



WEHUBIT

Project name

**Machine Learning**

Country

**Zanzibar, Tanzania**



Implemented by



Budget

**349.887 €**

Duration

**12/2019 – 11/2021**

Contribution to SDGs



Implemented by



Financed by



## CHALLENGES/CONTEXT

Zanzibar faces high levels of neonatal mortality as a result of delays or inability to seek care and biological risk factors that go undetected due to lack of contact with providers. Moreover, the health system in general suffers from a lack of resources, especially for Community Health Workers (CHWs).

The Government of Zanzibar is implementing a national digitally-supported community health program to provide essential health, nutrition, and development services to pregnant women and children.

In that framework, machine learning (ML) is an innovative approach that has potential to improve effectiveness and efficiency of service delivery of Maternal Neonatal and Child Health (MNCH).

## DIGITAL SOLUTION/APPROACH



The project aims to personalize and improve MNCH in Zanzibar by integrating predictive analytics into the national digital community health system using machine learning. This innovation will enable CHWs to pre-identify women with high-risk pregnancies and target prenatal and postnatal services to mitigate risk and improve outcomes.

The solution builds on a highly effective digital system that has been implemented since 2011 in partnership with the Ministry of Health (MOH) in Zanzibar. The system gives the project unique access to comprehensive longitudinal client data that is continuously updated.

## WEHUBIT EFFECT



### INTENTIONAL ALLOCATION OF RESOURCES

Wehubit enabled the creation of a predictive model that will help policy makers to identify high-risk populations and improve their health outcomes.

### CONTRIBUTION TO UHC IN ZANZIBAR

This model will help us better utilize national program data to achieve more precise and accurate predictive models for perinatal mortality at national scale.

### CONTRIBUTION TO ML FIELD

Estimating high-risk pregnancies is new in the field. Learnings will contribute to program improvements and entire body of knowledge of decision support tools for CHWs.

## EXPECTED ACHIEVEMENTS

We anticipate our digital solution will lead to improved access to quality essential MNCH services for at-risk populations by integrating machine learning and predictive analytics into the national digital community health system to estimate which women are at a high-risk of perinatal mortality, and provide tailored care pathways to mitigate this risk. In the study area, we expect to contribute to universal health coverage (UHC) and increase access to quality essential health-care services.



## LESSONS LEARNED

With the accuracy, precision and recall of state-of-the-art ML models for predicting perinatal mortality, one needs to make sure to not design a service that (unintentionally) introduces new risks or negative side effects, such as emotional distress and resulting real risk for wrongly classified at-risk clients (false positives); false sense of security and relaxed health seeking behavior for at-risk clients classified as not-at-risk (false negatives), as well as not reducing service quality for actual not-at-higher-risk clients.

## WOULD YOU LIKE TO KNOW MORE?



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