



IMPACT ASSESMENT REPORT

AGGAH COMMUNITY, RIVERS STATE, NIGERIA
DECEMBER 2017

Summary of main findings

As a result of the annual flooding in Aggah:

- 89.7% of households reported that they have had to relocate from their homes
- 90.8% of households described loss of agricultural products
- 100% of households described impacts to the water supply
- 39% of households reported destruction to schools
- 79% of households reported destruction to recreation centers
- 43% of households reported destruction to household buildings



- 66.57% of respondents reported suffering severe physical injuries
- 67.06% of respondents reported suffering severe skin problems
- 60.66% of respondents reported suffering severe diarrhoea
- 62.85% of respondents reported suffering severe vomiting

- 55% of women who responded to the question on menstrual health reported severe problems
- 37% of women who responded to the question on childbirth reported severe problems



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1. Introduction

Background

Egbema Voice of Freedom (EVF) is an association of residents of Aggah Community in Rivers State, Nigeria, whose lives are negatively affected by annual floods caused by Eni's installations in their community. EVF, supported by its legal representatives Chima Williams & Associates (CWA), a public interest law firm, and Advocates for Community Alternatives (ACA), a non-profit organization, has administered the impact assessment survey described in this report. The results of this survey are used in support of EVF's complaint to the Italian and Dutch National Contact Points for the OECD Guidelines.

The people of Aggah are of the Egbema ethnic nationality, whose land can be found in Ogba/Egbema/Ndoni Local Government Area (LGA), located in the Western part of Rivers State, Nigeria. The people of Aggah depend largely on subsistence farming and fishing for their livelihoods.

Aggah is adjacent to and overlapping with the Mgbede oil field, which is operated by Nigerian Agip Oil Company Ltd. (NAOC), an indirect wholly-owned subsidiary of Eni S.p.A. In the early 1970s, NAOC created a 40,000 ft² earthen embankment at each of three locations to support wellheads, and constructed raised access roads to connect them. These constructions constitute a complete blockage to the natural streams that used to flow through the land where the locations were built, and no adequate drainage channel exists. As a result, the streams back up and flood large swathes of Aggah's farmlands and residential areas each year, typically during the rainy season, between the months of July and September. This flooding has recurred annually since the facilities were first built more than thirty years ago.

Impact Assessment Objective

The objective of this impact assessment is to ascertain the impressions of Aggah residents as to the impacts of Eni's installations on their lives and livelihoods. A total of 523 households (in total, 2,016 individuals) participated in the survey. The survey was carried out in Aggah in September and October 2017. The full, anonymized, raw data from the survey responses to relevant questions are included as Appendix B.

2. Methodology

Data collection methods

EVF, with the support of Advocates for Community Alternatives and the Initiative for Strategic Litigation in West Africa, developed a survey questionnaire to investigate the livelihoods, health, and economic impacts of the flooding on individuals and households in Aggah. A team of volunteers visited randomly chosen households in Aggah, under the supervision and guidance of EVF.

The volunteers collected livelihoods data at the household level. The survey administrators made this choice based on an assumption that the primary economic and livelihoods impacts would be felt at a household level, i.e. that loss of agricultural land or income from fishing would affect all members of a household.

By contrast, health data was collected for individuals rather than households. The survey administrators made this choice based on an assumption that different individuals' health would be affected differently; i.e. even if the flooding caused the proliferation of disease vectors, only some individuals would suffer from malaria, typhoid, skin problems, etc. as a result. This choice also resulted from a desire to discern the differential impact on women's health.

Sampling and characteristics of respondents

Survey administrators obtained responses on livelihoods impacts from 523 randomly sampled households in Aggah. From within the 523 households, data on health impacts were collected from 2016 individuals, of whom 1055 are female, 950 are male, and 11 did not specify their gender. Within each household, the survey administrators collected health data from a maximum of four individuals due to time and resource constraints.

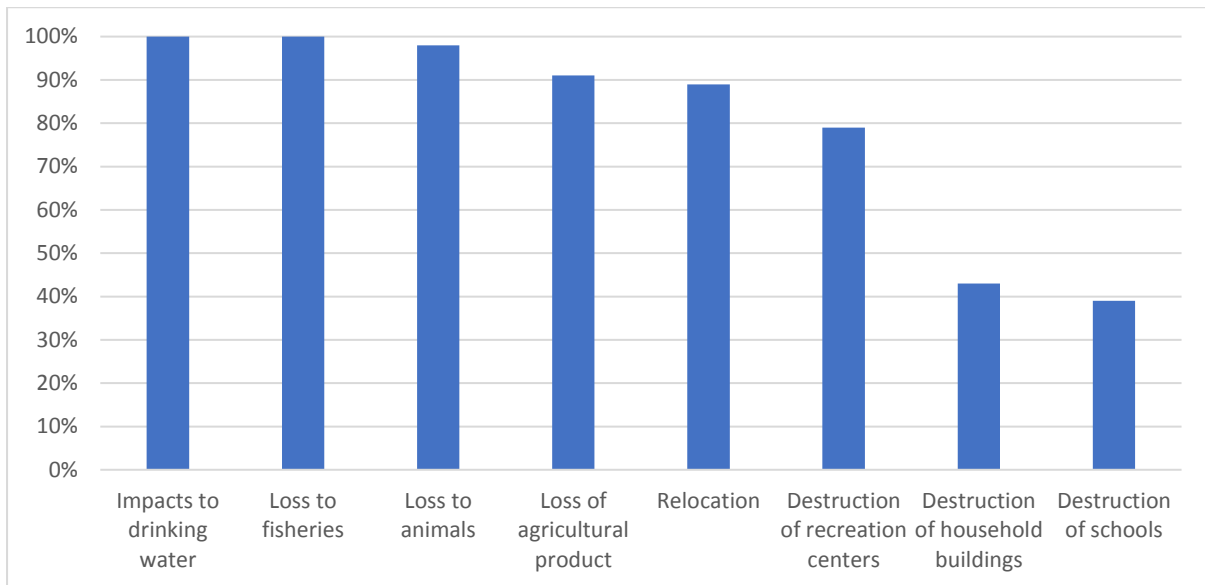
3. Findings

Indicator 1: Impacts to livelihoods

The survey included questions that assess the ways in which the flooding has affected households' economic well-being and access to the basic necessities of life.

The most commonly reported livelihoods impacts of the flooding were impacts to drinking water, relocation, loss of agricultural product and livestock, destruction of physical infrastructure, and economic loss. (See Chart 1 below.)

Chart 1 – Livelihoods and economic impacts of flooding at Aggah



100% of households reported adverse impacts on drinking water; specifically, the floods have damaged boreholes and wells, and contaminated streams that are used as natural water sources.

Over 90% of respondents reported that the floods reduce their harvests and, therefore, their agricultural income. As a result, crops that were once common in Aggah, including cassava, maize, yam, cucumber, melon, plantain, potato, bitter leaf, okra, corn, onion, groundnut, papaya, are less successful. Specifically, the flooding washes away nutrient-rich topsoil, reducing agricultural yields.

Almost 90% of survey respondents reported having to physically relocate as a result of the floods. The flood has destroyed both household buildings (43%) and community infrastructure, including schools (39%) and recreation centers (79%).

All respondents reported that flooding affects the prospects for fishing in Aggah. Specifically, the floodwaters damage fish ponds and disturb the river banks where fish breed; as a result, fishermen can spend a whole day fishing and return without catching anything. Many survey respondents suspect that fish have migrated out of the area because of the floods.

The floods have also caused 98% of households (all but ten responding households) to lose livestock such as goats, chickens, sheep, dogs, grasscutters (a type of local rodent reared for food), pigs, ducks and turkeys.

Indicator 2: Impacts to health

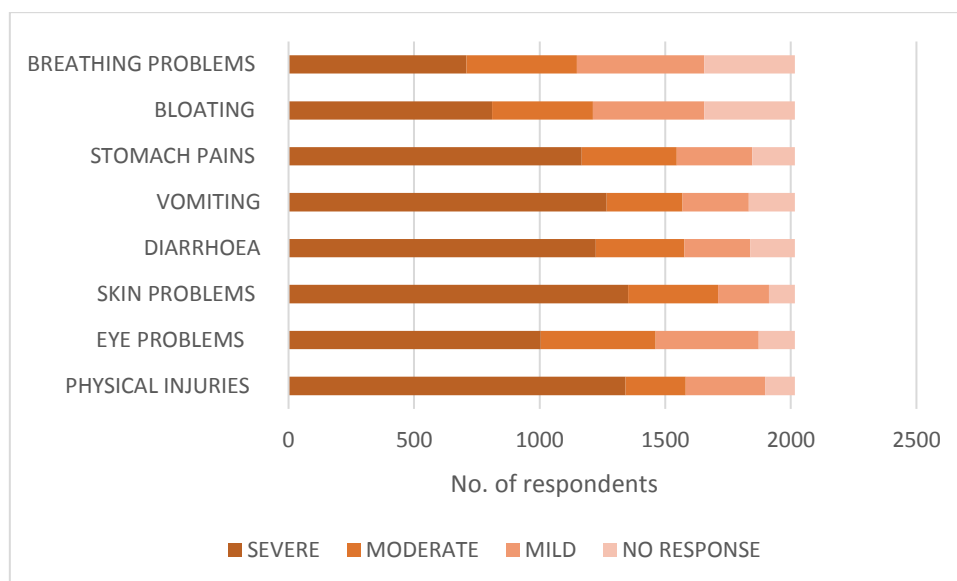
The survey included questions that assess in detail the impacts of the flooding on the health of Aggah residents. Respondents were asked to report on the relative severity of selected health impacts and also to list and explain the most serious health impacts that they experience as a result of the floods.

In general, a majority of households reported a moderate to severe incidence of a wide range of disorders, which they attributed to the floods. (See Chart 2 below.)

Specifically:

- 66.6% of respondents reported severe physical injuries
- 49.8% of respondents reported severe eye problems
- 67.1% of respondents reported severe skin problems
- 60.7% of respondents reported severe diarrhoea
- 62.9% of respondents reported severe vomiting
- 57.9% of respondents reported severe stomach pains
- 40.2% of respondents reported severe bloating
- 35.2% of respondents reported severe breathing problems

Chart 2 – Health impacts of flooding at Aggah



In addition to these general categories of disorders, respondents reported a high incidence of malaria (1,767 responses), typhoid (1,535 responses), pneumonia (1,176 responses), eczema (595 responses), and cholera (554 responses). Other common responses included arthritis (264 responses), leech bites (98 responses), snake bites (50 responses), and waist pain (26 responses). These ailments result in increased medical bills for individuals (825 responses).

Indicator 3: Impacts on women

The survey included questions that specifically assess the impacts of the flooding on women's health and well-being.

35% of women who responded to the survey (366 individuals) reported suffering severe menstrual problems as a result of the flooding, and 11% (119 individuals) reported severe complications with childbirth. Some respondents specified that they suffered from irregular menstrual cycles and miscarriages. (See Charts 3 and 4 and Table 1 below.)

Chart 3 – Incidence of menstrual difficulties due to flooding at Aggah

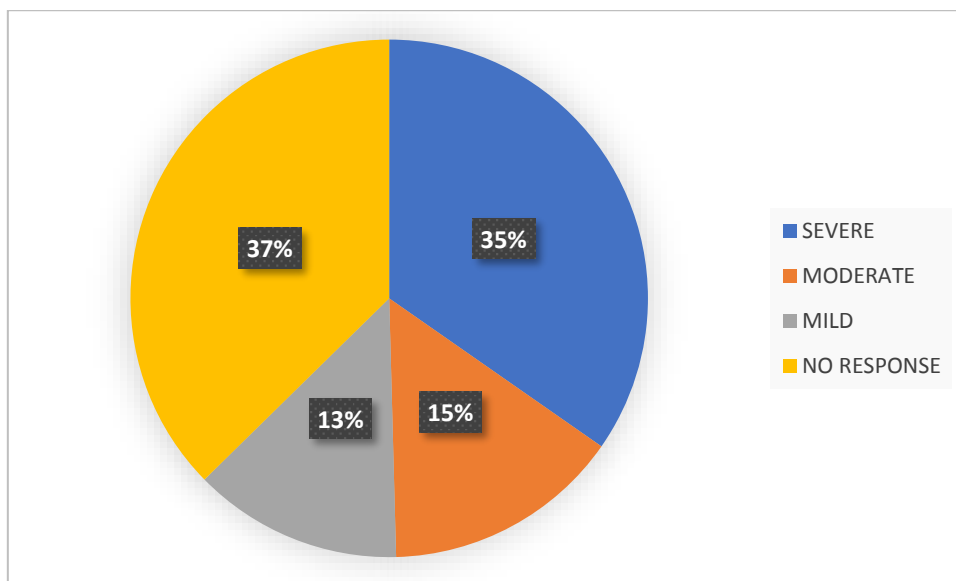


Chart 4 – Difficulties with childbirth due to flooding at Aggah

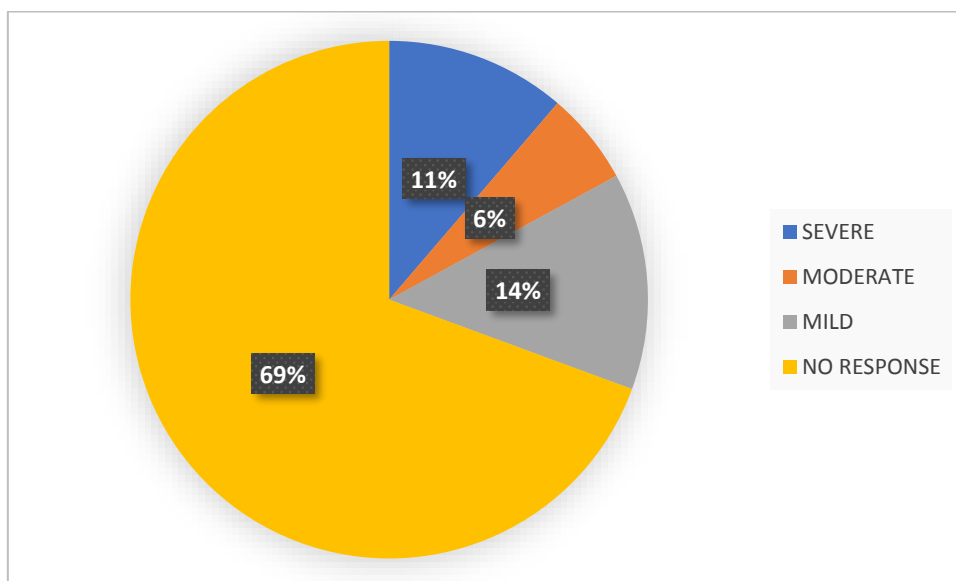


Table 1 – Summary statistics for women’s health impacts due to flooding at Aggah

| | MENSTRUAL PROBLEMS | DIFFICULTIES WITH CHILDBIRTH |
|--------------------------|---------------------------|-------------------------------------|
| SEVERE | 366 | 119 |
| MODERATE | 157 | 61 |
| MILD | 138 | 143 |
| NO RESPONSE | 394 | 732 |
| TOTAL RESPONDENTS | 1055 | 1055 |

4. Conclusions and discussion

The data collected demonstrates that the impacts of decades of flooding on the people of Aggah are severe and widespread. The floods destroy property, damage residents' ability to provide for their basic necessities through fishing and agriculture, degrade health, and reduce household income. The health impacts affect all residents of Aggah, but women in particular suffer an additional burden due to the effects of the flooding on their reproductive health.

Some caution is needed in the interpretation of results, however, for the following reasons:

Difficulties in determining causal linkages for some impacts. While it is clear from the data that the residents of Aggah attribute their hardships in large measure to the annual flooding, the mechanism by which the flooding causes each individual hardship bears further interrogation. In some cases, the causal connection is hard to dispute – for example, respondents' reports that the months-long floods damage personal property, destroy fish ponds, and erode the fertile topsoil from farmlands.

Many of the health impacts, by contrast, are not as obvious. Some of those people who reported waist pain explained that it is caused by the strenuous nature of wading through floodwaters. Malaria is one of the most consistently reported complaints; some respondents also described a proliferation of mosquitoes due to the standing floodwaters, which may explain the connection. However, additional data on differential incidence of malaria between Aggah and similarly situated but non-flood-prone communities would help to more firmly establish a causal connection. As for the other commonly reported health impacts, some (typhoid, skin problems) may be connected to the persistence of contaminated, standing water in the community, while others (respiratory disorders, stomach pains, diarrhoea) may have to do with the presence of rotting organic material that fouls both the water and the air. As for the impacts to women's health, the survey administrators learned from individual conversations that women believe the floods make their lives physically and emotionally more strenuous and unpredictable, which leads to complications in menstruation and childbirth. Further research is necessary to firmly establish whether and the degree to which these phenomena are connected to the flooding.

Lack of baseline data and subjectivity of responses. Because the flooding has been ongoing for so many decades, there is no publicly available, pre-flooding baseline data with which to compare the results of the survey. Therefore, this impact assessment constitutes a stand-alone report representing the impressions and beliefs of the members of the Aggah community as to the impacts of the flooding.

Lack of individualized data on livelihoods impacts. Because the survey administrators collected livelihoods data at the household level, the results do not allow for the disaggregation of livelihoods impacts on women and children. The designers of the survey recognized that men, women, and children are often feel different economic impacts of events like floods but, because of time and resource limitations, chose to rest on an assumption that most impacts to economic well-being are felt at a household level.

Limited number of individuals in each household sampled for health data. Because of time and resource limitations, detailed health data was collected for at most four members of each household, whereas general data on livelihoods impacts was reported for entire households (many of which are larger than four individuals). Thus the population for which health data is reported is of a different size than the population for which livelihoods data is reported, and the incidence of

health impacts may be skewed by the fact that only four members per household were able to respond. While this limitation undoubtedly resulted in under-reporting of health impacts in terms of raw numbers, it may have resulted in the over-reporting of the *incidence* of particular disorders if households chose only the most seriously affected members to respond to the survey.

None of these limitations or areas for further research, however, calls into the question the overall conclusion that flooding causes severe, widespread, and diverse impacts to the health, livelihoods, and overall standard of living of the residents of Aggah.