# Peacebuilding Fund Impact Evaluation, Learning, and Dissemination Phase 1 (PeaceFIELD1) in Darfur, Sudan

Pre-Analysis Plan

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# 1. Introduction

This impact evaluation measures the effects of interventions supported by the UN Peacebuilding Fund (PBF) implemented in 2020-2022 in conflict-affected areas of Darfur, Sudan. This impact evaluation is a part of the larger PeaceFIELD initiative which aims to develop new evidence about the effectiveness of interventions supported by the PBF. In this case, the PBF-supported programming being evaluated seeks to support durable peace by addressing the needs of some of the world's most vulnerable groups: internally displaced people, returnees, and host communities, a majority of whom are women and children according to IOM baseline data. Project components include support for the peaceful resolution of land disputes, the provision of basic services, efforts to bolster civil society organizations representing marginalized groups, particularly women and youth. Designed with a unified theory of change, the programming was implemented by six UN agencies: UNDP, UNHABITAT, UNHCR, UNICEF, IOM, and FAO. The impact evaluation focuses on East Darfur state, where implementation patterns are most conducive to impact evaluation design. IOM is the in-country data collection partner for endline data.

# 2. Data

This analysis plan depends on data from a baseline survey conducted late 2020 through early 2021 and an endline survey conducted late 2022 through early 2023.

## 2.1 Baseline data

One common baseline survey methodology and questionnaire was used across all five states of Darfur, targeting a sample size of about 11,000 households and reaching 10,913. Implemented by the Joint IDP Profiling Service (JIPS) and the International Organization for Migration (IOM), it included 4,004 households in East Darfur. The sampling procedure for the survey was designed based around PBF target groups, with mostly randomly sampling by village.

The baseline survey was intended to provide a representative sample by PBF target group at the locality level. PBF target groups were internally displaced people (IDPs) who subsequently returned to their village of origin (IDP returnees); IDPs in camps; Sudanese refugees that have returned from neighboring countries (return refugees); non-displaced people; and nomads residing in damrahs. The questionnaire was intended to take about 30 minutes per respondent, with questions about each member of the household. Sections of the survey included questions on livelihoods, housing, land access, safety, rule of law, civic participation, and access to services. No personally identifying information was kept about participants.

## 2.2 Endline data

The endline household survey mirrors the baseline in many ways, with some differences in questionnaire and sampling. Endline data is being collected at the time of writing of this analysis plan. IOM enumerators began collecting household survey data in February 2023, with data collection scheduled to end mid-March 2023.

Endline data collection is occurring only in East Darfur, which is the only state in which an impact evaluation research design was viable. For details, see the PeaceFIELD1 baseline report for East Darfur and Central Darfur.

Endline data is collected in two rounds: a first qualitative round to refine the sample of villages, and a second main round which includes the main household survey.

The first round of qualitative endline data was collected in December 2022. This round targeted all villages in East Darfur in which baseline data was collected. One primary purpose of this data collection was to eliminate villages from the endline household survey which would not meet the criteria for inclusion as treatment or control villages.

Based on round 1 data, villages in which there was substantial implementation of other non-PBF development or peacebuilding projects were eliminated. Following these eliminations, a propensity-score matching algorithm was used to on the baseline data for the remaining villages eliminate the control villages which were least similar from the treatment villages. Subsequently, two additional villages were eliminated: Donkie Khamal was eliminated because it is socially considered to be part of Mali village, making it unclear whether it would be considered treatment or control; and Um Sawona South was eliminated because it is a newly-constituted village of temporary residences, making it a village of a systematically different type from any treatment village. As a result, the villages for the endline household survey are those listed below in section 3.1.

Within-village sampling is based on random household selection (or full village censuses in the cases of very small villages). In most households, male and female respondents are being interviewed if available, alternating genders as "primary" and "secondary" respondent by household. Full details on the sampling approach and survey methodology for the endline household survey are found in the East Darfur PeaceFIELD Full Field Survey Manual, February 2023.

# 3. Analysis approach

Each of our hypotheses will be tested using the same analysis structure: a comparison of treatment villages and control villages with an ANCOVA design, pseudo-panel data and clustered standard errors calculated via wild cluster bootstrapping. The unit of analysis is specified for each hypothesis. A common set of control variables is applied across most hypothesis tests, with some variations based on the unit of analysis and specific hypothesis test.

## 3.1 Treatment and control villages

Primary hypothesis tests will all be conducted comparing responses from treatment villages (where PBF implementation occurred) with control villages (where no PBF implementation occurred). The following table identifies which villages are considered treatment and control. Note that Dabak is a special case which will be excluded from primary hypothesis tests.

|  |  |
| --- | --- |
| **Village name** | **Treatment status** |
| Arto village | Control |
| Eida Shammal | Control |
| Tuweilei | Control |
| Um Habeila | Control |
| El Boad | Control |
| Nur | Control |
| Zerafa | Control |
| Amar Jadeed | Control |
| Kilakil Mugo | Control |
| Um Boim 2 | Control |
| Kasib | Control |
| Gargar | Control |
| Um Daie | Control |
| Dabak | Control, but to be excluded |
| Jakhara | Treatment |
| Gaar Hajar | Treatment |
| Om Alkeirat (Alladob) | Treatment |
| Om AlKheirat (on AlKheirat) | Treatment |
| Mali | Treatment |
| Shanabla | Treatment |
| Saniafando | Treatment |

## 3.2 Pseudo-panel approach

As discussed in Section 2, the data for this impact evaluation is not structured as a panel. Therefore, we apply pseudo-panel methods to achieve the most precise estimates possible given the structure of the data (see Verbeek 2008; Guillerm 2017). The cohorts for our pseudo-panel will be constructed based on age of head of household, gender of respondent, and village of residence.

For all hypothesis tests except H3 relating to school attendance, each cohort will be drawn from a single village. Within each village, the cohorts will be, based on baseline ages:

* Men with HH head aged 18-35
* Men with HH head aged 36-50
* Men with HH head aged 51+
* Women with HH head aged 18-35
* Women with HH head aged 36-50
* Women with HH head aged 51+

At endline, the age cutoffs will be shifted up two years due to the two-year difference between baseline and endline surveys.

Additional cohorts will be constructed which will include all men and all women; these cohorts will be used respondents in the endline data who declined to provide their age. For any village where any cohort is an empty set, the average of the two adjacent cohorts will be used.

For hypothesis test relating to school attendance, each cohort will be drawn from a single village. Within each village, the cohorts will be:

* Boys aged 6-11
* Boys aged 12-17
* Girls aged 6-11
* Girls aged 12-17

## 3.3 ANCOVA design with wild cluster bootstrap standard errors

Primary hypothesis tests will be conducted with an ANCOVA approach, following McKenzie 2011. Estimates of the treatment effect will be calculated using a dichotomous variable identifying the village-level treatment status, in an OLS regression with the covariates specified below for each hypothesis test. The regression equation will be:

In this specification, represents the baseline value of the outcome within the cohort, represents a vector of control variables from the endline data, and represents a set of control variables from the baseline within the relevant cohort.

Because of the small number of clusters (20), standard errors will be calculated using wild cluster bootstraps (Cameron et al 2008).

## 3.4 Correction for testing multiple hypotheses

Within families of hypothesis, the Westfall-Young correction for multiple hypothesis testing will be applied.

## 3.5 Control variables

All primary hypothesis tests below, except H3 relating to school attendance, will include the following control variables. Each test will also include the additional hypothesis-specific baseline control variable(s) identified below. Some hypothesis tests also include other additional control variables.

Standard controls:

1. Target group
2. Age
3. Gender of respondent
4. Gender of head of household
5. Size of household
6. Live somewhere else >6 months of the year
7. Mobile phone ownership
8. First language (proxy for tribe)
9. Level of education (change khalwa option to no formal education)
10. Land access at baseline within cohort
11. Land ownership status at baseline within cohort
12. Food insecurity at baseline within cohort

For the age, we expect to encounter missing observations in this variable. We assume these observations to be missing at random, and will therefore use stochastic imputation to fill in the missing values (Rubin, 1976; Little and Ruben, 2019). As a robustness check, we will also include a dummy variable to control for the imputed values. If any other control variable has more than 1 percent of observations missing, the same imputation procedure will be used.

# 4. Primary hypothesis tests

## H1: Treatment villages will be less conflict-prone

### H1a: Fewer land conflicts will be reported in treatment villages

This hypothesis will be tested at the household level based on the primary survey respondent.

In the endline questionnaire:   
- Are there any issues or conflicts linked to this farming land? Binary outcome.  
- Are there currently any issues or conflicts related to re-accessing the farming land in your place of origin? Binary outcome.  
- Are there any issues or conflicts linked to this grazing land? Binary outcome.  
- Are there currently any issues or conflicts related to re-accessing the grazing land in your place of origin? Binary outcome.  
- Are there any issues or conflicts linked to your dwelling plot/land? Binary outcome.  
- Thinking about the dwelling plot you lived on in your place of origin, are there currently any issues or conflicts related to re-accessing that land/dwelling? Binary outcome.

The above six questions will be summed up for each respondent to form an index of land conflicts.

Baseline control: Same questions and index construction as the outcome variable

### H1b: Conflict resolution committees will be perceived as more effective in treatment villages

This hypothesis will be tested at the individual level based on primary and secondary survey respondents.

In the endline questionnaire:  
In East Darfur state, UNDP has trained Community Based Reconciliation Mechanisms, UNHCR has trained Community Based Protection Structures, and FAO has trained Community Corridor Monitoring Committees. How effective have these committees been? Categorical outcome.

Baseline control: Perceptions of administrative services; effectiveness of water committees.

### H1c: Perceived conflict likelihood will be lower in treatment villages

This hypothesis will be tested at the individual level based on primary and secondary survey respondents.

In endline questionnaire: I want to ask if you're worried about whether conflict might affect this village. Do you think a conflict affecting this village is – extremely likely, somewhat likely, unlikely, very unlikely?

Baseline control: Safety index (as detailed under H1d); perceptions of administrative services.

### H1d: Perceived safety will be higher in treatment villages

This hypothesis will be tested at the individual level based on primary and secondary survey respondents.

In endline questionnaire: A safety index will be created that sums up the values from the following categorical variables.  
- How safe do you or anyone in your household feel walking alone in your area/ neighborhood during the day?  
- How safe do you and your household members feel walking alone in your area/ neighborhood during the night?  
- How often did you or anyone else in your household encounter any safety incidents in the past 12 months in your current area of residence?  
 - Verbal threat/insult  
 - Physical threat with knife, gun, or other type of weapon  
 - Robbery  
 - Damage inflicted on property/assets/livestock

Baseline control: The same questions and index construction

## H2: Residents of treatment villages will be more satisfied with services

These hypothesis tests will be conducted at the individual level based on primary and secondary survey respondents.

### H2a: Residents of treatment villages will be more satisfied with water services

* Overall, to what extent are you satisfied with the water services? Categorical outcome.

### H2b: More residents of treatment villages will think drinking water was sufficient last summer

* Thinking of the past summer, to what extent do you agree or disagree that drinking water amount was sufficient for you and your household members? Categorical outcome.

### H2c: Residents of treatment villages will be more satisfied with sanitation services

* Overall, to what extent are you satisfied with the sanitation services? Categorical outcome.

### H2d: Residents of treatment villages will be more satisfied with administrative services

* Overall, to what extent are you satisfied with the administrative services? Categorical outcome.

### H2e: Residents of treatment villages will be more satisfied with services overall

* A satisfaction with services index: This will include a summation of the responses on satisfaction with water, sanitation, health, and administrative services.

Baseline controls: The same questions

## H3: School attendance rates among school-age children will be higher in treatment villages

For this hypothesis test, the unit of observation will be individual school-age children.

Control variables:

1. Target group (household level)
2. Size of household (household level)
3. Male or female headed household (household level)
4. Age of head of household (household level)
5. Mobile phone ownership (household level)
6. Education level of primary respondent (household level)
7. First language of primary respondent (proxy for tribe) (household level)
8. Land access at baseline within cohort (household level)
9. Land ownership status at baseline within cohort (household level)
10. Food insecurity at baseline within cohort (household level)
11. Child age (child level)
12. Live somewhere else >6 months of the year (child level)
13. Child gender (child level)
14. Disability status (child level)

Missing values for age will be imputed as described in section 3.5.

In endline questionnaire:

* During the current school year (2022-2023), does [child] attend formal education?

Baseline control: The same question.

## H4: Returnees in treatment villages will be less likely to expect to move

This hypothesis will be tested only among returned IDPs and returned refugees who have returned to their home village. Among that group, it will be tested at the individual level based on primary and secondary survey respondents.

In endline questionnaire:  
How likely is your household to leave this location at some point in time? Categorical outcome.

Baseline control: The same question. Binary outcome.

Additional control variable: Time since return to village.

## H5: Participation at public meetings will be higher in treatment villages

### H5a: Participation at public meetings will be higher in treatment villages

This hypothesis will be tested at the individual level based on primary and secondary survey respondents.

In endline questionnaire:  
How many times have you or your household members attended these [public] meetings in the last 6 months? This is a continuous variable that will be transformed into bins of ‘0 meetings attended’, ‘1 meeting attended, ‘2 meetings attended’, ‘3 – 5 meetings attended’, ‘6 – 15 meetings attended’, ’16 – 30 meetings attended’, ‘more than 30 meetings attended’.

Baseline control: The same question

### H5b: Reported social cohesion will be higher in treatment villages

This hypothesis will be tested at the individual level based on primary and secondary survey respondents.

In endline questionnaire: A social cohesion index will be created that sums up the values from the following questions.  
- How strongly do you agree or disagree with the following sentence – People from all backgrounds are welcomed by members of the community. Categorical outcome.  
- How strongly do you agree or disagree with the following sentence – People from all backgrounds are able to participate in decision-making in the village, or can lead on some issues such as service provision and conflict resolution. Categorical outcome.  
- How strongly do you agree or disagree with the following sentence – People from all backgrounds should have equal access to education and health services. Categorical outcome.

Baseline control: A social cohesion index will be created that sums up the values from the following categorical variables.  
Question: How strongly do you agree or disagree with the following statements.  
- You welcome IDP-returnees settling in this village.   
- You welcome IDP-returnees’ participation in local activities.   
- IDP-returnees should have the opportunity to become leaders or participate in decision-making within the village.   
- You welcome IDP-returnees into your family through marriage.   
- You have IDP-returnee friends in this village.   
- IDP-returnees should have equal access to basic services such as education services, and clean water.   
- You and your HH members welcome camp IDPs settling in this village.  
- You and your HH members welcome camp IDPs’ participation in local activities.  
- Camp IDPs should have the opportunity to become leaders or participate in decision-making within the village.  
- You and your HH members welcome camp IDPs into your family through marriage.   
- You and your HH members have camp IDPs friends in this village.   
- Camp IDPs should have equal access to basic services such as education services, and clean water.  
- You and your HH members welcome nomads settling in this village.  
- You and your HH members welcome camp nomads’ participation in local activities.   
- Nomads should have the opportunity to become leaders or participate in decision-making within the village.  
- You and your HH members welcome nomads into your family through marriage.  
- You and your HH members have camp nomad friends in this village.  
- Nomads should have equal access to basic services such as education services, and clean water.

### H5c: Women will report having more role in village-level decision-making in treatment villages

This hypothesis will be tested among female respondents only.

In endline questionnaire: When a decision needs to be made that affects the whole village, do women have a voice in affecting that decision?

Baseline control: Perceptions of administrative services; female respondents’ attendance at community meetings.

# 5. Supplementary analyses

All hypothesis tests will be checked for heterogeneous effects by:

1. Gender of respondent
2. Gender of head of household
3. Disability status
4. Food insecure households
5. Native Arabic speakers compared with native speakers of other languages

Each of the below outcome variables will be tested using the same model specification as the primary hypothesis tests above:

Additional outcome variables to test H1:

* Reported conflicts separately for grazing land, farming land, and dwelling land
* Whether conflicts were reported to authorities
* Effectiveness of water committees
* Effectiveness of authorities in addressing personal safety incident/s
* Reported personal safety issues to authorities
* Change in reporting of personal safety incidents to authorities rather than to family members or not reporting
* Change in the perceived likelihood of conflict in the last 2 years

Additional outcome variable to test H2:

* Sufficiency of drinking water for livestock during the past summer
* A higher percentage of household members will have at least one civil document in treatment villages.

Additional outcome variable to test H3:

* Does [child] attend formal education at least 4 days a week?

Additional outcome variables to test H4:

* Change in the household’s intentions to move to another location in the last 2 years
* Shift in household’s reasons to issues other than safety and/or basic services
* A higher rate of return IDPs will have access to same land as the one used before displacement in treatment villages.

Additional outcome variables to test H5:

* Change in women’s participation in village-wide decision-making in the last 2 years

# 6. Robustness checks

All analyses will be redone with a pseudo panel in which cohorts are based only on village and gender.

Hypothesis tests with categorical outcomes will be analyzed via ordered logit.

# 7. Works cited

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