Regarding the financial capacities, among the 3 569 participants of the financial services frame after weighting, 24% declare to be able to generate their IGA and enterprise balance sheet. Also results show that only 42% of this frame participant's benefits of training on how to generate IGA, MSME balance sheet. The indicator estimate is closely linked to the training efforts accomplished. Considering the low literacy rates in the population it is good to see that half of participant who benefit of training on balance sheet establishment where able to proceed.

Regarding the services improvement, quality and satisfaction, 86% of 7,453 direct Harande participants reported to see improvement in the access and the quality of at least one public service available in their area during the reporting period. 86% of all program direct participants are satisfied with food, health/nutrition and economic public service during the reporting period, compared to the 91.2%, 84.5% and 84% observed respectively for FY19, FY18 and FY17. These indicators levels are lower than the previous year one but in line with trends observed for this indicator. It still good, record a significant change and inform on the quality and the effectiveness of the provided services.

For conflict indicator, data analysis revels that 48% of people who responded to the conflict survey declared to be involved in conflict resolution in their community or surrounding communities during the past 12 months. They have been involved in several type of conflict resolutions in that time frame. The nature of conflict they participate are detailed: Conflicts between families: 61%; Neighborhood conflicts: 55%; Intra-household conflicts: 32%; Conflicts between farmers and herders: 20%; Gender based Violence: 6%; Armed groups violence: 2%; Conflicts in two or more communities: 0%. It is very good to see that conflict between communities is not mentioned in the occurred conflicts. It also important to note that conflict between farmers and herders ere mentioned only by 20%, this is great improvement in that area where this type of conflict used to have very high prevalence few years ago. It is really great to mention that conflict awareness has been raised among program participant in this area. Figures show better willingness of ability to negotiate a win-win peaceful solution by promoting dialogue between the parties in conflict. Traditional and religious institutions seem also to be more preferred to formal governments ones.

In other hands, among 5,665 participants reached with agricultural/livelihoods activities 74% have adopted post-harvest handling practices as part of their on farm activities during the FY20. 70.3% of the reached participants are female. It came out that at least 6 farmers out of 10 who have a good understanding of post-harvest management and they are focusing and using technologies and practices that helps to store properly and keep the quality of the production like using appropriate bags for storage, insect-temperature and humidity control. This may bring substantial contribution to their revenues as losses are minimized as much as possible.

Regarding the ANC visits it is great to note that behavior changed as 98,8% of women did at least one visit during their pregnancy. Among respondents 51% have reached the required 4 ANC expected and 80% did at least 3 ANC. This is a great achievement in Harande intervention area knowing that ANC figures are much more low at the beginning of the program. It is great to note these important awareness changes as “husband refusal” or low quality of ANC services” are not mentioned by the respondents as limiting factors, they used to be at the beginning of Harande. Care group strategy implemented by Harande had a great contribution in these positive changes production.

On nutrition aspect, 78% declared that themselves and/or their children have consumed the enriched flour promoted by Harande. This represent 8 out of 10 women and show how spread was the implementation and the level of acceptance of the enriched floor activity.

For the resilience integration analysis trough, the Harande implementation, regarding coping actions implemented, it results that 91% of participants who responded, declared that actions and practices have been implemented by the project to address the main recurrent and climate related shocks and stresses identified in their context. Within 95% of participants declared that they observed their own or household vulnerability reduction after actions and practices implementation and 79% of them estimate that they recover for or preserve the initial situation that they have before shock/crises. 20% responded that they did not recover or preserve their initial situation and 1% don’t really know or didn’t wanted to respond to that specific. It is obvious that height participants among 10 are arguing that mitigation actions and practices

implemented are indeed effective and help to reduce their vulnerability to shocks and crises and even maintain or recover for their situation before the crises. It is really comforting to note that a majority of 66% of program perceived resilience integration within the program implementation against 34% of participant who did not perceived. This show a good resilience integration according to program participants based on the effectiveness of the action and responses provided by the Harande program in their context.

For gender integration appreciation it is great to see that approximatively 85% estimate that the integration level is good, within them 58% appreciate to "Transformative gender integration level" and 27% to "responsive gender integration level". Regarding gender integration by Harande according to program participant appreciations, it is obvious that significant changes have been observed. It is also obvious here to note that participants are more informed about gender implementation as all people responded to the survey.

Based on all findings described above, it is obvious that Harande made significant achievements in expected outcome over its implementation period despite the complex insecurity context and the COVID 19 outbreak limitations in FY20. The best possible learning items, best practices and lesson learned should be extracted for knowledge sharing among DFSA and adaptive management insights per each technical sector.

I. INTRODUCTION

The United States Agency for International Development's (USAID) BHA awarded "The Human Capital, Accountability and Resilience program for the Promotion of Nutrition Security, Livelihoods and Accountability", or Harande, intended to promote gender integration on the basis of concrete evidence.

The program is designed to promote resilience of participants through coordinated interventions to improve food and nutrition security, while strengthening the capacity of the population at the household and community level to respond and deal with a myriad of shocks and stress factors. The overall objective of Harande is to: "improve food and nutrition security and livelihoods for 179,690 members of vulnerable households in the districts Bandiagara, Douentza, Youwarou and Tenenkou by 2020".

The program stresses that the causes of suboptimal food utilization include poor intra-household food distribution that favors adult men; the inadequate complementary feeding for children between 6-23 months old, leading to malnutrition; and other health problems such as diarrhea, which affects absorption of food nutrients. Underlying the problems of availability, access and utilization are a number of social and cultural factors that contribute to poor food and nutrition security and income distribution in the four intervention districts. The Harande is committed to an overall social and behavior change strategy based on formative research to promote sustainable change in attitudes, behaviors and practices that will accelerate the improvement of food and nutrition security and participants' ability to adapt to changing conditions. The promotion of women and girls as active participants in the development process with the full support of men and boys, and the creation of opportunities for young people to achieve their aspirations and contribute to socio-economic development of their communities are part of the programming guiding principles.

The intervention is structured around four key components, named as Purposes:
Purpose 1: aims on improvement of WRA & children under five nutritional status – including skills around health and nutrition, and sanitation trough SBCC.

Purpose 2: aims on diversification and improvement of livelihoods, climate change resilience and disaster risk reduction – with an emphasis on climate-smart agriculture production, youth non-farm employment, vocational skills and equitable access to financial services, adaptive practices, effective early warning systems and use of climate information.

Purpose 3: aims on conflict prevention and mitigation, gender, social accountability and governance – with an emphasis on community responses to conflict, mobilizing communities and governments to ensure equitable access and quality in service provision and responses.
Purpose 4:
This component (focused on Disaster Mitigation and Early recovery) has been added to cope with changes and rapid increase of IDP, food insecure households and those affected by conflict, drought and others hazards and shocks. This component takes into account the need for emergency humanitarian assistance activities in all program intervention areas, where insecurity, inter-communal conflicts, massive population movements, and bad harvests cropping

season have shown a major deterioration in the household livelihoods and critical needs in terms of humanitarian assistance related to food insecurity issues.

Harande DFAP was implemented during FY16 to FY20 by a consortium of five (5) NGO, including three (3) International NGOs: CARE International (lead), Save the Children International (SCI) and Helen Keller International (HKI) and two (2) national NGO / field implementing partners: YAGTU and SAHEL ECO.

Each year as part of M&E activities, for annual indicators performance measurement, a participant based survey is implemented. Following report presents FY20 PaBS survey findings.

II. THE SURVEY METHODOLOGY

As required by USAID, in order to compute annual monitoring indicators measured trough the survey, Harande program in Mali implement an participant based survey (PaBS) as part as FY2020 MEAL activities.

This annual PaBS has been implemented through the M&E and Program team supported by external firm[2] for the data collection.

Due to COVID 19 outbreak consequences, prevention measures have been integrated in survey implementation as recommended by the GoM health services. Following preventive methods have been strictly adopted during the survey: all enumerators and survey supervisors have been provided with individual COVID 19 prevention kits that contain: a bottle of hand sanitizer, masks and instruction brochure regarding COVID 19 prevention measures during the survey. The survey training also introduced a beginning module that was focused on the COVID 19 to provide all awareness skills to all survey participants. Following measures have been respected in permanence during the survey implementation:

- Mask wearing: all the survey participants were required to put their mask when they are visiting households and in all public spaces and groups meetings.
- Permanent hand washing: before processing in public spaces, group meetings and household survey, all enumerators were requested to clean their hands with a sanitizer; they should do also when they are done.
- Social distancing: distances of at least one (01) meter should be kept between surveyors and community people in all interactions. Hand shaking and any proximity contact between people have been prohibited during this survey and supervisors where mandatory to insure compliance of that.

The survey methodology follow rigorous sampling procedure described in Feed the Future PaBS guideline recommended by BHA. For FY2020, performance achieved by the program is established by comparing and analyzing PaBS results against planned target for the year. Based on annual targets, progress and changes inducted by the program, measured through the

[2] This is due to CARE Mali changes regarding external enumerators use procedures to cope with insecurity issues. External local firm was hired and provided qualified staff for the PaBS data collection. The external firm was responsible for field enumerators and supervisors identification, for all logistics required arrangements and teams security on the field.

computed indicators estimates the program performance for the FY20 have been established accurately.

Harande program developed and submit to BHA a revised SOW for FY20 PaBS implementation in August. Within a set of 88 annual monitoring indicators, fourteen (14) that are designed to be measured trough annual PaBS methodology (see annual indicators list in Annex 1). Within these selected indicators 7 are for BHA and the 7 others are customs.

The primary audience of this Annual PaBS report is the Harande Program staff, as well as USAID and the consortium partners. As the program is closing, key use of the survey report will be the learning from the Harande implementation for adaptive management, as well as regular program reporting to USAID, CARE & Partners' Headquarters and the Government of Mali (GoM)

CARE as lead of the program, plan to make extensive use of findings from the survey to document and disseminate program performance against outputs, outcomes and higher level of indicators and major success at length. The survey results may also contribute to further performance evaluation of BHA Development Food Security Activity (DFSA) in Mali.

III. THE SURVEY DESIGN AND SAMPLING PLAN

Following are the details on the sampling frame, final sample size and sampling methodology for the annual PaBS.

3.1. The sampling frames

Harande planned to target for FY20 year implementation, 25,460[3] unique and direct beneficiaries for all activities, through different program intended purposes 1 to 4, subgroups. For this annual survey following sampling frames have been designed (see chart 1 bellow):

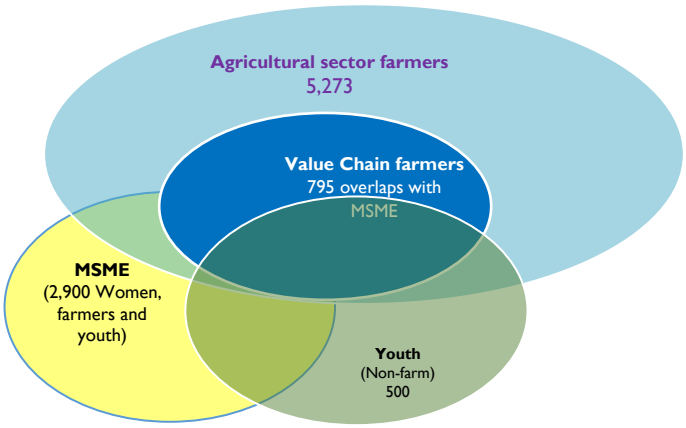
- **Frame 1**: Agricultural sector farmers and others frame with 5,273 beneficiaries (including 795 Value Chain that totally overlap with this frame and represent 17% of frame).
- **Frame 2**: Value Chain participants frame with 795 beneficiaries (315 beans, 300 poultry, 180 vegetables).
- **Frame 3**: MSME participants frame with 2,900 VSLA members most benefiting with community- based saving and loan activities supported by the program, youth benefiting of non-farm activities and micro finance activities beneficiaries (warrantage, linkage with MFI). Considering women participation in on farm activities this frame is estimated around 22% overlap[4] with Frame 1.
- **Frame 4**: Youth participating in non-farm livelihoods frame with 500 youth Non-farm livelihood (Vocational Skills and Entrepreneurship). Frame 4 overlaps with frame 3 is estimated 38%[5].

[3] Based on indicator BHA 51a

[4] Estimated trough previous annual survey

[5] Estimated trough FY19 sampling frames

Chart N° 1: Sampling frames overview



For livelihood components 5,273 farmers (including 795 value chain farmers, 4,478 farmers and others practicing on farm Agricultural sector) have been reached through Farmers Field and Business Schools (FFBS) group's activities, crops. The indicator BHA-9a is applicable for all value chain farmers (795 participants), other agricultural sector farmers and others (4,478) who apply project promoted improved technologies or management practices. Therefore, BHA-9a needs to be collect from all on farm livelihood participant sampling **frame 1** (including **frame 2**). The BHA-15 that is also applicable for agricultural land-based farmers have been derived from **frame 1** (including agricultural land-based framers from **frame 2**).

The BHA indicators BHA-16, BHA-8 need to be collected exclusively from the value chain participant sampling frame represented as **frame 2**. Harande program is supporting currently three (3) value chain commodities (beans, poultry and vegetables, mainly shallot). Harande program targeted to work with a total of 795 value chain farmers distributed: 315 beneficiaries for beans, 300 beneficiaries for poultry, 180 beneficiaries for vegetables (shallot) during FY20 based on approved IPTT targets. Therefore, the value chain sample needs to be selected from three separate sampling frames corresponding the three commodities. These participants come from the set of beneficiaries who participated in training and FFBS activities during FY20, as the program did not provide any seeds yet.

Harande program also target 2,900 participants mostly women trough VSLA, youth benefiting of non-farm activities and micro finance activities beneficiaries (warrantage, linkage with MFI).. Due to the financial specific accompaniment, the MSME beneficiaries have been grouped in a specific sampling frame (**Frame 3**) and cover data collection for financial services related indicators.

For non-farm livelihoods, 500 youth benefiting for vocational skills & entrepreneurship are planned to be targeted by Harande during FY20. The youth are aged from 15 to 30 years and are supported by Harande to improve their non-farm livelihood. Therefore, this group of beneficiaries derives another sampling frame that can be considered as **Frame 4**.

Harande program planned to directly reach 7,845[6] participant for all frames considering overlaps estimated between different frames.

Based on all above mentioned, the following sampling frame/indicator scheme has been defined: i) value chain beneficiaries (frame 2 – for indicator #31 and #30), ii) Agricultural sector farmers (frame 1 for indicator #37, #39, #153, and #154). The value chain-sampling frame is split into 3 subsets, by value chain (beans, poultry, shallot). iii) youth involved in non-farm livelihood (frame 4 for indicators #49 and #51), iv) MSME beneficiaries (frame 3 for indicator #68). The remaining indicators #91, #124, #126 have been measured from all the program participants **Frame 5** (All program participants frames) to computed indicators applicable to all program participants. For All Frames indicators, minimum required sample have been also calculated based on the indicator #91.

3.2. The sample size estimation

The sample of the annual PaBS was a random sample of program participants drawn from these separate sampling frames described in previous sections: the value chain commodities frame (Frame 2), the agricultural sector farmer's frame (Frame 1), MSME participants frame (Frame 3), the youth participants frame (Frame 4) and All Frames (Frame 5).

Indicator BHA-16 (Value of incremental sale) is linked to the indicator BHA-8 (gross margin). Increase in value of incremental sale and gross margin depends on production and sales. Hence, increase use of improved technologies and management practices (BHA-9) with a proportionate increase of hectares of land (BHA-15) is important to achieve targets for BHA-16 and BHA-8. Therefore, the following three indicators BHA-15, BHA-16 and BHA-9a was critical to estimate representative sample sizes for the agriculture and livelihood indicators. BHA-16 has been derived from ***frame 2*** and BHA-9a from both ***frame 1*** & ***frame 2***.
The custom indicator formulated in "Percentage participants able to generate their IGA, MSME balance sheet" is critical to measure outcome performed by the program during FY20 related to MSME financial services. This indicator need the more units of sample than the other (see table 4 in annex) and is derived from ***frame 3***.
For custom youth related indicators, sampling was based on indicator "Percentage of project participant youth reporting improvement of non-farm livelihoods in the past 12 months" that is derived from ***frame 4***.
The following main indicators given in table 1 bellow have been used to estimate sample sizes for 2019 PaBS.

Table 1: Indicators for annual monitoring PBSS sample size estimation

Purpose	Indicator No.	Data Source	Type	Indicator	Direction of change	Frame
2	37	AS	BHA	Number of farmers and others who have applied improved technologies or management practices with USG assistance **(BHA 9a)**	Increase	Frame 1
2	31	AS	BHA	Value of small-holder incremental sales generated with USG assistance **(BHA 16)**	Increase	Frame 2

[6] Overall participants Estimation formula =5273+(2900*(1-0,22))+(500*(1-0,38))=7845

Purpose	Indicator No.	Data Source	Type	Indicator	Direction of change	Frame
2	68	AS	Custom	Percentage participants able to generate their IGA, MSME balance sheet	Increase	Frame 3
2	49	AS	Custom	Percentage of project participant youth reporting improvement of non-farm livelihoods in the past 12 months	Increase	Frame 4
3	91	AS	Custom	Percent of the targeted participants who identified an appropriate mechanism for the peaceful resolution of conflict in the past 12 months	Increase	Frame 5

The survey design and the sampling frames was participant based survey (PaBS) and follow the methodology suggested by the updated Feed of Future "Sampling Guide for Participant-Based Surveys in Support of Data Collection for Selected Feed the Future Agricultural Annual Monitoring Indicators".

Following are the two-sample size estimation formula used to estimate the sample sizes:

1. ***Formula[7] to estimate sample size for the indicators (BHA-15, BHA-16, BHA-9a) expressed as Totals :***

$$n = \frac{N^2 \times Z^2 \times S^2}{MOE^2}$$

Where,

Z= critical value from the normal probability distribution (95% confidence level: 1.96);
N= total number of participant in the respective sampling frame;
S= standard deviation of the distribution of participant data (approx. = [$ind_{max} - ind_{min}$]/ 6);
MOE= margin of error (p * target value of indicator);

Excel sample calculator, provided with BHA PaBS guideline was used to compute the sample size.

2. ***Sample size estimation for youth indicator, financial MSME indicators and other custom indicators formulated in percentage:***

The binomial distribution formula to obtain point estimate for the indicators with values in proportion

$$n = \frac{z_\alpha^2 \times p(1-p)}{\varepsilon^2}$$

Where,

Z_α = is the critical value for normal probability distribution at 95% confidence level = 1.96
p = Proportion of population with desired attribute
ε = Maximum desired sampling error at 95%, confidence level = 6.5% = 0.065

According to FtF PaBS guidance, a design effect that accounts for cluster sampling, as well as, an estimated non-response factor was applied to obtain an adjusted final sample size estimate. Table includes descriptions of all parameters used to calculate the final sample sizes, by indicator. Based on prior survey findings and people displacement observed in some intervention area due to insecurity non response rate of 10% was used instead of 5% initially used for previous surveys.

[7] Sampling Guide for Beneficiary-Based Surveys in Support of Data Collection for Selected Feed the Future Agricultural Annual

Also finite population correction factor FPC = 1 / (1+n_1/N), where n_1 is the initial sample size and N is population needs to be used to adjust the final sample size if initial sample size is greater than 5% of the population.

Table 2: Minimum required sample size estimation for FY19 PBS Survey[8]

Indicator	Total Participant	Estimated values[9]		Standard Deviation	Acceptable % error (for MOE)	Target value (for MOE)[10]	Initial sample size	Design effect (d=2) adjusted	Final n: Non-response (n_r=10%) adjusted
		Max	Min						
	(N)			(S)	(p)		(n_1)	$n_2 = n_1$Xd	n = n_2 X Adj n_r
Sample size for FTF Indicators									
BHA-16: Value of incremental sales (collected at farm level) attributed to USG implementation									
Value chain farmers:[11]									**110**
Beans	315	$22.94	$00.0	3.82	6,5%	$7224.9	23	47	**52**
Poultry	300	$3.82	$00.0	0.64	6,5%	$1529.7	14	29	**32**
Vegetables	180	$122	$00.0	20.33	6,5%	$31393	12	23	**26**
BHA-9a: Number of farmers and others who have applied improved technologies or management practices as a result of USG assistance									
On-farm farmers	5,273	1	0	0.17	6,5%	4,746	39	78	**87**
BHA-15: Number of hectares of land under improved technologies or management practices with of USG assistance									
On-farm farmers	5,273	2,0	0,5	0.25	6,5%	4,957	84	169	**187**
Sample size for Customs Indicators									
Customs MSME : Percentage of participants able to generate their IGA, MSME balance sheet									
N = number of MSME participant for FY20 = 2,900 $Z\alpha$ = is the critical value for normal probability distribution at 95% confidence level = 1.96 P = Proportion of population with desired attribute[12] =20% = 0.2 ε = Maximum desired sampling error at 95% confidence level = 6.5% = 0.065 Initial sample size n_1=145 (equal 5% of the total number MSME beneficiaries that is 145. So the finite population correction factor is not necessary). n_{1adj}=139 Design effect adjusted sample size = 139 x 2 = 277 The non-response rate is expected to be higher (10%), since the random sample would be generated from the list of beneficiaries. Therefore, the final sample size for custom indicator is: n_{final} = 277 x 1.11 =308 As n_{final} < 525, the final sample size has been adjusted to 525 to comply with BHA recommendation regarding minimum sample size requirement.									
Custom Youth indicator : Percentage of project participant youth reporting improvement of non-farm livelihoods in the past 12 months									
N = Number of Youth beneficiaries = 500 Z_α = is the critical value for normal probability distribution at 95% confidence level = 1.96 P = Proportion of population with desired attribute[13] = 75% = 0.75 ε = Maximum desired sampling error at 95% confidence level = 6.5% = 0.065 Initial sample size n_1=170 (More than 5% of the total number of Youth beneficiaries that is 25. So the finite population correction factor is necessary). n_{1adj}=127 Design effect adjusted sample size = 127X 2 = 254 The non-response rate is expected to be higher (10%), since the random sample would be generated from the list of beneficiaries. Therefore, the final sample size for custom indicator is: n_{final} = 254 X 1.11 = 283									

[8] Cf. annex, tables 11 and 12 for details on the calculation processes
[9] Estimated from 2018 targets and total number of beneficiaries
[10] IPTT Target for 2019
[11] These figure are kept as the program did not support participants with seeds during FY20
[12] IPTT Target for 2020
[13] IPTT Target for 2020

Indicator	Total Participant	Estimated values[9]		Standard Deviation	Acceptable % error (for MOE)	Target value (for MOE)[10]	Initial sample size	Design effect (d=2) adjusted	Final n: Non-response (n_r=10%) adjusted
		Max	Min						
	(N)			(S)	(p)		(n_1)	$n_2 = n_1 Xd$	$n = n_2$ X Adj n_r
As n_{final} < 525, the final sample size has been adjusted to 525 to comply with BHA recommendation regarding minimum sample size requirement.									
Custom Conflict Indicator : Percent of the targeted participants who identified an appropriate mechanism for the peaceful resolution of conflict in the past 12 months									
N = Total beneficiaries of conflict activities = 7,845 Z_α = is the critical value for normal probability distribution at 95% confidence level = 1.96 P = Proportion of population with desired attribute[14] = 60% = 0.60 ε = Maximum desired sampling error at 95% confidence level = 6.5% = 0.065 Initial sample size n_1=218 (less than 5% of the total number of conflict beneficiaries that is 369. So the finite population correction factor is not necessary). n_{1adj}=218 Design effect adjusted sample size =218X 2 =436 The non-response rate is expected to be higher (10%), since the random sample would be generated from the list of beneficiaries. Therefore, the final sample size for custom indicator is: n_{final} = 436 X 1.11 = 485 As n_{final} < 525, the final sample size has been adjusted to **525** to comply with BHA recommendation regarding minimum sample size requirement.									

Table above shows the minimum required sample size was 110 for the 3 value chains (60 for each of the 3 value chain commodities) to estimate the value for the indicator BHA-16 from the value chain sampling frame (***frame 2***). But, as PaBS guide required 525 as minimum sample size, the final sample size to tabulate value chains indicators was set to 525, then split proportionally based on total participants.

The minimum required sample size was also 187[15] to estimate the indicator value of BHA-9a for each of the two sampling frames (Value chain (***frame 2***) and On-farm (***frame 1***)). Frame 1 including the frame 2, all the participants sample will be drawn from the overall **frame 1**. But, as PaBS guide required 525 as minimum sample size, then the final sample size to tabulate on farm indicators was set to 525.

The minimum required sample size for the custom indicator "Percentage participants able to generate their IGA, MSME balance sheet" is 525 MSME participants (**Frame 3**).

For the youth related indicators 525 youths were sampled from youth sample (***frame 4***).

The minimum required sample size for Frame 5, based on indicator #91 was 485, as PaBS guide required 525 participants were sampled.

The Overall sample size and final sample size for 2020 PaBS is disaggregated below for the different frames: Value chain farmers, Farmers and Others, Other MSME only, and Youth. **Table 3** shows the final sample sizes by the sampling frames.

Table 3: Final Sample size for FY19 PBSS

[14] IPTT Target for 2019
[15] This consider the minimum requested for indicator BHA 15

Sampling Frame	Population	Sample size	Final Sample Size	Sample per cluster	No. Cluster
1. Value chain farmers:	**795**	**110**	**525**	**37**	**15**
1.1 Beans	315	52	247	17	15
1.2 Poultry	300	32	152	11	15
1.3 Vegetables	180	26	126	9	15
2. Other On farm	**5,273**	**187**	**525**	**35**	**15**
3. Other MSME only	**2,900**	**308**	**525**	**35**	**15**
4. Youth	**500**	**283**	**525**	**35**	**15**

NB. Final sample size for beans, poultry and vegetables have been calculated proportionally to their respective population size, knowing that the minimum required sample size for all value chains put together is 525.

3.3. The sampling Procedure

The sampling procedure was implemented through the following steps:
Selection of Cluster: a total of 48 cluster where sampled in the two cercles of Douentza and Bandiagara, where the program implemented full development interventions activities package. Depending to the frame 15 clusters or more were selected for based on the list of villages where the different program components were implemented, using Probability Proportional to the Size (PPS) procedure.

Selection of Survey respondent: required survey respondents were selected from each sampling frame comprehensive list of participants, before fieldwork using the method of Fractional interval systematic sampling using an equal probability method.
Harande FY2020 PaBS sampling frame was constructed from the program participants tracking database system with unique identifiers for both households and participants within these households. Harande MEAL Unit prepared the sampling plan and sampling frame. Harande MEAL team deployed his teams in line with the field data collection schedule and number of survey locations. Movement from one district to another were considered during the survey planning. The Harande MEAL Manager and External firm survey coordinator make field supervision. The Regional M&E Advisor, CARE USA have remotely monitored, supported all process and tracked for data quality issues throughout the survey period and the report production.

The primary selection unit is participant. This survey has five sampling frames as described below, thus, Harande MEAL team provided a skip logic in the questionnaire for each of these groups where specific modules don't apply. Further sufficient training, guidance and supervision was provided to enumerators on the number of surveys to ensure that there were clear instructions on the sample frame and modules applicable for each participant to interview.

3.4. The sampling weights and the treatment of non-response

The Overall sampling weights were computed and included on the data file for indicator estimates production. The formula provided in FtF PaBS guideline where used to calculate the sampling weights that include non-response adjustment (see weighting formulas in Annex 1.4).

IV. THE SURVEY QUESTIONNAIRE

4.1. The survey tools and survey questionnaire

A structured questionnaire was designed for this annual monitoring PaBS based on BHA requirement for this activity, indicators PIRS, FtF PaBS guideline and FY2019 PaBS survey recommendations. The Harande MEAL team under the guidance of the Regional M&E Advisor developed a draft of questionnaire that was shared with the regional BHA M&E Officers for feedbacks. This questionnaire was developed in French. Data collection was done on mobile tablets in order to reduce data gathering time and to insure a data quality control.

4.2. The training of enumerators, pre-testing and finalization of the questionnaire

After receiving requisite approvals from BHA, the enumerators involved in this annual monitoring PaBS were trained on the questionnaire contents and the data gathering process using the tablet. A focus has been made on words translations in most spoken local languages (Bambara, Peulh, Dogon) and simulations of interviews. After this, questionnaires have been pretested on the field with all the enumerators team to insure a great understanding, ownership and their refinement and adequacy with the local context. Based on feedbacks coming from the pretesting the questionnaire has been finalize and final data gathering forms downloaded on the tablet. This process has been led by the MEAL Manager Harande closely with the external firm survey coordinator.

Following are the specific topics that have been covered in the survey training:

- Brief program overview and the objectives of the surveys
- General rules, norms and guidance on survey implementation
- COVID 19 prevention protocol
- Survey methodology, timeline, team composition, sampling, household selection process
- Detailed discussion of the questionnaire form (question-by-question)
- Use of questionnaire on the tablet
- Role play to show the technique of asking some sensitive questions
- Pretesting of tools on in a non-sampled site
- Evaluations of enumerators to identify the best ones to start with.

V. THE FIELD OPERATIONS

5.1. The human resources for fieldwork and Enumerators

Harande MEAL team ensured that qualified staffs and external enumerators are on board for this survey. The following team composition have been used:

- ✓ Overall Survey Manager CARE: MEAL Manager Harande;

- ✓ Statistical Expert / Data Analyst: MEAL Manager Harande;
- ✓ Survey Management on field: External Firm staff;
- ✓ Survey Monitoring: MEAL Coordinator and officers & External Firm Coordinator;
- ✓ External Field Supervisors (10);
- ✓ External Enumerators (30);
- ✓ Technical Oversee & process quality: CARE USA, Regional M&E Advisor, Senior STA and COP;

The Survey team have been assisted by the Technical Specialists team for survey tools design and management in technical sectors. The survey team have been gender balanced of experienced men and women as well as possible; the survey required external enumerators having technical skills and fluency in French and local major spoken languages (Peulh, Bambara, Dogon).

The external enumerators have been requested to have flowing experience and expertise: the enumerators must have at a minimum a graduate degree with 5 years' experience in a relevant field, and previous experience in undertaking quantitative socio-economic surveys and anthropometric measurements in hard-to-reach rural areas. She/he should be a good team player who can work under pressure/hardship, respect for teammates and program participants, be a good listener and possess strong questioning skills, good hand writing and typing and Android Tablets, and the ability to manage field problems. S/he should be familiar with regional/local context, culture, conversion units and fluency in local dialect.

The Harande MEAL Manager have review all the proposed enumerators CV to insure that they met with the qualification requirement for this PaBS.

Harande MEAL team close monitored the enumerators training, the data collection and the overall data quality. The ONA System have been used as usual for the data collection.

The Harande MEAL Manager only validated enumerators who qualify in post training test. The external firm included an additional number of enumerators in the training to reach the required number after applying a standard screening process. Emphasis have been put on previous enumerators who participated with satisfaction in program surveys: annual PaBS survey, PDM survey, beneficiaries targeting, etc.

5.2. The data quality insurance

The external firm field supervisors played a key role in checking the quality of data. They have validated first the data on tablets before uploading on ONA platform. When needed, they asked to redo some survey. Then, Statistical Expert/Data Analyst ensured correctness, completeness and validity of downloaded data on daily basis from ONA platform to check quality.

Harande MEAL staff and the external firm survey managers also made regular field supervision visits during data collection to monitored the data collection process. Harande MEAL staff monitored the overall data quality of the data collection process on a daily base and issue identified addressed immediately.
The Regional M&E Advisor CARE USA oversee remotely the data collection quality, trough the

ONA web based system used.

VI. TIMELINE

The Participants based quantitative annual survey was undertaken between August and September 2020 according to the following adjusted timeline:

Table 4: Timeline of major events of PaBS survey

Major Events	When / Deadline
SOW review with BHA	June 2020
Enumerators pre identification / tools review and design	June 27th – 5th July, 2020
SOW review and approval by BHA	June 23rd, 2020
BHA approves submitted questionnaires, guides and methodology	July 7th , 2020
Complete proposals including tools, personnel to be engaged, survey plans, and the detailed budget	June 23rd , 2020
Discussions with selected – external enumerators agreed and signed by both parties	July 8th, 2020
Harande Technical management for common understanding and design of the methodology and tools to be used in the Survey	June 27th – 7th July, 2020
MEAL Team submits detailed questionnaires, tools and manual/ guidelines to be applied in sample survey to Harande in French.	June 27th – 7th July, 2020
Training of Enumerators by Survey Team on tools and questionnaire and use of instruments, including pretest	July 11th – 14th , 2020
Revision of tools / questionnaires/Data collection forms on tablets, if required, and updating enumerators on changes	July 9th-14th, 2020
Quantitative" Data collection,	July 15th-29th, 2020
Analysis Data entry, cleaning, processing, analyzing and generating output tables Preliminary survey results editing and reporting	August 5th -25th , 2020
1st draft Annual Survey report. Results presentations to staffs	August 25th September 10th , 2020
Harande team provides feedbacks on preliminary to MEAL Team on findings (by 5 days after the presentation)	September 10-20th, 2020
MEAL team submit preliminary report to HQ team	September 20 -30th , 2020
MEAL team finalize report	October 15th
MEAL Team to submit Final Report with IPTT and all other deliverables	November 5th , 2020

VII. THE DIFFICULTIES ENCOUNTERED AND SURVEY LIMITATIONS

Major difficulties encountered during the FY20 annual survey are:

- Security threats in Bandiagara and Douentza area, that bring to some delay due to suspension of the survey;
- The refusal of informed consent by several sampled participants due to security threats in Bandiagara, increasing then the non-response rate for some sample;
- The non-participation, non-availability during the day or absence of many respondents particularly youth to the survey due to farming activities, migration, rural exodus, death or diseases that also increase the non-response rate.
- The security conditions and restriction that limit access to some program area, that limited the sampling only to more secure areas, missing several potential changes in those area;
- The limited number of reached participant during the FY20 implementation in some sampling frame, making that the required sample size of 525 is not meet. However, all the participants reached during FY20 are interviewed making the survey exhaustive for those frames.
- Difficult access to some villages due to roads deterioration in the rainy season.
- Data have been collected with women participants to the survey regarding their participation in nutrition activities implemented by Harande, among them pregnant women participation to ANC visits have been analyzed. Given that these data are not from a specific pregnant frame; they may not be enough representative for finding validation. They are used in the report to demonstrate evidences of change related to the ANC indicator.

VIII. TABULAR SUMARY

Table 5 : indicators estimates summary

No.	Source	Indicator Name or Data Point[16]	Level of Reporting (overall or disaggregate)	Value of Indicator	Standard Error of Indicator	Confidence Interval		Design Effect	Number of Cases	
						Lower Limit	Upper Limit		Number of Respondents	Number of Non-Respondents
30	BHA-8	Gross margin per hectare, animal or cage of selected product								
		Bean value chain								
		TP	*Total production (MT)*	26.4	N/A	N/A	N/A	2	253	2
		VS	*Value of sales ($)*	5097.9	N/A	N/A	N/A	2	253	2
		QS	*Quantity of sales (MT)*	9.523	N/A	N/A	N/A	2	253	2
		IC	*Inputs costs ($)*	4822.4	N/A	N/A	N/A	2	253	2
		UP	*Units of production (Hectare)*	118.0	N/A	N/A	N/A	2	253	2
		Estimated Gross Margin ($/Hectare)	Estimated Gross Margin ($/ha)	78.2	N/A	N/A	N/A	2	253	2
		Gross margin per hectare, animal or cage of selected product								
		Shallot (onion) value chain								
		TP	*Total production (MT)*	289.3	N/A	N/A	N/A	2	133	2
		VS	*Value of sales ($)*	75993.20	N/A	N/A	N/A	2	133	2
		QS	*Quantity of sales (MT)*	168	N/A	N/A	N/A	2	133	2
		IC	*Inputs costs ($)*	76964.1	N/A	N/A	N/A	2	133	2
		UP	*Units of production (Hectare)*	169.09	N/A	N/A	N/A	2	133	2
		Estimated Gross Margin ($/Hectare)	Estimated Gross Margin ($/ha)	320.44	N/A	N/A	N/A	2	133	2
		Poultry value chain								
		TP	*Total production (Poultry)*	4423	N/A	N/A	N/A	2	191	2
		VS	*Value of sales ($)*	3 013.3	N/A	N/A	N/A	2	191	2
		QS	*Quantity of sales (Poultry)*	1001	N/A	N/A	N/A	2	191	2
		IC	*Inputs costs ($)*	4 115.7	N/A	N/A	N/A	2	191	2
		UP	*Units of production Poultry)*	3418	N/A	N/A	N/A	2	191	2

[16] Only the component data points are reported for the "Gross Margins" and "Value of Incremental Sales" indicators. The estimates of the indicators themselves are calculated using BHAMIS with the reported component data points.

No.	Source	Indicator Name or Data Point[16]	Level of Reporting (overall or disaggregate)	Value of Indicator	Standard Error of Indicator	Confidence Interval		Design Effect	Number of Cases	
						Lower Limit	Upper Limit		Number of Respondents	Number of Non-Respondents
		Estimated Gross Margin *($/Poultry)*	Estimated Gross Margin *($/Poulty)*	2.69	N/A	He	N/A	2	191	2
39	BHA-15	Number of hectares under improved technologies or management practices as a result of USG assistance	N/A	4760.92	117	4644,35	4877,49	2	500	25
31	BHA-16	Value of small-holder incremental sales generated with USG assistance								
		Bean value chain								
		Reporting year of sales	*Reporting year of sales ($)*	5 097.85	N/A	N/A	N/A	2	253	2
		Total volume of sales	*Total volume of sales (MT)*	9.523	N/A	N/A	N/A	2	253	2
		Number of direct beneficiaries	*Number of direct beneficiaries*	307	N/A	N/A	N/A	2	253	2
		Adjusted baseline sale	*Adjusted baseline sale ($)*		N/A	N/A	N/A	2	253	2
		Estimated Value of incremental sales ($)	*Estimated Value of incremental sales ($)*	(20 805.275)	N/A	N/A	N/A	2	253	2
		Shallot (onion) value chain								
		Reporting year of sales	*Reporting year of sales*	75 993.20	N/A	N/A	N/A	2	133	2
		Total volume of sales	*Total volume of sales (MT)*	168	N/A	N/A	N/A	2	133	2
		Number of direct beneficiaries	*Number of direct beneficiaries*	778	N/A	N/A	N/A	2	133	2
		Adjusted baseline sale	*Adjusted baseline sale*		N/A	N/A	N/A	2	133	2
		Estimated Value of incremental sale ($)	*Estimated Value of incremental sales ($)*	(171 427.15)	N/A	N/A	N/A	2	133	2
		Poultry value chain								
		Reporting year of sales	*Reporting year of sales ($)*	3013.3	N/A	N/A	N/A	2	191	2
		Total volume of sales	*Total volume of sales (Poultry)*	1001	N/A	N/A	N/A	2	191	2
		Number of direct beneficiaries	*Number of direct beneficiaries*	146	N/A	N/A	N/A	2	191	2
		Adjusted baseline sale	*Adjusted baseline sale ($)*		N/A	N/A	N/A	2	191	2
		Estimated Value of incremental sales ($)	*Estimated Value of incremental sales ($)*	(7 182.366)	N/A	N/A	N/A	2	191	2
37	BHA-9a	Number of farmers and others who have applied improved technologies or management practices as a result of USG assistance	N/A	4 463	117	4 346	4 580	2	500	25

No.	Source	Indicator Name or Data Point[16]	Level of Reporting (overall or disaggregate)	Value of Indicator	Standard Error of Indicator	Confidence Interval		Design Effect	Number of Cases	
						Lower Limit	Upper Limit		Number of Respondents	Number of Non-Respondents
68	Custom	Percent of participants able to generate their IGA, MSME balance sheet	N/A	24%	3.7%	20.3%	27.7%	2	516	9
91	Custom	Percent of the targeted participants who identified an appropriate mechanism for the peaceful resolution of conflict in the past 12 months.	N/A	41.0%	4.4%	36.6%	45.4%	2	477	48
124	Custom	Percentage of citizen satisfied with the quality of food security/agriculture, health/nutrition and economic services they received in the past 12 months	N/A	86.0%	3.1%	82.9%	89.1%	2	477	48
126	Custom	Percentage of project participants who report improve access and quality of public service delivery (supporting food, health/nutrition and income security) in the past 12 months	N/A	86.0%	3.1%	82.9%	89.1%	2	477	48
49	Custom	Percentage of project participant youth reporting improvement of non-farm livelihoods in the past 12 months	N/A	80.0%	3.4%	76.6%	83.4%	2	265	260
51	Custom	Percentage of youth supported by the program who have qualified jobs	N/A	79%	3.5	75.5%	82.5%	2	265	260
153	BHA-14a	Number of farmers who used at least 3 sustainable crop, livestock and/or NRM practices and/or technologies:	N/A	4 374	117	4 257	4 491	2	500	25
154	BHA-81	Yield of targeted agricultural commodities among program participants with USG assistance **(BHA 81)**								
		Beans (MT/ha)	*Beans (MT/ha)*	*0.224*	*N/A*	*N/A*	*N/A*	*2*	*253*	*2*
		Shalot	*Shalot*	*1.71*	*N/A*	*N/A*	*N/A*	*200%*	*13300%*	*200%*
		Poultry	*Poultry*	*1.3*	*N/A*	*N/A*	*N/A*	*2*	*191*	*2*
34	Custom	Number of participants adopted post-harvest handling practices		4 176	117	4 059	4 293	2	500	25

IX. THE ACHIEVED SAMPLE AND NON RESPONSES ANALYSIS

The below table show the number of participants surveyed compared to the initial samples planned for this beneficiaries based survey:

Table 6: Number of surveys done compared to the number planned per frame

FRAME	Total reached beneficiary population	Expected sample size	Survey done	Non Response rate
Value chain farmers	**1512**	**583**	**577**	**1,03%**
Beans	372	255	253	0.78%
Poultry (chicken)	193	193	190	1.55%
Shallot	947	135	133	1.48%
On Farm farmers	**5 665**	**525**	500	**4.76%**
MSME	**3 569**	**525**	**516**	**1.71%**
Youth	**1018**	**525**	**265**	**49.52%**
Frame 5	**7 453**	**525**	**477**	**9.14%**
Total	**7 453**	**2 541**	**1 733**	

For the value chain, the MSME and the "all program participants frames", achieved interviews fall under the range of expected responses rate, but for the youth frame the rate is 49.7%, and over the expected range of 10% of non-responses rate. Figures show that half of expected youth where not available due to seasonal migration reason, rural exodus and displacements due the farming activities.

In data analysis process and indicators estimates production, non –response weighting was made for all the frames to compensate for the potential effect of the missing interviews on the overall data. The non-response weighting procedure indicated in FtF PaBS guide line was applied for each frame or frame combination.

The security issues and threats that occurred during the survey implementation period in the Bandiagara and Douentza area, the rainy season and people displacement, highly impact people availability in the villages. Many respondents were absent from their homes due to people movement, exodus and displacements in their farms for farming. Moreover, the non-responses rate of 10% adopted by the program since the FY19 PaBS still good for current survey.

X. THE GENERAL FINDINGS

The PaBS have been implemented in 4 communes namely: Dourou, Dandoli, Douentza and Koubewel Koundia. 48 villages have been reached through theses communes for data collection.

A total of 1,733 participants have been sampled for this PaBS, within them 11% refused the survey and 72% are female. That bring the total participant who responded to the survey in all the frames without double counting to 1,529. Note that participants that overlaps between frames during the survey and are counted once.
I appear that 28% are youth and others are young adults or adults aged over fifty years. The table below show respondents distribution by age groups.

Table 7 : PaBS Respondents distribution per age group

Age group	Number of respondents	%
14-17.9 years	18	1.0
18-29.9 years	419	27.0
30-49.9 years	758	49.0
+50 years	334	21.0
Total	1,529	100.0

Out of these 1,529 respondents interviewed come from 1,265 households and 18% of them are household heads. The average size of their household is 9 members varying between a minimum of 2 people and a maximum of 35.

Among survey respondents 37% owned a cell phone number and 23% can be joined trough another cell phone owner. This bring to 60% Program participants that may be reached by cell phone if needed. This information is crucial during COVID 19 time or insecurity threat where travel restrictions may occur.

XI. THE FINDINGS BY INDICATOR

11.1. Farmer's gross margin per hectare, per animal or per cage obtained with USG assistance (BHA 8)

Gross margin has been calculated for agricultural commodities (beans and shallot) and for poultry commodity supported by Harande since FY2017 as part of value chain activities.

For each of these commodities, the following table show non response rates achieved during the PaBS:

Table 8: Number of surveys done compared to the number planned for value chain frame

Value Chain	Total reached beneficiary population	Expected sample size	Survey done	Non Response rate
Beans	372	255	253	0.78%
Poultry (chicken)	193	193	191	1.55%
Shallot	947	135	133	1.48%
Total	**1512**	**583**	**577**	**1.03%**

The highest non response rate observed for the value chain commodities is 1,5% for poultry participants. All rates still very much less than the 10% expected for the survey. This sample are estimated then enough representative of their populations. How over, appropriate weighting adjustment has been made prior to data analysis to reflect to compensate potential effect of non-responses and sample selection.

Based on FY19 recommendations, for each value chain commodity data selection have been reinforced to insure that appropriate value chain respondents are taken in count into the data analysis. This is particularly regarding the practice of the commodity during the fiscal year, the objective of bringing entire or part of the production on the market and the small farmer definition that state a use of less than 5 hectares of land for the commodity production.

For beans:

Out of the 253 respondents, 223 (84%) confirm their effective participation to beans value chain activities during the FY20. Within those effective participants 94% have produced beans during the reporting period and 82% declared an objective to commercialize part or entire beans production on the market meaning practicing to beans value chain. The data analysis focus on those participants who practice beans as value chain during the FY20 to have a better estimation of gross margin data points.

Data analysis also looks at how participant are positioned into beans value chain segments. All beans participants are positioned on "production" segment, 6 out of 10 on "commercialization" segment and only 11% on the "conservation/transformation" segment. Figures show that some of producers overlaps on "production" and "commercialization" segments.

For Shallot:

Out of the 133 respondents, 118 (88%) confirm their effective participation to beans value chain activities during the FY20. Within those effective participants 98% have produced beans during the reporting period and 92% declared an objective to commercialize part or entire beans production on the market meaning practicing to shallot value chain. Here also, the data analysis focus on those participants who practice shallot as value chain during the FY20 to have a better estimation of gross margin data points.

As per beans, data analysis also looks at how participant are positioned into value chain segments. All shallot participants are positioned on "production" segment, 76% on "commercialization" segment and only 28% on the "conservation/transformation" segment. Figures show that some of producers overlaps on "production" and "commercialization" segments.

For Poultry:

Out of the 190 respondents, 156 (88%) confirm their effective participation to beans value chain activities during the FY20. Within those effective participants 97% have produced beans during the reporting period and 92% declared an objective to commercialize part or entire beans production on the market meaning practicing to shallot value chain. Here also, the data analysis focus on those participants who practice shallot as value chain during the FY20 to have a better estimation of gross margin data points.

As per previous commodities, data analysis also looks at how participant are positioned into value chain segments. All poultry participants are positioned on "production" segment, 66% on "commercialization" segment and only 1% on the "conservation/transformation" segment. Figures show that some of producers overlaps on "production" and "commercialization" segments.

For all value chain it appears that participant positioning on "production" and "commercialization" are more evident. This is great as Harande in its value chain strategy made the focus on these two segments.
Still Positioning on other important segment like "input or equipment provision", "conservation/transformation" or "provision of related services" like facilitation/negotiation/transport .. are very low or even "zero". It is also good to mention that for all commodities more that 90% of targeted participants practice the value chain activity.

The gross margin data points:
Following data points estimates have been computed for each value chain commodity. These data points estimates are computed from weighted survey data from each commodity:

Table 9: Data points calculated for gross margins

Value Chain	Units	FY17 Overall Achievement	FY18 Overall achievement	FY19 Overall achievement	FY2020 achievement		
					Male	Female	Overall
Beans							
Total production	MT	98.8	22.43	22.911	8.1	18.3	26.4
Value of sales	US $	5577.3	3 075.67	1 838.69	1715.8	3382.1	5097.9
Quantity of sales	MT	13.6	6.43	3.639	3.114	6.409	9.523
Inputs costs	US $	11224	4 169.16	9114.7	1384.5	3437.9	4822.4
Units of production	hectare	332.1	209.6	3 310.00	34.0	84.0	118.0
Beneficiaries			451	545	51	256	307
Estimated Gross margin	*US $ / hectare*	*84.7*	*31.3*	***0.744***	***91.06***	***73.72***	***78.82***
Shallot							
Total production	MT	n/a	50.14	59.238	47.2	242.1	289.3
Value of sales	US $	n/a	11 925.31	14299.857	11267.42	64725.78	75993.20
Quantity of sales	MT	n/a	23.77	34.509	26	141	168
Inputs costs	US $	n/a	8 019.05	9465.555	8150.1	68813.9	76964.1
Units of production	hectare	n/a	117.47	578	15.09	154	169.09
Beneficiaries			200	174	36	742	778
Estimated Gross margin	*US $ /hectare*	*n/a*	*145.88*	*26.093*	*807.91*	*272.32*	*320.44*
Poultry :							
Total production	Chicken	11 195	2 745	3 265	1 286	3 137	4 423
Value of sales	US $	7 203.7	1 140.89	998.06	786.0	2 227.4	3 013.3
Quantity of sales	Chicken	2 602	384	369	298	703	1001
Inputs costs	US $	2 648.6	1 667.893	3 109.289	1 645.8	2 469.8	4 115.7
Units of production	Chicken	7 887	1 832	3 718	1004	2 414	3 418
Beneficiaries			196	218	35	111	146
Estimated Gross margin	*US $ / Chicken*	*3.6*	*3.94*	***2.17***	***1.74***	***3.09***	***2.69***

n/a= not applicable as there is no male direct participant. 1US$= 552.769[17] FCFA

FY20 gross margins actuals for value chain commodities (Beans, Shallot and Chickens), though positive and have better achievements than the two previous years. It's obvious, that the quantity

[17] https://www1.oanda.com/lang/fr/currency/converter/

and specifically the value of sales have been improved compared to previous years for the respective commodities. This trend has been observed during the previous survey and that issue directly affected the overall value of gross margin. In fact, quantities sold for beans in FY20 represent only 36% of the total production while it was 13% in FY19 and 28.67% in FY18. For shallot and poultry in FY20 the quantity of sales achieved was respectively 58% and 23% against respectively 58,25% and 12,06% of the total production are being sold by producer in FY19.
A deepen analysis made on the units cost for sales achieved show that for all commodities FY20 sales are better than FY19 one's. An average increase of 9% have been observed and this impact positively the actuals of the gross margin.

Table 10 : Unit cost for sales per commodity

Unit costs for sales			
Commodity	**FY19**	**FY20**	**% increase**
Beans ($/MT)	505.272328	535.32	6%
Shallot ($/MT)	414.380509	453.3767	9%
Poultry ($/poultry)	2.70476965	3.010306	11%
Average increase			**9%**

Furthermore, there are some contextual factors (climate, conflict, adequate use of technologies, quality of soils, rainfall, ..., etc.) influencing the production and also the use made with the production. Expect shallot quantity of sales that reached 58% of the total production, bean and poultry still under 40%. It seems that for all the commodities, approximatively the half (50%) of the rest of the total production is used for household's consumption or other uses. The gross margin level so much affected then and changing quantity of sales trend to a higher level may improve the indicators. A ratio of 75% minimum of the total production destined for sale and 25% maximum for household consumption/other uses may suit to be a better scenario to encourage for value chain participant as their main objective is to put product on market and improve their gains.

Due to the complex formula used for gross margin calculation, standard error and confidence interval estimates are not available.

11.2. Yield of targeted agricultural commodities among program participants with USG assistance (BHA 81)

Based on gross margin data points, yield estimates have been computed for value chain commodities (beans, poultry and vegetables).

Table 11 : Data points with the final estimates (BHA-81 indicator)

Data points	Target FY19	FY2019 Estimates	Target FY20	FY2020 Estimates
Yield of targeted agricultural commodities among program participants with USG assistance (BHA 81)				
Beans (MT/ha)	*0.400*	*0.02*	*0.150*	*0.224*
Male	*0.500*	*0.02*	*0.150*	*0.239*
Female	*0.400*	*0.005*	*0.150*	*0.217*
Hectares planted (for crops)	*367*	*3310*	*157.0*	*118.0*
Male	200	591	47.0	34.0

Data points	Target FY19	FY2019 Estimates	Target FY20	FY2020 Estimates
Female	167	2719	110.0	84.0
Joint		0	0	0
Association-applied		0	0	0
Total production	*162*	*22.91*	*70.0*	*26.4*
Male	93.96	9.498	21.0	8.1
Female	68.04	13.412	49.0	18.3
Joint		0		0
Association-applied		0		0
Number of direct beneficiaries	735	545	315	307
Male	426.3	127	95	51
Female	308.7	418	220	256
Joint		0		0
Association-applied		0		0
Chickens (poultry)	*4.0*	*1.5*	*4.0*	*1.3*
Male	*4.0*	*1.7*	*4.0*	*1.3*
Female	*4.0*	*1.5*	*4.0*	*1.3*
Number of animals (number of poultry)	4 800	2 142	2 271	3 418
Male	1 200	652	780	1004
Female	3 600	1 490	1 491	2 414
Joint	0	0	0	0
Association-applied	0	0	0	0
Total production (number of poultry)	19 200	3 264	3 265	4 423
Male	4800	1088	1 088	1 286
Female	14 400	2 176	2 177	3 137
Joint		0		0
Association-applied		0		0
Number of direct beneficiaries	800	51	300	146
Male	200	51	150	35
Female	600	0	150	111
Joint		0		0
Association-applied		0		0
Vegetables (MT/ha)	*20*	*0.10*	*20.00*	*1.71*
Male	*21*	*0*	*18.00*	*1.81*
Female	*19.6*	*0.10*	*21.00*	*1.71*
Hectares planted (for crops); Number of animals (for milk. eggs); or Area (ha) of ponds or Number of crates (for fish)	21	578	117.47	169.09
Male	6	0	0	26
Female	15	578	117	141
Joint		0	0	0
Association-applied		0	0	0
Total production (kg. MT. number. or other unit of measure)	420	59.238	50.14	289.268
Male	126	0	0	47.188
Female	294	59.238	50.14	242.08
Joint		0	0	0
Association-applied		0	0	0
Number of direct beneficiaries	420	174	180	778
Male	126	0	0	36
Female	294	174	180	742
Joint		0		0
Association-applied		0		0

Except for beans where the actual yield is 30% over the expected one, for other commodities figures show that yield did not met the FY20 target even these estimates are better compared to the FY19 achievements. In addition, the yields recorded for these value chains influence and bring to the better gross margin actuals. For example, the yield for beans is 224 kg per hectare in FY20 against 5 kg per ha measured in FY19. Still even yield was improved it still low compared to the expected yield for beans farmer that may vary between 500 to 1,500 kg[18] per hectare in Mali depending of the type of improved seed and adequate technology used for production. *It is obvious that some improvement has been observed on the yield in general for all commodities*.

As per gross margin, due to the complex formula used for yield calculation, standard error and confidence interval estimates are not available.

11.3. Value of small-holder incremental sales generated with USG assistance (BHA 16)

The same data points used for gross margin are used to compute the value of small holder's incremental sales. The following data points have been used:

Table 12: Data points calculated for incremental sales

Value Chain	FY2018 achievement	FY2019 achievement	Target FY20	FY2020 achievement
Beans				
Reporting year sales	2 831.16	1 838.69	33 803.00	5 097.85
Total volume of sales	6.43	3.639	49	9.523
Number of direct beneficiaries	451	545	315	307
Adjusted baseline sale	38 053.13			
Estimated Value of incremental sales	(35 221.96)	(44 145.685)	7.224.9	(20 805.275)
Shallot				
Reporting year sales	11 925.31	14 299.857	11 925.31	75 993.20
Total volume of sales	23.77	34.509	24	168
Number of direct beneficiaries	200	174	180	778
Adjusted baseline sale	115 000.00			
Estimated Value of incremental sales	(103 074.69)	(85 750.143)	2625	(171 427.15)
Poultry (chicken)				
Reporting year sales	1 140.89	998.06	1996.0	3013.3
Total volume of sales	384	369	738	1001
Number of direct beneficiaries	196	218	300	146
Adjusted baseline sale	13 687.33			
Estimated Value of incremental sales	(12 546.44)	(14 225.607)	796	(7 182.366)

As for gross margin analysis, for all the commodities (bean, shallot and chicken) the value of small farmers' incremental sales show some improvement but producers did not really gain on their production sales. Data analysis question the accuracy of baseline data that have been set for this indicator and locked into the BHA MIS system at the startup of the program. Comparisons made over the program implementation years show that even for year where results are quite

[18] http://scripts.farmradio.fm/fr/radio-resource-packs/103-production-du-niebe/9595-2/ And http://www.fao.org/3/i0062f/i0062f03.pdf

good like FY18 or FY20 overall incremental sales still negative, while positive performance should be observed.
Data analysis conclude on the assumption that the baseline value has been certainly over estimate given for Harande implementation context. This is a great learning for future DFSA that may measure such indicator. Baseline value of this king of indicator influenced by several economical and contextual factors, should be measure and set properly trough base value establishment survey or at least the first annual survey organized by the program.

Here also due to the complex formula used for value of incremental sale calculation, standard error and confidence interval estimates are not available.

11.4. The Number of farmers and others who have applied improved technologies or management practices with USG assistance (BHA 9a)

The number of farmers and others who have applied improved technologies and number of hectares under those technologies are computed form agricultural frame including value chain and other on farm participants.
After overall weighting including non-responses, the following estimates have been computed form the agricultural frame (frame 1):

Table 13: Data points with the final estimates (BHA-9a indicator)

Data points	FY2018 Estimates	FY2019 Estimates	FY2020 Target	FY2020 Estimates
Number of farmers and others who have applied improved technologies or management practices with USG assistance (BHA 9a)	2 639	2 806	5 273	4 463
Producers[19]	2 553	2 793	4 811	4 432
Crop genetics,	1 893	2272	3512	3710
Cultural practices	2 115	2498	3512	3799
Livestock management	0	72	658	52
Wild fishing technique/gear	0	0	0	0
Aquaculture management	0	0	31	0
Pest management	844	1638	2634	2232
Disease Management:	844	1218	4089	1789
Soil-related fertility and conservation	2 501	2740	3512	4331
Irrigation	489	615	658	1307
Water management-non-irrigation based	664	1090	0	1769
Climate mitigation	1 295	2135	1227	3640
Climate adaptation	1 224	1751	4089	3306
Marketing and distribution	1 227	1612	481	3439
Post-harvest – handling & storage	1 746	2477	2887	4176
Value-added processing	977	1725	1447	3164
Other	111	283	241	642
Sex		2793	4811	4432
Male	487	1216	1443	1300

[19] *e.g. farmers, ranchers, and other primary sector producers of food and non-food crops, livestock products, wild fisheries, aquaculture, agro-forestry, and natural resource-based products*

Data points	FY2018 Estimates	FY2019 Estimates	FY2020 Target	FY2020 Estimates
Female	2 066	1577	3368	3132
Others[20]	86	13	462	31
Crop genetics,	60	6	337	9
Cultural practices	86	13	337	20
Livestock management	0	0	63	0
Wild fishing technique/gear	0	0	0	0
Aquaculture management	0	0	3	0
Pest management	52	13	252	10
Disease Management:	52	0	392	10
Soil-related fertility and conservation	86	6	337	20
Irrigation	0	0	63	0
Water management-non-irrigation based	26	0	0	9
Climate mitigation	86	6	117	20
Climate adaptation	25	6	392	0
Marketing and distribution	52	6	46	20
Post-harvest – handling & storage	73	13	277	20
Value-added processing	39	0	138	20
Other	0	0	23	20
Sex			462	31
Male	86	13	138	31
Female	0	0	323	0

The table above show that 85% of farmers and others targeted have applied improved technologies and management practices mostly promoted by Harande during the FY20 implementation. The number of farmers estimates show that farmers had obviously been continuously provided with knowledge in using technologies and management practices and this have been increased through Harande. *It comes out that for most of the technologies and management practices the number of producers and other reached in FY20 increased with regard of the targets and the previous year achievements. Despite the disturbances due to COVID 19 and the exclusion of several communes due to insecurity where surfaces under improved technologies are widespread; the figures show some improvements and increasing trends overs years.*

Nonetheless, the program contributed to foster achievement and contributed significantly to increase the use of these technologies and management practices among direct participants in the implementation area. *The FFBS highly contributed to this success and FY20 achievement show all farmers interest with regards of promoted technologies and practices. This may bring evidence of a good acceptance and adequacy of the FFBS strategy within this intervention area. It results also that some of the technologies and practices declared to be used by the farmers not promoted by Harande comes from other partner's interventions and are finally complementary.*

The table below presents computed standard indicator error and confidence interval estimates:

Table 14: Standard error and confidence interval estimates (BHA-9 indicator)

[20] *e.g. individual processors [but not firms], rural entrepreneurs, traders, natural resource managers, extension agents*

Overall (t)	z	s actual	D	n	N	Margin of error	Lower	Upper
4 463	1.96	0,166	2	500	5 665	117	4 346	4 580

11.5. The Number of farmers who used at least 3 sustainable agricultures (crops, livestock and NRM) practices and/or technologies (BHA 14a)

The number of farmers who used at least 3 sustainable agriculture technology or practice in crop, livestock and NRM is computed form agricultural frame including value chain and other on farm participants.
After overall weighting including non-responses, the following estimates have been computed form the agricultural frame (frame 1):

Table 15 : Data points with the final estimates (BHA-14a indicator)

Data points	Target FY19	FY2019 Estimates (Farmers)	Target FY20	FY2020 Estimates (Farmers)
Number of farmers who used at least 3 sustainable agriculture (crops, livestock and NRM) practices and/or technologies (BHA 14a)	7130	2738	4811	4374
Sustainable Agriculture crop practice and/or technology				
Number of male farmers who used at least 3 sustainable crop practices and /or technologies	1562	1194	1054	1311
Number of female farmers who used at least 3 sustainable crop practices and /or technologies	3644	1534	2458	3064
Number of sustainable crop practices and/or technologies	3	3	3	3
Total number of direct beneficiaries participating in sustainable crop practices and/or technologies	5206	2784	3512	4375
Sustainable Agriculture livestock practice and/or technology				
Number of male farmers who used at least 3 sustainable livestock practices and /or technologies	1562	6	197	20
Number of female farmers who used at least 3 sustainable livestock practices and /or technologies	3644	37	461	21
Number of sustainable livestock practices and/or technologies	3	3	3	3
Total number of direct beneficiaries participating in sustainable livestock practices and/or technologies	5206	72	658	53
Sustainable Agriculture NRM practice and/or technology				
Number of male farmers who used at least 3 sustainable NRM practices and /or technologies	1818	428	1054	650
Number of female farmers who used at least 3 sustainable NRM practices and /or technologies	4242	253	2458	915
Number of sustainable NRM practices and/or technologies	3	3	3	3
Total number of direct beneficiaries' participating in sustainable NRM practices and/or technologies	6061	2020	3512	3767

Compared to expected target for FY20, the actual achievement is 91% of target for the overall indicator.
The farmers mostly apply the sustainable agriculture crop practices and in this category 100% of farmers practicing are able to practice at least 3 technologies and practices. On the contrary for the NRM and livestock farmers respectively only 42% and 79% of farmers practicing are able to practice at least 3 technologies and practices. Still the number of farmers in livestock is very low and this is normal as the program didn't focus much on this category of farmers, as only poultry producers have been supported.

Table 16: Standard error and confidence interval estimates (BHA-14a indicator)

Overall (t)	z	s actual	D	n	N	Margin of error	Lower	Upper
4 374	1,96	0,166	2	500	5665	117	4257	4491

11.6. The Number of hectares of land under improved technologies or management practices with USG assistance (BHA 15)

The number of hectares under improved technologies or management practices is computed from the same sampling size as BHA-9a presented below. Non-response weighting has been taken in count in final weighting of the indicator estimate for this PaBS. Following data points have been computed:

Table 17: Data points with the final indicator estimates (BHA-15 indicator)

Data points	FY2018 Estimates (hectares)	Targets FY19	FY2019 Estimates (hectares)	Targets FY20	FY2020 Estimates (hectares)
Number of hectares of land under improved technologies or management practices with USG assistance (BHA 15)	7 002.81	4806	4364	5023	4760,92
Crop genetics,	5 265.63	3845	3552	4018	4107,06
Cultural practices	6 227.72	3845	4069	4018	4225,84
Pest management	3 125.62	2884	2550	3014	2709,19
Disease Management:	3 125.62	4085	1921	4269	2319,89
Soil-related fertility and conservation	6 986.07	3845	4312	4018	4756,58
Irrigation	622.42	721	1194	753	1320,61
Water management-non-irrigation based	1 610.94	0	1863	0	2128,01
Climate mitigation	7 002.81	4085	3656	4269	4254,55
Climate adaptation	3 232.44	4085	3057	4269	3702,83
Other: e.g. improved mechanical and physical land preparation	0	240	470	251	3831,8
Total w/one or more improved technology/practice.	7 002.81	4806	4364	5023	4760,92

Data points	FY2018 Estimates (hectares)	Targets FY19	FY2019 Estimates (hectares)	Targets FY20	FY2020 Estimates (hectares)
Sex	7002,81	4806	4364		4760,92
Male	2 584,40	1442	2539	1507	2323,86
Female	4 418,41	3364	1825	3516	2437,06
Joint	0	0	0	0	0
Association-applied	0	0	0	0	0

The number of hectares under improved technologies estimates confirmed that farmers had knowledge in using technologies and management practices. Previous years trends observed are maintained over years Even though some of this knowledge have been gained before, then reinforced through the Harande program.

In terms of annual targets achievement, figures show that Harande reached 91% of its FY20 target concerning the indicator while the achievement was 82% in FY19.
Also, data show an average hectare of land under improved technologies or management practices used by farmers 1.09 hectare. This confirm means measured in previous years that is 1 hectare per small farmer.

The following table, presents computed standard indicator error and confidence interval estimates:

Table 18: Standard error and confidence interval estimates (BHA-15 indicator)

Overall (t)	z	s actual	D	n	N	Margin of error	Lower	Upper
4760,92	1,96	0,166	2	500	5665	117	4644,35	4877,49

11.7. The Percentage of youth supported by the program who have qualified jobs (Custom #51)

The percentage of youth participants reporting improvement of non-farm livelihoods in the reporting period is computed through the youth frame.

FRAME	Total reached beneficiary population	Expected sample size	Survey done	Non Response rate
Youth	**1018**	**525**	**265**	**49.52%**

The non-response rate observed in this frame is very high compared to the expected maximum. This was due to the very big mobility of youth for rural exodus or seasonal employment in the farming exploitations.

After weight and non-response adjustments made on collected data analysis have been done and indicator estimates below have been computed:

Table 19: Data points with the final indicator (Custom indicator #51)

Modalities	FY17 Achievement (%)	FY18 Achievement (%)	FY19 Achievement (%)	FY20 Achievement (%)
Youth supported by the program who have qualified jobs	54.3%	74.3%	75.0%	79,00%
Number of interview conducted	n=265	n=450	n=391	n=265

This indicator weighted estimate show that 79.0% of youth participant have qualified jobs through the non-farm activities to support their livelihoods, against 75% for FY19, 74.3% for FY18 and 54.3% for FY17. Thus, the program contributes to increase the indicator level by 24% since FY17. These figures also show that there are real needs and potential in terms of youth education, vocational training and entrepreneurship.

According to respondents they got qualify job because of following insight from Harande: benefit for vocational training and qualify: 51%; completed an apprenticeship and qualify: 32%; benefit program support: 55%; the activity is profitable and demand exists: 35%. Finally, the Harande Youth interventions strategy seems to be successful as positive trends observed over implementations years are maintained.

The following table presents computed standard indicator error and confidence interval estimates are:

Table 20: Standard error and confidence interval estimates (Custom indicator #51)

Statistic	Confidence level =	Zα=	Margin of error =	Lower	Upper
Estimate	95%	1.96	3.5%	75.5%	82.5%

11.8. The Percentage of project participant youth reporting improvement of non-farm livelihoods in the past 12 months (Custom #49)

The percentage of youth participants reporting improvement of non-farm livelihoods in the reporting period, as the previous one is computed through the youth frame.
Approximatively 92% of youth who responded to the survey declare that their livelihoods are based mainly on non-farm activities. It results from this finding that approximatively 7% of targeted youth failed to build their livelihoods on non-farm activities.

The main livelihood activities practiced by youth respondent are:

Table 21 : Non-farm livelihood activities practiced by youth

Activity	%
Hairdressing	*12,3%*
knitting	*12,1%*
Masonry	*10,4%*
Restoration	*8,7%*
Arts and crafts	*8,0%*

Activity	%
Vulcanization	*7,6%*
Trade / Shop	*6,4%*
Motorcycle Mechanics	*6,3%*
stone cut	*5,5%*
phone repair	*5,3%*
Soap factory	*5,3%*
sewing cut	4,9%
Joinery	3,2%
indigo dye	0,9%
Pastry	0,9%
Local competence (AV, ASCom, Relais, etc.)	0,6%
Metal carpentry / Allu (welding)	0,5%
Hiring	0,5%
Auto mechanics	0,2%
Miller (mill)	0,2%
Electricity / Solar panels	0,2%
painting	0,1%

It results that non-farm livelihoods activities practiced by youth are very diversified and cover most of the existing activities in rural area. The analysis of the top 10 of these activities shows that the services offered are requested daily by the customers and the potential demand really exist. This is a good basis for their sustainability and profitability.

After weight adjustment made on collected data, indicator estimates below have been computed:

Table 22: Data points with the final estimates (Custom indicator #49)

Modalities	FY17 Achievement (%)	FY18 Achievement (%)	FY19 Achievement (%)	FY20 Achievement (%)
Percentage of project participant youth reporting improvement of non-farm livelihoods in the past 12 months	40.4%	73.0%	78,0%	80.00%
Number of interview conducted	n=265	n=450	n=391	n=265

This indicator weighted estimate show that 80.0% of youth participant report improvement of non-farm livelihoods during the last 12 months, against 78.0%, 73% and 40% respectively for FY19, FY 18 and FY17. *This result indicates progressive increase of youth practicing non-farm activities capacities to support their livelihoods. To illustrate that respondents provided the extend percentage to with their activities are contributing to their income and livelihoods: 75% contribute to income and livelihoods: 44%; 50% contribute to income and livelihoods: 31%; 25% contribute to income and livelihoods: 18%; 10% contribute to income and livelihoods: 4%; 100% contribute to income and livelihoods: 1%.*

It's obvious, that Harande contributions to those changes between FY17 and FY20 is attributable to non-farm livelihoods activities like vocational and entrepreneurship support. These success evidences bellow reinforce the finding expressed above, stating successful youth interventions strategy implementation by Harande. For this indicator, also the positive trends observed over implementations years are maintained.

The following table presents computed standard indicator error and confidence interval estimates:

Table 23: Standard error and confidence interval estimates (Custom indicator #49)

Statistic	Confidence level =	Zα=	Margin of error =	Lower	Upper
Estimate	95%	1.96	3.4%	76.6%	83.4%

11.9. Percentage participants able to generate their IGA, MSME balance sheet (Custom #68)

The percentage of participants able to generate their IGA, MSME balance sheet, is computed from the financial services sample after overall weighting process. Following table show non response rate achieved for that frame.

FRAME	Total reached beneficiary population	Expected sample size	Survey done	Non Response rate
MSME	**3 569**	**525**	**516**	**1.71%**

Data analysis results show that, 42% of respondents declared they have been trained to generate IGA or MSME balance sheet. The table below presents the estimates computed from the survey:

Table 24: Data points with the final estimates (Custom indicator #68)

Modalities	FY17 Achievement (%)	FY18 Achievement (%)	FY19 Achievement (%)	FY20 Achievement (%)
Percent of participants able to generate their IGA, MSME balance sheet	0.6%	46.2%	14,7%	24,0%
Number of interview conducted	n=462	n=825	n=447	n=516

Among the 3 569 participants of the frame after weighting, 24% declare to be able to generate their IGA and enterprise balance sheet. Also results show that only 42% of this frame participants benefits of training on how to generate IGA, MSME balance sheet. The indicator estimate is closely linked to the training efforts accomplished. Considering the low literacy rates in the population it is good to see that half of participant who benefit of training on balance sheet establishment where able to proceed.

Table 25: Standard error and confidence interval estimates (Custom indicator #68)

Statistic	Confidence level =	Zα=	Margin of error =	Lower	Upper
Estimate	95%	1.96	3.7%	20.3%	27.7%

11.10. The Percentage of project participants who report improve access and quality of public service delivery (supporting food, health/nutrition and income security) in the past 12 months (Custom #126)

The percentage of project participants reporting improvements in access and quality of at least one public service on food, health nutrition and income security is computed from the All program participants sample frame. The following table show non response rate achieved for that frame.

FRAME	Total reached beneficiary population	Expected sample size	Survey done	Non Response rate
Frame 5	**7 453**	**525**	**477**	**9.14%**
Total	**7 453**	**2 541**	**1 733**	

After overall weighting process the following data points have been computed:

Table 26: Data points with the final (Custom indicator #126)

Modalities	FY17 Achievement (%)	FY18 Achievement (%)	FY19 Achievement (%)	FY20 Achievement (%)
Project participants reporting improve access and quality of public service delivery (supporting food, health/nutrition and income security) in the past 12 months	N/A	N/A	91.2%	86%
Number of interview conducted	n=829	n=1 783	n=545	N=477

This indicator weighted estimate result that 86% of 7,453 direct Harande participants reported to see improvement in the access and the quality of at least one public service available in their area during the reporting period. This achievement is little bit less that FY19 achievement. It shows that despite current insecurity situation that disturb public services functionality in the intervention area in general, service providers still accountable to population. More over this result is a good rate in terms of performance achievement, it calls for more advocacy from Harande to expand and improve the services coverage and quality. Table below presents computed standard indicator error and confidence interval estimates:

Table 27: Standard error and confidence interval estimates (Custom indicator #126)

Statistic	Confidence level =	Zα=	Margin of error =	Lower	Upper
Estimate	95%	1.96	3.1%	82.9%	89.1%

11.11. Percentage of citizen satisfied with the quality of food security/agriculture, health/nutrition and economic services they received in the past 12 months (Custom #124)

The percentage of people reporting satisfaction with the quality of food, nutrition and economic services is also derived from All program participants sample. Following data points have been computed:

Table 28: Data points with the final indicator (Custom indicator #124)

Modalities	FY17 Achievement (%)	FY18 Achievement (%)	FY19 Achievement (%)	FY20 Achievement (%)
Percentage of citizen satisfied with the quality of food security/agriculture, health / nutrition and economic services they received in the past 12 months	84.1%	84.5%	91.2%	86%
Number of interview conducted	n=829	n=1 783	n=554	n=477

This indicator weighted estimate show that 86% of all program direct participants are satisfied with food, health/nutrition and economic public service during the reporting period, compared to the 91.2%, 84.5% and 84% observed respectively for FY19, FY18 and FY17. The indicator level is lower than the previous year one but in line with trends observed for this indicator. It still good, record a significant change and inform on the quality and the effectiveness of the provided services.

Also, this indicator still blind the fact that some of the service providers (technical services, etc.) have deserted the program intervention area due to insecurity treats targeting them. So, Harande may have contributed somehow during three achieved fiscal years through social accountability activities to maintain this level. Table below presents computed standard indicator error and confidence interval estimates:

Table 29: Standard error and confidence interval estimates (Custom indicator #124)

Statistic	Confidence level =	Zα=	Margin of error =	Lower	Upper
Estimate	95%	1.96	3.1%	82.9%	89.1%

11.12. The Percent of the targeted participants who identified an appropriate mechanism for the peaceful resolution of conflict in the past 12 months (Custom #91)

The percent of targeted participants who identified appropriate mechanism for peaceful resolution of conflict in the past 12 months is derived also from all program participants sample like the previous indicator. According to the program conflict study implemented in FY16 and validated by PaBS surveys FY17, FY18 and FY19, appropriate mechanisms should be supporting the establishment of state compensation mechanisms.

The data analysis revels that 48% of people who responded to the conflict survey declared to be involved in conflict resolution in their community or surrounding communities during the past 12 months. *They have been involved in several type of conflict resolutions in that time frame. The nature of conflict they participate are detailed: Conflicts between families: 61%; Neighborhood conflicts: 55%; Intra-household conflicts: 32%; Conflicts between farmers and herders: 20%; Gender based Violence: 6%; Armed groups violence: 2%; Conflicts in two or more communities: 0%.*
It is very good to see that conflict between communities is not mentioned in the occurred conflicts. It also important to note that conflict between farmers and herders ere mentioned only by 20%, this is great improvement in that area where this type of conflict used to have very high prevalence few years ago. The conflicts with high rates mentioned by respondents are mainly those between or within families or households. Conflict related to GBV have been mentioned by 6% or respondent, this is also very important to highlight because of its sensitivity and complexity to mitigate.

The following table presents computed data points computed for the conflict related indicator:

Table 30: Data points with the final indicator (Custom indicator #91)

Modalities	FY17 Achievement (%)	FY18 Achievement (%)	FY19 Achievement (%)	FY20 Achievement (%)
Percent of targeted participants who identified appropriate peaceful mechanisms	13.4%	17.9%	27.1%	41%
Number of interview conducted	n=829	n=1 783	n=554	n=477

It came from the survey findings that an estimate of 41% of program direct participants declare to able to identify peaceful mechanisms for conflict resolution during reporting period, against 27%, 17.9% and 13.4% for FY19, FY18 and FY17 respectively. As Harande implemented activities (training, sensitization, setting up and capacity building of land management committees, etc..) during implementing years, the program certainly contributes to this performance increase (+27% since implementation starts).

Data analysis in more details the conflict peaceful mechanisms used by the survey respondents. Following findings have been found: amicable resolution: 71%; family intervention: 53%; joking relationship: 18%; intervention of a traditional authority:16%; intervention of a religious authority: 8%; intervention of a consultation framework: 4%; intervention of a state authority: 2%; Intra-community peace promotion activity:1%
It is really great to mention that conflict awareness has been raised among program participant in this area. Figure show better willingness of ability to negotiate a win-win peaceful solution by promoting dialogue between the parties in conflict. Traditional and religious institutions seem also to be more preferred to formal governments ones.

The following table presents computed standard indicator error and confidence interval estimates:

Table 31: Standard indicator error and confidence interval estimates (Custom indicator #91)

Statistic	Confidence level =	Zα=	Margin of error =	Lower	Upper
Estimate	95%	1.96	4.4%	36.6%	45.4%

11.13. Number of participants adopted post-harvest handling practices (Custom #34)

The number of participants who adopted post-harvest handling practices is a sub-set of the indicator BHA-9a. It is computed form agricultural frame (frame 1). After overall weighting including non-responses, the following estimates have been computed:

Table 32: Data points with the final estimates (Custom #34 indicator)

Data points	FY2018 Estimates	FY2019 Estimates	FY2020 Target	FY2020 Estimates
Number of participants who adopted post-harvest handling practices (Custom #34)	1819	2490	3164	4196
Producers	1 746	2477	2887	4176
Others	73	13	277	20

Among 5,665 participants reached with agricultural/livelihoods activities 74% have adopted post-harvest handling practices as part of their on farm activities during the FY20. 70.3% of the reached participants are female. Adopters have been disaggregated per each type of technology or practice used: Improvement of packaging techniques and practices (PICS[21] Bags): 55%; Improved transport, losses and insect control: 57%; Improved temperature and humidity control: 83%; improving quality control, sorting and grading technologies and practices: 82%; the processing of food products: 36%; storage in warehouses :44%.

It is obvious that at least 6 farmers out of 10 who have a good understanding of post-harvest management and they are focusing and using technologies and practices that helps to store properly and keep the quality of the production like using appropriate bags for storage, insect-temperature and humidity control. This may bring substantial contribution to their revenues as losses are minimized as much as possible.

The following table presents computed standard indicator error and confidence interval estimates:

Table 33: Standard error and confidence interval estimates (Custom #34 indicator)

Overall (t)	z	s actual	D	n	N	Margin of error	Lower	Upper
4,176	1.96	0,166	2	500	5 665	117	4,059	4,293

[21] Purdue Improved Crop Storage (PICS)

11.14. The antenatal care (ANC) visits during pregnancy analysis (BHA-53)

Data collected for "the number of live births receiving at least four antenatal care (ANC) visits during pregnancy" have been added to the survey to insure some data collection with eligible women who didn't accomplish the four expected ANC. This aims to have better understanding of why the four requested ANC completion is not effective for many pregnant women. Informations such as motivations, constraints, and other justifications have been also collected to better document the findings that come out. This will help in lesson learning from this indicator that performance is low over years despite the program effort in sensitization.

The survey has been administrated to women participating to nutrition activities implemented by Harande. A total of 413 women responded to the survey and among them 183 (44%) have participated to Care groups activities implemented by Harande and only 82 (19%) of them were pregnant during the last 12 months.

Data analysis then focused on those women who got pregnant and following table show the distribution of the places where they give birth:

Table 34 : Place where pregnant respondents women give birth

Places where they give birth	Percent
Not in Health center (At home, Other places)	38%
In a Heath center (Maternity, CSCOM, Hospital, CSREF)	62%
	n=82

Results show that 62% of them give birth in a health center, this is a great achievement in this area where insecurity may limit displacement to health centers.

Regarding the ANC visits it is great to note that behavior changed as 98,8% of women did at least one visit during their pregnancy. Among respondents 51% have reached the required 4 ANC expected and 80% did at least 3 ANC. This is a great achievement in Harande intervention area knowing that ANC figures are much more low at the beginning of the program.

Table 35: Number of ANC visit done during pregnancy

Number of ANC visit done during pregnancy	Percent
0 ANC Visit	1,2%
1 ANC Visit	6,1%
2 ANC Visits	12,2%
3 ANC Visits	29,3%
4 ANC Visits	51,2%
	n=82

Analysis have been deepened for women who didn't reached the four required ANC visit to better understand what are the reason of that situation.

Table 36: Number of ANC visit done during pregnancy

Number of ANC visit done during pregnancy	Percent
Have never been sensitized	2%
Didn't see the interest of ANC Visit	5%
There are some cultural barriers	2%
Women workload	32%
Husband refusal	0%
Late awareness of the pregnancy	22%
Accessibility / Distance from the center	22%
Transportation issue	17%
ANC fees payment issue	17%

Low quality of ANC services offered	0%
	n=40

It come out of these data that there are several factors limiting pregnant women to achieve the 4 required ANC visit during their pregnancy. *Many factors are already known but they are confirmed by these findings. The main ones highlighted are:*

- ✓ *women's workload with multiple tasks within their household (32%);*
- ✓ *the late awareness of the pregnancy (22%) that make them missing some months of the pregnancy period. The remaining time is then not sufficient to have the 4 required, they do maximum 3 ANC;*
- ✓ *the accessibility or distance from the center (22%) that is crucial as long displacements are very difficult and very risky for pregnant women. Some of the health center are far from the village and without appropriate and secure transportation mean women choose to not proceed ANC.*
- ✓ *the transportation issue (17%), confirm the previous factor as vehicles reaching villages to health center are not regular, women get them usually the weekly market days and transport conditions are not comfortable for them. If they missed that opportunity they have to postpone to another week.*
- ✓ *ANC fees payment issue (17%), given the extreme vulnerability of households in this area t is obvious that those with low revenue may prioritize foods procurements that any other need. If the husband didn't provide for the money and the women usually not practicing any IGA, she simply abandon that ANC visit.*

It is great to note these important awareness changes as "husband refusal" or low quality of ANC services" are not mentioned by the respondents as limiting factors, they used to be at the beginning of Harande. Care group strategy implemented by Harande had a great contribution in these positive changes production.

11.15. The enriched flour contribution to health and nutrition

Among 413 women who responded to the nutrition part survey, 218 responded to the questions related to the enriched flour consumption by themselves of their children. *Out of these 218 women, 78% declared that themselves and/or their children have consumed the enriched flour promoted by Harande. This represent 8 out of 10 women and show how spread was the implementation and the level of acceptance of the enriched floor activity.*

According to consumers the advantages observed after the use of the enriched flour are following:

Table 37: The advantages of enriched flour consumption

Advantages	Percent
Good nutritional status of the child	83%
Protects against disease	68%
Give strength to the child	61%
Prevents malnutrition	57%
Normal growth of the child	48%
Good nutritional status of pregnant women	38%
Good general health	45%
Fills the nutritional needs / deficits of the child	18%
Varied and diversified diet (women and children)	17%
	n=171

It is obvious that enriched flour brings significant changes perceptible by women. This local produced flour has been so much appreciated that 8 women out of 10 women who responded, supported that it's bring relevant contribution to especially children under two good nutritional status. Also it is noted that 6 women out of 10 support that enriched flour help to protect against diseases, strengthen the children health and contribute to prevent malnutrition.

11.16. The CARE Resilience and Gender integration progress Marker analysis

This section present the results of CARE resilience and gender integration marker assessment made during this PaBS. CARE markers integration review have been done in order to provide some evidences for learning purpose. CARE define progress markers for resilience integration[22] and for gender integration[23] trough witch assessment have been done to see to what extend these two topics have been addressed and taken in count in Harande programming and implementation. Through this survey CARE captured the perceptions and appreciations of program participants on the extent to which they think that Harande address key resilience and gender benchmarks defined in the two markers. Individual program participants from the overall program participant sample, have been interviewed on questions related to these two topic.

11.16.1. The resilience Marker Analysis

The resilience integration data analysis, was first focused on the most recurrent shocks- stresses and potential crises linked to climate change identification. It appears that 89% of respondents declared to have identified those recurrent shocks- stresses and potential crises.

The following table show that the main recurrent shocks and stresses encountered by communities are economical related (63%); meteorological related (44%), political and conflict related (41%) and Social related (41%).

Table 38 : Type of recurrent shocks- stresses and potential crises occurring in communities

Type of recurrent shocks- stresses and potential crises	Percent
Economical	63%
Meteorological	44%
Policies and Conflicts	41%
Social	41%
Diseases and Epidemics	24%
Geo-Physics	6%
Technological	4%
	n=7,452 (weighted)

Note that 93% of respondents declared that the project has strengthen capacities of vulnerable individuals or communities to manage these main recurrent crises /shocks occurring within their context. It is great to note that adaptation to evolving conditions, ability to absorb shocks and capacity to anticipate risks are the main capacities raised by Harande with respectively 77%,

[22] CARE Resilience Marker can be found : https://careclimatechange.org/cares-resilience-marker/
[23] CARE gender marker can be found : https://insights.careinternational.org.uk/images/in-practice/Gender-marker/care_gender_marker_external_comms-1.pdf

69%, 53% of respondents who mention them. At least half of respondents mention these three capacities as shown in the following table:

Table 39 : Type of capacities raised by the project

Type of capacities raised by the project	Percent
Capacity to adapt to evolving conditions	77%
Ability to absorb shocks & stresses	69%
Capacity to anticipate risks	53%
Capacity to transform systems and structures	20%
	n=7,452 (weighted)

In addition, it appears from survey results that 77% of respondents declared that the project has strengthen assets of vulnerable individual or community in order to allow them to cope with the main occurring crises or shocks in their context. Detailed analysis show that reinforced assets are: the human potential: including skills, knowledge, education, health and individual motivation (68%); the social capital including extended family, social relations, community cohesion, voice and political influence (49%); economical resources: including market access, saving, insurance mechanism, livestock and productive assets (61%); Physical capital including tools, infrastructure, productive land and basic services such as water supply, hospitals (32%); natural resources including forest, pastures lands, water, soils and environmental resources and biodiversity (15%).

The resilience integration also analysis the issue addressing directly the most significant drivers of risk that cause the main shocks and stresses occurring in their communities.

Table 40 : Level of addressing of most significant drivers of risk

Level of addressing of most significant drivers of risk	Percent
The project does *not address the most significant drivers of risk*	7%
The project *engages in ad hoc actions* to address the most significant drivers of risk	62%
The project addresses *one* most significant driver of risk	6%
The project addresses *two* most significant drivers of risk in a coherent way	7.1%
The project addresses *three or more* significant drivers of risk in a coherent way	11%
Don't know	5
	n=7,452 (weighted)

It appears from the table above that more than 6 participants among 10 estimated that Harande "engage in ad hoc actions to address the most significant drivers of risk". This perception is good but still low on the scale of appreciation (which is 1 to 10) of this criteria. Note that only 11% of the respondents declare that Harande reach the top score for this criteria appreciation.

The extend to witch Harande influence formal or informal rules, plans, policies or legislation to increase resilience of vulnerable individuals and communities to the three main recurrent shocks and stresses have been also assessed. Participants responses have been resumes in the table below:

Table 41 : Extend to witch the project influence formal or informal rules, plans, policies or legislation to increase resilience

Extend to witch the project influence formal or informal rules, plans, policies or legislation to increase resilience	Percent
The project does not influence rules, plans, policies, legislation	17%
The project engages in ad hoc actions that influence rules, plans, policies, legislation	44%
The project has a deliberate strategy to influence rules, plans, policies, legislation	14,%
The project has a deliberate strategy + coherent set of actions to influence rules, plans, policies, legislation	12%
The project has a deliberate strategy + a coherent set of actions + capacity + resources to influence rules, plans, policies, legislation	5%
Don't know	4%
	n=7,452 (weighted)

The ability of the project to take into account potential harmful effects of its activities that could intensify or create new risks have been assessed and following table resume participants appreciations:

Table 42 : Ability of the project address potential harmful effects of its activities

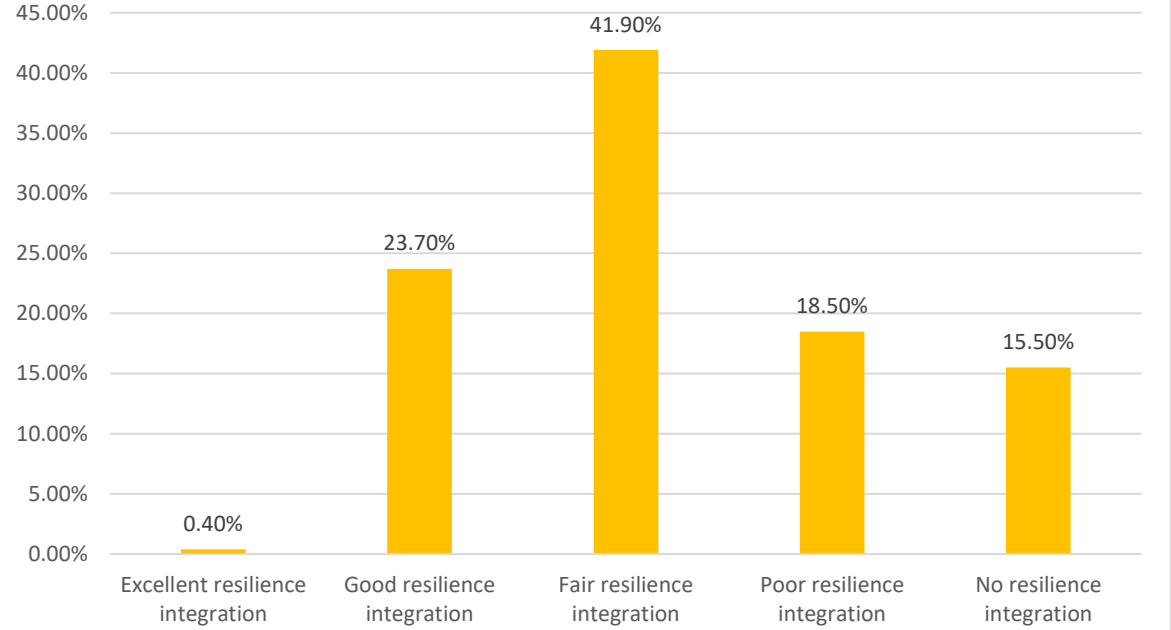
Ability of the project address potential harmful effects of its activities	Percent
The project does not take into account potential harmful effects of its activities	4%
The project design takes into account the potential harmful effects of its activities	47%
The project design takes into account the potential harmful effects of its activities + has a strategy to monitor the project's (un) intended effects on the project participants	25%
The project design takes into account the potential harmful effects of its activities and has a strategy to monitor the project's (un) intended effects on the project participants + has the flexibility to act upon this	14.5%
The project design takes into account the potential harmful effects of its activities and has a strategy to monitor the project's (un) intended effects on the project participants + wider context + has the flexibility to act upon this	5%
Don't know	2%
	n=7,452 (weighted)

Regarding coping actions implemented, it results that 91% of participants who responded, declared that actions and practices have been implemented by the project to address the main recurrent and climate related shocks and stresses identified in their context. *Within 95% of participants declared that they observed their own or household vulnerability reduction after actions and practices implementation and 79% of them estimate that they recover for or preserve the initial situation that they have before shock/crises. 20% responded that they did not recover or preserve their initial situation and 1% don't really know or didn't wanted to respond to that specific. It is obvious that height participants among 10 are arguing that mitigation actions and practices implemented are indeed effective and help to reduce their vulnerability to shocks and crises and even maintain or recover for their situation before the crises*.

Finally, overall resilience integration score has been computed based on appreciations provided by each participant for the different assessment criteria. The average of the resilience score is 11 and varies between the minimum of "Zero" and a maximum of 21. Among 7,453 weighted participants, it is obvious that resilience integration in the Harande program implementation have been appreciated in very diverse modalities. Participant perceptions are so much different

and highly linked to the nature or package of activities really implemented and also the participant knowledge of the program intervention. The overall resilience integration appreciation is presented in the chart below:

Graph N° 1 : Overall resilience integration appreciation by program participants



It is really comforting to note that a majority of 66% of program perceived resilience integration within the program implementation against 34% of participant who did not perceived. This show a good resilience integration according to program participants based on the effectiveness of the action and responses provided by the Harande program in their context.

Within those who perceived resilience integration into the program implementation, 63% appreciated a "Fair resilience integration", 36% a "Good resilience integration" and 1% "excellent resilience integration".

Data analysis review highlighted that, some questions are difficult for the participants to appreciate because they refer to aspects that are not obvious to the participants, but the project certainly communicates on them. This requires that the participants be well informed about the activities and the implementation. Some assessments remain weak because they are linked to aspects of advocacy that the project did not plan to carry out. Finally, despite all these limiting aspects, it results that Harande has integrated resilience within intervention and appreciation level differs from participant's ownership of the intervention in their context. Lessons in terms of successes and limitations, should be learned by Harande from all resilience supporting activities or processes implemented and documented for future DFSA design and implementation.

11.16.2. The Gender integration Marker Analysis

The gender integration data analysis was focused around four main aspects presented in the following sections. It is good to mention that Harande in its gender strategy choose to work with existing gender roles and relations and to implement strategic activities to mitigate and balanced the gender inequality issues highlighted by the gender analysis and the community consultations.

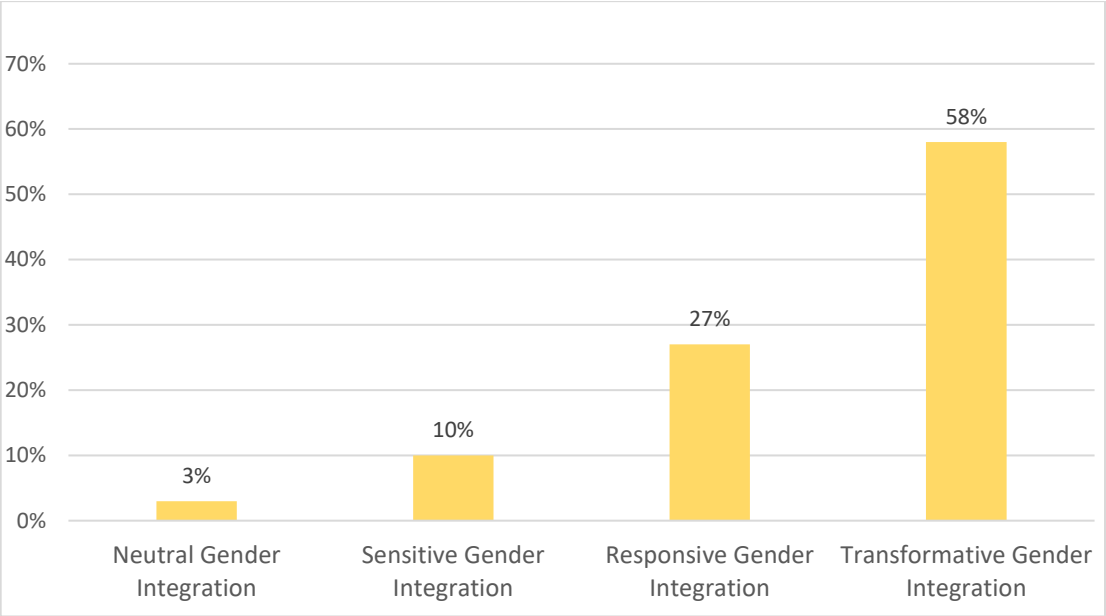
The first criteria for gender integration within the Harande program is based on the extend to witch participants acknowledge that interventions have been informed by analysis of the gender differences between women, youth (boys and girls) and men. Data analysis of this aspect results that among 7,452 weighted survey participants, 71% of respondents mention that they know about gender analysis organized within their communities on differences between women/men/youth activities and roles in the community and the household. 14% of respondents didn't answer to the question and another 15% didn't know about this gender analysis.

Among those who mention the gender analysis, for the second appreciation criteria, 87% of respondents support that project activities have been adapted to meet the distinct needs of women, men and youth as identified in the analysis against 13% who declare the opposite opinion.

The third gender integration analysis criteria is focused on the gender balanced participation of vulnerable people in project processes. Data analysis of that aspect show that 76% of the survey participants declared that interventions insure meaningful participation of women, men and youth in at least of these issues: transparent information sharing, decision making and responsive feedback mechanisms. Note that 9% responded negative and 13% didn't answer at all to the question.

The fourth gender integration assessment criteria was focused on the extend to witch monitoring systems are collecting and analyzing gender disaggregated data. For this criteria it results that 50% of participants mention that the monitoring systems are collection and analysis both sex and age disaggregated data and changing protection risks and needs. 27% responded negative and 21% didn't answer to the question. It is obvious that this criteria need improvement as in general due to the weak of community based monitoring, participants are not well informed about how data are collected and disaggregated by gender.

Finally, based on the four criteria presented above the gender integration have been scored. The score varies between a minimum of zero (0) and a maximum of 4. The average score obtained is 3 and the statistical mode of the distribution is 4. The overall gender integration appreciation is presented in the chart below:



For gender integration appreciation it is great to see that approximatively 85% estimate that the integration level is good, within them 58% appreciate to "Transformative gender integration level" and 27% to "responsive gender integration level". Regarding gender integration by Harande according to program participant appreciations, it is obvious that significant changes have been observed. It is also obvious here to note that participants are more informed about gender implementation as all people responded to the survey. Lessons should be learned by Harande from all gender processes implemented and documented for future DFSA design and implementation.

XII. CONCLUSION AND KEY FINDINGS

FY2020 Annual monitoring survey has been conducted using latest BHA beneficiary based survey methodology guidance. As for previous surveys, major insecurity issues have been encountered within some of the sample villages and neighboring, contribute to high non responses rates and delay of data collection in Bandiagara cercle. However, despite these security issues sufficient data have been collected to cover all the fourteen (14) annual survey indicators and other additional custom informations needed by the program. All the estimates have been computed using sampling weighting procedures as required in the FtF PABS guideline. Except, gross margin and value of incremental computed using more complex formulas, standard errors and confidence intervals have been established for the remaining indicators and errors still less than the expected 5% rate. Main findings are as follow:

- Gross margins, the value on incremental sales and the yields of value chain commodities (Beans, Shallot and Chickens) show positive trends and are improved forFY20 actuals. Still compared to the expected technical norms per hectare when appropriate inputs and technologies are used these achievements are quite appreciable. Beyond the use of appropriate technologies, some contextual factors (climate, conflict, quality of soils, rainfall, etc...) still influencing the production and also the use made with the production. The ratio part of production sale vs part of production consumed still bad to allow economic growth for value chain participant as 50% is consumed by the household. For next interventions, changing this to 75% minimum of the total production destined for sale and 25% maximum for household consumption/other uses may suit to be a better scenario to encourage for value chain participant as their main objective is to put product on market and improve their gains. Data analysis conclude analysis conclude also that baseline value set in the BHAMIS system at the beginning of the program where not appropriate implementation context and impacted negatively the data points. This is a great learning for future DFSA that should insure that base values of this king of indicators influenced by several economical and contextual factors, to be measure and set properly trough base value establishment survey or at least the first annual survey organized by the program.
- Regarding the use of improved technologies and management practices it comes out that for most of the technologies and management practices the number of producers and other reached in FY20 increased with regard of the targets and the previous year achievements. Despite the disturbances due to COVID 19 and the exclusion of several communes due to insecurity where surfaces under improved technologies are widespread, the figures show some improvements and increasing trends overs years. It is obvious that the FFBS highly contributed to this success and FY20 achievement show all farmers interest with regards of promoted technologies and practices. This may bring evidence of a good acceptance and adequacy of the FFBS strategy within this intervention area. It results also that some of the technologies and practices declared to be used by the farmers not promoted by Harande comes from other partner's interventions and are finally complementary. The small holder data analysis show that the average hectare of land under improved technologies or management practices used by farmers is 1.09 hectare. This confirm means off 1 hectare per small farmer measured in previous years.

- The Harande Youth interventions strategy seems to be successful as positive trends observed over implementations years are maintained. It's obvious, that Harande contributions to those changes between FY17 and FY20 is attributable to non-farm livelihoods activities like vocational and entrepreneurship support. Youth are well involved in non-farm livelihoods as 8 out of 10 among them get qualify jobs and declare improvement and the contribution of these activities to their household's livelihoods is unneglectable. 92% of youth based their livelihoods mainly on non-farm activities they built with Harande while 7% of them failed. Moreover, non-farm livelihoods activities practiced by youth are very diversified and cover most of the existing activities in rural area. The analysis of the top 10 of these activities shows a good basis for their sustainability and profitability because the services offered are requested daily by the customers and the potential demand really exist.
- Conflict awareness and mitigation behaviors has been raised among program participant in Harande area. This PaBS show clear evidence of better willingness and ability to negotiate a win-win peaceful solutions by promoting dialogue between the parties in conflict. Mitigation mechanisms seems to build more on traditional and religious institutions than the formal governments ones. 4 respondents out of 10 declared to be involved in several type of conflict resolution in their community or surrounding communities during the past 12 months. It should be highlighted that conflict between communities is not mentioned in the occurred conflicts. It also important to note that conflict between farmers and herders are mentioned only by 20%, this is great improvement in that area where this type of conflict used to have very high prevalence few years ago. The conflicts with high rates mentioned by respondents are mainly those between or within families or households. Some conflict related to GBV have been mentioned.
- Post-harvest handling practices are really adopted by 7 farmers out of 10 as part of their on farm activities during the FY20. At least 60% of farmers declare doing post-harvest management and they are using technologies and practices that helps to store properly and keep the quality of the production like using appropriate bags for storage, insect-temperature and humidity control.
- Care group strategy implemented by Harande had a great contribution in positive changes observed regarding the ANC visits. It is great to note that behavior changed as 98,8% of women did at least one visit during their pregnancy. Among respondents 51% have reached the required 4 ANC expected and 80% did at least 3 ANC. 62% of them give birth in a health center. Several limiting factors to pregnant women to achieve the 4 required ANC visit during their pregnancy have been identified. Many factors are already known but they are confirmed by these findings. The main ones highlighted are: women's workload, the late awareness of the pregnancy, the accessibility or distance from the center, the transportation issues, ANC fees payment issues. It is really important to note that "husband refusal" or low quality of ANC services" are not mentioned by the respondents as limiting factors; they used to be at the beginning of Harande.
- Enriched flour promoted by Harande brings significant changes perceptible by women. This local produced flour has been so much appreciated that 8 women out of 10 women supported that it's bring relevant contribution to especially children under two good nutritional status. Also it is noted that 6 women out of 10 support

that enriched flour help to protect against diseases, strengthen the children health and contribute to prevent malnutrition.

Based on these findings, it is obvious that Harande made significant achievements in expected outcome over its implementation period despite the complex insecurity context and the COVID 19 outbreak limitations in FY20. The Program Management and the MEAL unit should facilitate ownership of these results by all the technical units (livelihoods, nutrition, wash, conflict/governance, gender, climate change and adaptation, environmental, etc.) and the best possible learning items, best practices and lesson learned should be extracted for knowledge sharing among DFSA and adaptive management insights per each technical sector.

I. ANNEXES

1.1. ANNEX 1: ANNUAL SURVEY INDICATORS LIST
1.2. ANNEX 2: FY19 PABS QUESTIONNAIRE
1.3. ANNEX 3: FY19 PABS APPROVED SOW

1.4. SAMPLING WEIGHTS AND NON RESPONSE TREATMENT FORMULAS

a. Calculating the Sampling Weights to Account for Probabilities of Selection

As **systematic PPS sampling** is used in the first stage (survey design option 1 or 2), **systematic sampling** is used at the second stage, the formula for the overall probability of selection for a beneficiary *j* in cluster *i used* is the following:

$$wProbSelection = wij = 1/fij = 1/f1i * f2ij$$

Where :

the formula for the overall probability of selection for a beneficiary *j* in cluster *i* is the following:

$$fij = f1i * f2ij = (m * Bi/N) * (bi/Bi) = m * bi/N$$

m=Number of clusters selected
N=Total number of beneficiaries
Bi=Number of beneficiaries in cluster i
bi=Number of beneficiaries to select in cluster i

b. Adjusting Survey Weights for Non-Response

The weight adjustment for non-response for survey design options 1, 2, and 4 is calculated as:

$$wnon\text{–}response = number\ of\ beneficiaries\ selected\ to\ be\ interviewed\ (in\ a\ sampled\ cluster) / number\ of\ beneficiaries\ actually\ interviewed\ (in\ a\ sampled\ cluster)$$

The weight adjustment for non-response should be calculated individually for each sampled cluster. The weight adjustments for non-response will vary among clusters given that clusters will likely experience different non-response rates. However, for all survey respondents in a particular sampled cluster, the same weight adjustment for non-response can be used. After the weight adjustment is made, the records for the non-responding sampled beneficiaries can then be dropped for the purposes of analysis.

c. Calculating the Final Sampling Weights

The final sample weights to be used in all data analysis are calculated by multiplying the sample weights (inverse of the probabilities of selection) by the weight adjustment for non-response:

$$wfinal = wProbSelection * wnon\text{–}response$$