SAVING LIVES CHANGING LIVES



### **SATELLITE IMAGERY** to support WFP emergency response



### CONTEXT

In 2019, the region of Mopti in central Mali faced a dramatic deterioration of its security situation. The presence of armed groups and self-defense militias, increasing criminality and intercommunal tensions triggered a spiral of violence, leading to a loss of livelihoods for displaced populations and difficulties in cultivating fields and accessing markets for those who have remained in their villages.

To overcome access constraints, WFP Mali used high-resolution satellite imagery<sup>1</sup>, a homogeneous and objective data source able to scan the whole area of interest every six days. By detecting physical impacts of the conflict, such as cropland abandonment, the analysis provides a comprehensive overview of the 2019 post-harvest situation in Mopti region, allowing to identify vulnerability patterns and hotspots.

### **PROJECT OBJECTIVES**

The products resulting of this pilot analysis are an overview map and population estimates in areas affected by agricultural decline. They provide evidence to inform WFP and all partners, contributing for :

- Food security analysis in support of the Cadre Harmonisé of November 2019 and March 2020;
- Humanitarian response as a tool to enhance targeting and decision-making mechanisms;
- Advocacy by bringing to light tangible impacts of the ongoing violence in hard-to-reach areas.

### **KEY POINTS**

- A decrease in cultivated land area was detected for 25% of Mopti localities in 2019, compared to pre-conflict years.
- Localities affected by **medium** to **severe** cropland loss are situated in the south-eastern part of the region, where an exacerbated intercommunal violence occurs.
- **Violent events**<sup>2</sup> were reported in most localities where agricultural decline was detected in 2019.

### Cropland loss detected by satellite imagery and violent events in 2019



Satellite images acquired during the agricultural season were analysed to assess the degree of cropland change between 2019 and a year prior to the conflict (2016, 2017)



World Food Programme

2 Source : ACLED data. Available at acleddata.com/data

**Earth Observation** technology has become a mainstay of WFP analytical work since 2010 and is currently used for a number of operational activities throughout the organisation.

In the context of Mali, satellite imagery is useful to overcome access constraints and territory vastness: by detecting agricultural decline, it helps identifying vulnerable villages.



**Satellite images showing the impact of movement restrictions on cropland patterns around three villages (Koro cercle)** *Left* The satellite image dated from August 23<sup>th</sup> 2017 shows natural vegetation in dark green, while cultivated fields appear as many beige rectangles, visibly spread all around the villages (represented with yellow stars).

*Centre* On the other image, dated from August 18<sup>th</sup> 2019, only the fields that are close to habitations appear to be cultivated, concentrated within a 2-kilometre buffer around the villages. Beyond this delimitation, natural vegetation covers up fields that farmers used to cultivate before, but were forced to abandon that year following direct threats or acts of violence.

*Right* A field picture, taken during a validation mission conducted on November 21<sup>st</sup> 2019, shows the delineation beyond which farmers could not access to cultivate. Interviewees from all visited villages explained that they were unable to cultivate normally in 2019, due to insecurity, and confirmed the significant reductions in cropland areas, as detected from space.



World Food Programme in Mali

Badalabougou East, Street 31, Door 26 BP 120 Bamako, Mali +223 20 79 20 45 / 20 79 45 77 wfp.bamako@wfp.org

#### May 2020 | Satellite imagery | WFP Mali

# 我们的产品



# 大数据平台

国内宏观经济数据库 国际经济合作数据库 行业分析数据库 条约法规平台

国际条约数据库 国外法规数据库

## 即时信息平台

新闻媒体即时分析 社交媒体即时分析

## 云报告平台

国内研究报告 国际研究报告

## 预览已结束, 完整报告链接和二维码如下:

https://www.yunbaogao.cn/report/index/report?reportId=5\_3665

