



# **A proposal of mixed methods approach to impact evaluations**

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# 1. A proposal of mixed methods approach to impact evaluations

In April 2012, DARA was commissioned by WFP and UNHCR to undertake two impact evaluations of food assistance in both Chad and Bangladesh. The assignment was part of a four impact evaluation series, in which the involved UN agencies wanted not only to identify the outputs and outcomes of their programs, but to find ways out of refugee situations that had been lasting for too long.

Impact evaluations find their first obstacle in the unavailability of data describing the characteristics of the assisted populations at the beginning and throughout the evaluation period. And, what is just as important to determine the impact, unavailability of data describing the characteristics of a control group, which is a population as similar as possible to the assisted, but not targeted by the aid. Ideally, to determine impact, comparisons are made between the targeted population and the control group before and after the implementation of programs, in terms of a set of selected indicators describing the areas of interest. However, the lack of data makes it difficult to build indicators. This is even harder when we want to measure impact in a multidimensional, complete and integrated manner, going beyond nutrition and health indicators, and looking at coping strategies, livelihoods, wealth levels, purchase power, protection, mobility, etc. which require more context-adapted indicators.

To overcome the lack of data and conduct a usefulness driven research, DARA's evaluation team has taken a few key steps in the research process: an independent and closely monitored data collection effort, including an extensive quantitative survey, and semi-structured personal interviews and focus group discussions (FGDs); an exhaustive data mining exercise on the survey database in the search of patterns and tendencies behind the data; and a systematic comparison and validation of quantitative evidences - issued from the data mining - with the qualitative evidences - issued from personal interviews and FGDs, but also from desk reviews, direct camp observation and key informant interviews.

## **(a) Independent data collection exercise, collecting quantitative and qualitative information in a systematic manner**

Research design was based on desk reviews and the preliminary findings of an inception mission more qualitatively oriented, including key informant interviews, FGDs, observation of camps, etc. It identified different groups of population, so that the comparison among them, in terms of the areas of interest of the research (food consumption, wealth, livelihoods, mobility, protection), as in the target versus control populations model, contributed to the impact estimation. An independent data collection exercise, collecting quantitative and qualitative information for all the population groups in a systematic manner (so that it can be compared and cross checked) was undertaken by a highly qualified local team, trained and closely monitored by DARA.

## RESEARCH DESIGNS USED FOR IMPACT EVALUATIONS

Research design for the impact evaluation in **Bangladesh** was based on the distinction between registered Rohingya refugees and unregistered Rohingya. The first fled Myanmar and arrived to Bangladesh in the 1990's. They were given refugee status, shelter in UNHCR camps and food aid. The second arrived in later waves and were never given refugee status. Some live in the official UNHCR refugee camps, but do not receive any food aid. Other unregistered Rohingya live in the makeshift camp, the Leda site and main towns (without any food aid).

Characteristics of population groups on which research design is based	LOCATION	TARGET POPULATION	POPULATION SIZE (num. of households)	SAMPLE SIZE (num. of households)	ERROR (+/-)
Rohingya living in official UNHCR camps. Food aid is provided by WFP, but not all Rohingya have the right to it, since some of them have not been given official refugee status	NAYAPARA UNHCR REFUGEE CAMP	Registered Rohingya refugees (food aid recipients)	2681	175	7.2%
		Unregistered Rohingyas	371	132	6.9%
		TOTAL	3052	307	5.3%
	KUTUPALONG UNHCR REFUGEE CAMP	Registered Rohingya refugees (food aid recipients)	1700	174	7.0%
		Unregistered Rohingyas	209	26	18.0%
		TOTAL	1909	200	6.6%
Rohingya living in unofficial sites, no food aid is distributed	MAKESHIFT CAMP (NEAR KUTUPALONG)	Unregistered Rohingyas	4350	150	7.9%
	LEDA CAMP (NEAR NAYAPARA)	Unregistered Rohingyas	2300	262	5.7%
Rohingya living in some neighbourhoods in bigger cities, no food aid is distributed	COX'S BAZAR	Unregistered Rohingyas		50	
Bangladeshi population	VILLAGES NEAR NAYAPARA	Locals living in poorest households (identified through PRA's)		100	
Total				1069	

Research design for the impact evaluation in **Chad** was based on the identification of 3 possible situations in terms of the amount of food aid distributed and the selection of a representative camp for each to establish comparisons among them. Chadian villages were also sampled.

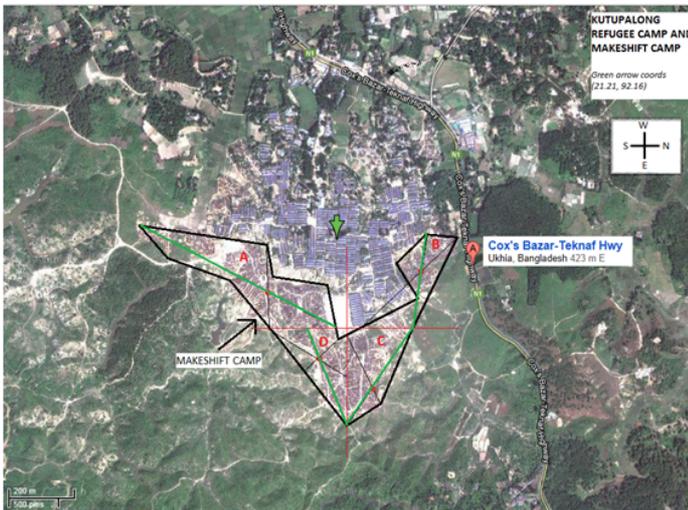
Characteristics of population groups on which research design is based	LOCATION	TARGET POPULATION	POPULATION SIZE (number of households)	SAMPLE SIZE (number of households)	ERROR (+/-)
Central African Republic (CAR) refugees living in official UNHCR camps and receiving different types of food aid	MOULA UNHCR REFUGEE CAMP	CAR refugees recipients of full ration of general food distribution	2076	200	6.6%
	AMBOKO UNHCR REFUGEE CAMP	CAR refugees recipients of half ration of general food distribution	2381	200	6.6%
	YAROUNGOU UNHCR REFUGEE CAMP	CAR refugees in camp where food distribution based on vulnerability	1463	200	6.6%
Chadian population	6 Chadian villages near the camps	Chadian villagers - not receiving any food aid	-	200	-
Total				800	

**Quantitative data collection:** Household survey on a vast sample, based on a standardized questionnaire covering all areas of interest in the research (food consumption, wealth, livelihoods, mobility, protection) and allowing for the construction of indicators at the household level.

DARA designed the sample so that it would cover the requirements of the commissioning agencies:

- Sample design assured a maximum error of 7 to 8% for all surveyed population groups
- Sample design allowed for the implementation of the difference in means test to compare some population groups two by two.
- Sample design assured the representativeness of female headed households within some of the population groups initially identified in the research design

**Qualitative data collection:** Personal interviews and focus groups discussions (FGDs), structured in the same areas of interest as the household survey questionnaire. Selection of interviewees and FGD participants is as random as possible and assures that males and females of different age groups and wealth levels are represented.



Random household selection in field is based on UNHCR ProGres database and also on aerial maps from Google Earth, when necessary.

Survey data collection in Chad was done instantly through PDA devices, reducing the possibility of losing paper questionnaires or committing errors from paper to electronic support

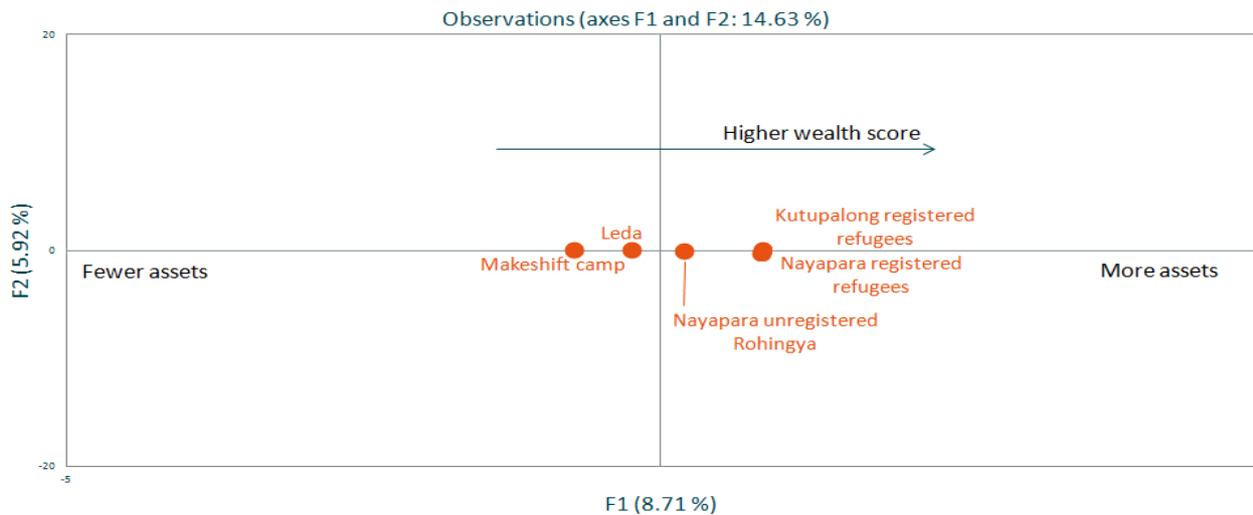
## **(b) Thorough analysis of quantitative and qualitative evidences**

In DARA's view, impact evaluations should not only respond to the question "Did the food aid program work in this specific region at this specific time?", but provide a much broader picture of what has happened and why, as well as what could come next, answering the questions "Does food assistance affect the levels of food consumption, wealth, mobility, protection and the severity of the coping strategies adopted by populations? What would happen to those levels if aid was cut off? Are those levels affected equally if we focus on women, or children or any other particularly vulnerable group?". For this purpose, DARA undertook a thorough analysis in which qualitative and quantitative evidences were carefully combined. On the quantitative side, we went beyond descriptive statistics to the identification of interrelations among factors and relevant tendencies in the survey database, through the use of data mining techniques. Then, qualitative evidences were analyzed to deepen the understanding of the real context and identify the reasons and causal relationships behind statistically significant correlations and differences. Indeed, quantitative analyses enabled us to determine relevant interrelations and tendencies, but as always, failed to inform us on which implies what and why.

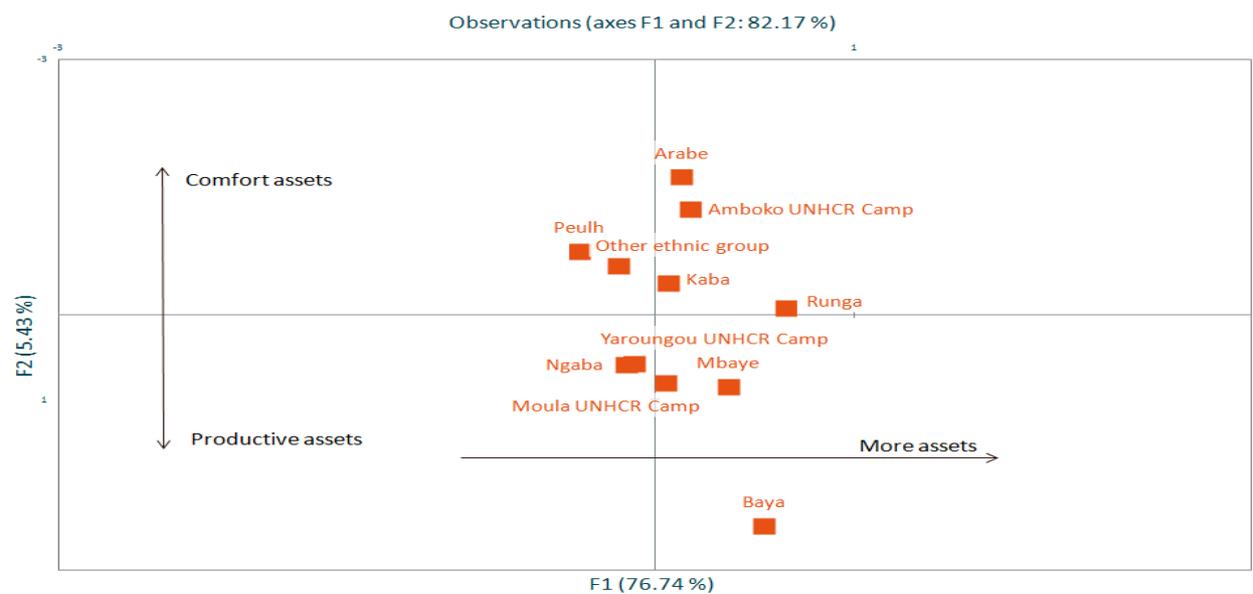
**Data mining.** Beyond comparing different population groups and subgroups (using the difference in means tests and descriptive statistics), the household survey database is systematically analyzed in the search of relevant correlations, tendencies and factors (mainly demographic and socio economic factors) shaping the impact of aid. This is done through the use of data mining techniques, such as factorial analyses, automatic classifications or regressions.

- **Factorial analysis.** Factorial analysis techniques provide us with graphical representations of interrelations among survey items or factors. They are especially relevant prior to the construction of composite indicators, such as, in these cases, the Wealth Score, which aggregates assets owned by the household into a measure of capital held by the household. In the case of Chad, where the type of assets owned by the households are highly dependent on the ethnic group, factorial analysis concluded that assets couldn't be simply added up into a composite indicator, but that different weights needed to be applied to distinguish productive assets from comfort assets.

**Factorial analysis.** In the cases of Chad and Bangladesh, lists of household assets were collected for families and then analyzed through factorial techniques prior to aggregating them into a Wealth Score describing the capital held by households.



In Bangladesh, all families had the same types of assets. Families receiving food aid owned more assets than the others



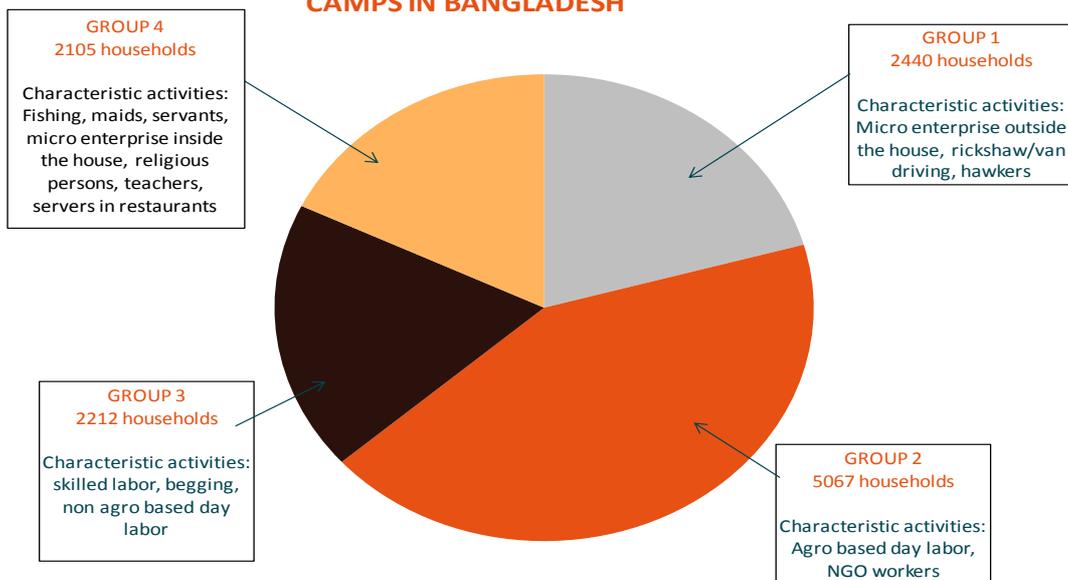
In Chad, the type of assets owned by the households is highly dependent on the ethnic group. The Ngabas and the Mbayes more frequently owned productive assets, serving to work the land, and lived in Yaroungou and Moula UNHCR camps (Maro area). Whereas the Peulhs, and especially the Arabs, owned “comfort” assets more often, and were more present in the Amboko UNHCR camp (Gore area). Conducting a factorial analysis on assets prior to building a Wealth Score allowed us to understand these differences among camps and to assure comparisons among them in terms of the indicators of interest sensitive to them. If we had not conducted this analysis, and just focused on the number of assets, no matter the type, the Mbayes could have seemed “wealthier” than the Arabs, but they own such a different type of assets that plain comparisons mean the loss of very relevant information

- **Automatic classifications.** Given a list of survey items or characteristics, households are automatically classified in a way that, households in the same group are as similar as possible, and households in different groups are as different as possible, in terms of the

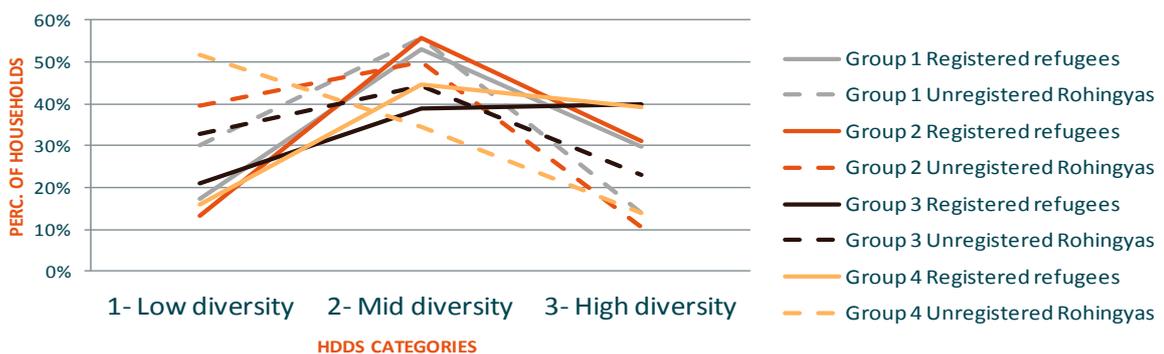
characteristics chosen. In Bangladesh, households were grouped according to their livelihoods. Then, within each group, significant differences in certain indicators (Household Dietary Diversity Score, for instance) were found depending on the registration status, leading to the conclusion that, independent of the income generating activities of the household, receiving food aid contributed to more acceptable levels of food consumption and food security, but not better protection and definitely less mobility.

**Automatic classifications.** In Bangladesh, households were grouped according to their livelihoods. Then within each group, significant differences in the Household Dietary Diversity Score (HDDS) were found, depending on whether the household was a food aid recipient or not.

### ROHINGYA POPULATION LIVING IN OFFICIAL AND UNOFFICIAL CAMPS IN BANGLADESH



### HOUSEHOLD DIETARY DIVERSITY SCORE (HDDS)



- **Regressions.** Regression analyses enable the quantification of how much the indicators measuring impact depend on the demographic and socioeconomic conditions of households. The automatic search of the best fit regression model, through the application of backward and forward algorithms, allow for the isolation and quantification of the impact of food aid.

For each of the 4 indicators describing the areas of interest of the evaluation in Bangladesh, a regression model was searched for, based on the same set of demographic and socioeconomic variables, and variables describing the aid received by the household. Backward and forward algorithms were applied to find the best fit model, i.e. the combination of relevant variables that best described the indicator. This led to the following table, in which, for each indicator we show the most relevant variables in the model that describes them, i.e. the main regressor variables, and, when not nominal, whether they have a positive or negative effect on the indicator value.

Indicators describing the areas of interest of the evaluation	Main regressor variables
Food consumption: Household Dietary Diversity Score (HDDS)	<p><b>Type of household:</b> It is not just receiving food aid that is relevant for the levels of HDDS, but significantly different levels were found depending on the population group. From lower to higher levels of HDDS, population groups can be ordered as follows: unregistered in the makeshift camp, unregistered in Leda, unregistered in Nayapara camp, registered in Nayapara camp, registered in Kutupalong camp. Note that the unregistered refugees living in official camps have significantly better levels of HDDS than those who live in unofficial sites</p> <p><b>Wealth Score:</b> Positive effect on HDDS levels</p>
Food Security: Coping Strategies Index (CSI)	<p><b>Registration status:</b> Receiving food aid leads to a 5 point reduction in the CSI, i.e. an increase in food security</p> <p><b>Wealth Score:</b> Positive effect on food security</p> <p><b>Household size:</b> the bigger the household size, the more severe the strategies adopted by the household</p> <p><b>Earnings per HH member:</b> Positive effect on food security</p>
Protection Indicator	<p><b>Wealth Score:</b> Positive effect on protection of the household</p> <p><b>Location:</b> Higher levels of protection in Kutupalong (closer to Cox's Bazar) area than in Nayapara (closer to the border with Myanmar)</p> <p><b>Marital status of HHH:</b> Household head being a female widow, separated or divorced, reduces the protection levels.</p> <p><b>Earnings per HH member:</b> Positive effect on protection of the household</p>
Mobility Indicator	<p><b>Registration status:</b> Receiving food aid leads to lower levels of mobility</p> <p><b>Marital status of HHH:</b> Household head being a female widow, separated or divorced, reduces the mobility levels</p>