

## SAM PHOTO DIAGNOSIS APP

### THE APP THAT DETECTS CHILD MALNUTRITION WITH A SINGLE PHOTO

#### THE PROBLEM: LACK OF QUICK, EASY AND ACCURATE DIAGNOSIS OF CHILD MALNUTRITION

Global hunger has reached alarming levels. Since 2019, conflicts such as the war in Ukraine, the COVID-19 health crisis and climate adversities have steadily increased the number of hungry people in the world. This situation has exacerbated the risk for children, with around 8,500 children dying every day due to malnutrition. This figure represents almost half of all deaths in children under five. Paradoxically, one of the main underlying factors is the lack of a rapid, easy and accurate diagnostic method for early detection of the condition.

#### HOWEVER, THIS SITUATION MAY CHANGE

We are convinced that a tool that enables early identification of child malnutrition from a simple mobile phone can be key to combating

malnutrition and hunger around the world. The widespread availability and accessibility of mobile phones today is the best ally for our vision. Africa, for example, despite the challenges it faces, has witnessed the transformation that technology can bring to various aspects of daily life. From communication to mobile money, digitalization has advanced by leaps and bounds and it is estimated that by 2025 smartphone connections will double in West Africa alone.

#### THE SOLUTION: SAM PHOTO DIAGNOSIS APP®

This is where the SAM Photo Diagnosis app, developed by Action Against Hunger, offers a ray of hope. This innovative tool, backed by rigorous scientific research, is able to detect child malnutrition with a simple photograph of a child's left arm taken with a mobile phone. This speed and simplicity of identification is the first step towards life-saving treatment.

We envision a world where the application is available to everyone - from parents to health workers in remote communities, which supports local health

centres. Thanks to SAM Photo, they will be able to detect signs of malnutrition early and refer children for appropriate treatment, making the difference between life and death. In addition, SAM Photo ensures the collection of accurate and reliable information on child malnutrition, optimising the use of human and financial resources. Finally, SAM Photo promotes the involvement of communities in nutritional identification and treatment, improving coordination between health centres and families.

#### HOW DOES IT WORK?

The process is intuitive. A person takes a photo of the child's left arm, without the need for an internet connection. The application evaluates the image, determining the nutritional status through a previously validated algorithm. Once analysed, the photograph is automatically deleted, and if there is an Internet connection, the anonymous data is stored in a database that constantly improves the algorithm and provides information of great use to public health systems. Finally, the user receives detailed information about treatment options in his or her area.

#### MALNUTRITION FIGURES

- **3.1 million children** under the age of five die of malnutrition every year.
- The risk of death for a child with acute malnutrition is up to **20 times higher** than for children without malnutrition.
- **80% of undernourished children** under five years of age do not receive adequate treatment.
- Compared to 2019, **122 million people** more suffer from hunger today.
- By 2030, **600 million people** will be chronically undernourished, taking us further away from Sustainable Development Goal 2, Zero Hunger.

#### For more information:

✉ [samphoto@accioncontraelhambre.org](mailto:samphoto@accioncontraelhambre.org)

📺 [Video: SAM Photo - ACF](#)

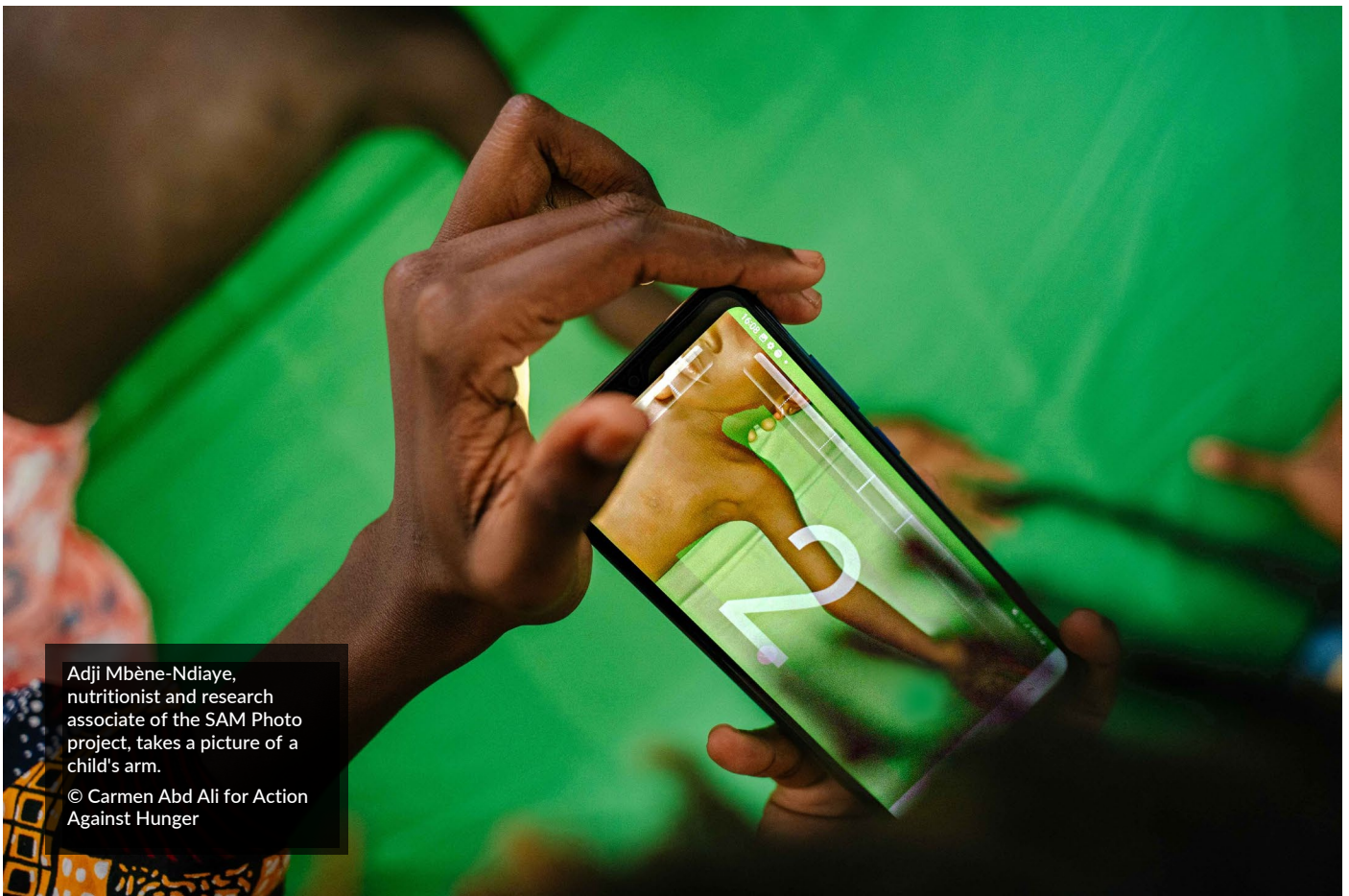
## NEXT STEPS AND SPACES FOR COLLABORATION

The year 2023 marks a pivotal point in the development of SAM Photo and charts the path we will travel in 2024. In this year we will complete the development and validation phases of the minimum viable product (MVP), which promises to automatically screen malnutrition through a simple photo. Our vision is ambitious and clear: to empower communities in places as diverse as Senegal, Guatemala and India with the strength of the power of mobile technology.

By 2024, the aim is to introduce application to new vulnerable geographic contexts, ensuring the necessary development for optimal operation on a larger scale.

We are at a turning point. Technology and research are coming together to address a problem that has affected mankind for far too long. With the right support and unwavering determination, SAM Photo Diagnosis App has the potential to change the course of history in the fight against child malnutrition.

**We need to join efforts and capacities, building partnerships that are committed to another way of dealing with malnutrition, and with which to work together.**



Adjii Mbène-Ndiaye, nutritionist and research associate of the SAM Photo project, takes a picture of a child's arm.

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