



## Case Study

# SUSTAINABLE FORESTRY MADE EASY USING LOW-CODE

A Dutch software firm creates a mobile platform with offline features that enables field workers to securely capture logging data in the remote forests of Africa.



NRD (Natural Resources Development S.A.) is a company based in Liechtenstein. The company deals with sustainable forest management and works in the African sub-continent. Since they rely extensively on data, NRD wanted to digitize all their sustainable forest management processes. To achieve this end, they entered into a partnership with Vanenburg software, who are an independent IT services company based in the Netherlands. Vanenburg is also a WaveMaker certified premier partner of the European Union (EU). They work in the mobile applications and cloud services domain for both large and small enterprises.

## vanenburg

The Company:  
Independent Software Service Provider

Industry:  
Technology and Software

Location:  
Netherlands

## BUSINESS SCENARIO

The Republic of Liberia in Africa is a country with a serious history of illegal logging, which is the harvesting and selling of timber in violation of national and international laws. Unfortunately, this remains a serious issue to this day. To mitigate this issue, the United Nations (UN) came up with a system built on barcodes to track logs moving through the supply chain.

NRD S.A. is the entity chosen by the EU to help Liberian authorities with the task of curbing illegal logging in the country. NRD conjured a system to streamline their legal logging operations. The intention was to manage processes like verification and licensing of authorized logs being exported across the world.

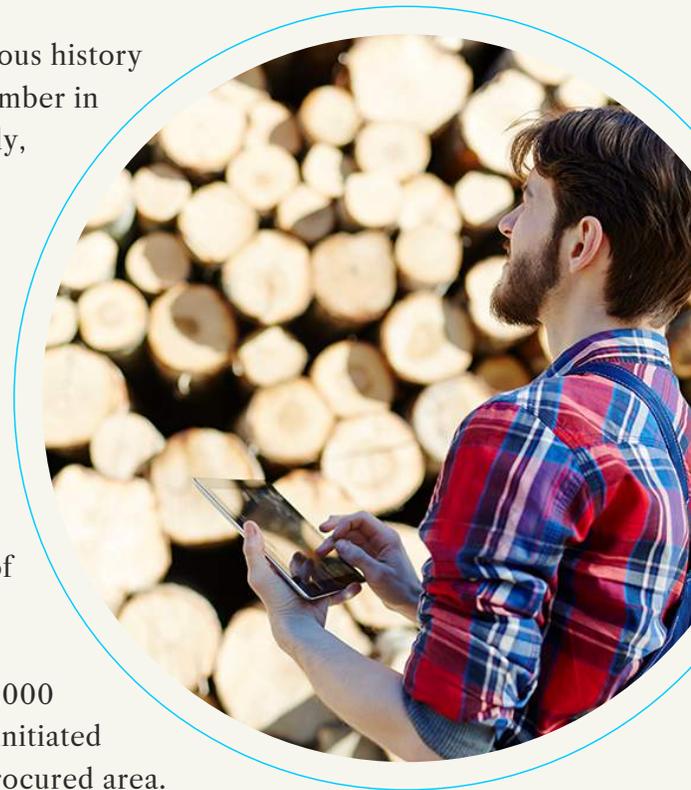
In order to accelerate this process, NRD invested in 440,000 hectares of forest area in Brazil as well as Liberia. They initiated a sustainable forest management operation within this procured area.

Data collection was the prime focus. Every hectare and tree within its perimeter were earmarked using barcodes that were generated with the help of parameters like GPS location, dimensions, log time, and so on. The list of barcodes are maintained by the forestry department on a central database stored on the cloud.

Trees are chosen for logging based on factors like quality, carbon dioxide neutral nature and so on. This makes logging choices traceable, transparent and in sync with necessary regulations.

## SOLUTION

The main challenge for Vanenburg was to design a solution that could digitize all NRD's processes. The tool had to be capable of **tracking forest operations, financial processes, logistics and fleet management**. The platform had to be mobile-first so field workers in remote Liberian forests could tag each tree and record it offline on their mobile devices. This captured data would be uploaded to a cloud-based portal at a later point in time. In addition, the software must be capable of capturing all this data while offline.



Achieving this and creating a mobile compatible product was the challenge that Vanenburg faced. However, they were able to pull it off using the WaveMaker low-code platform.

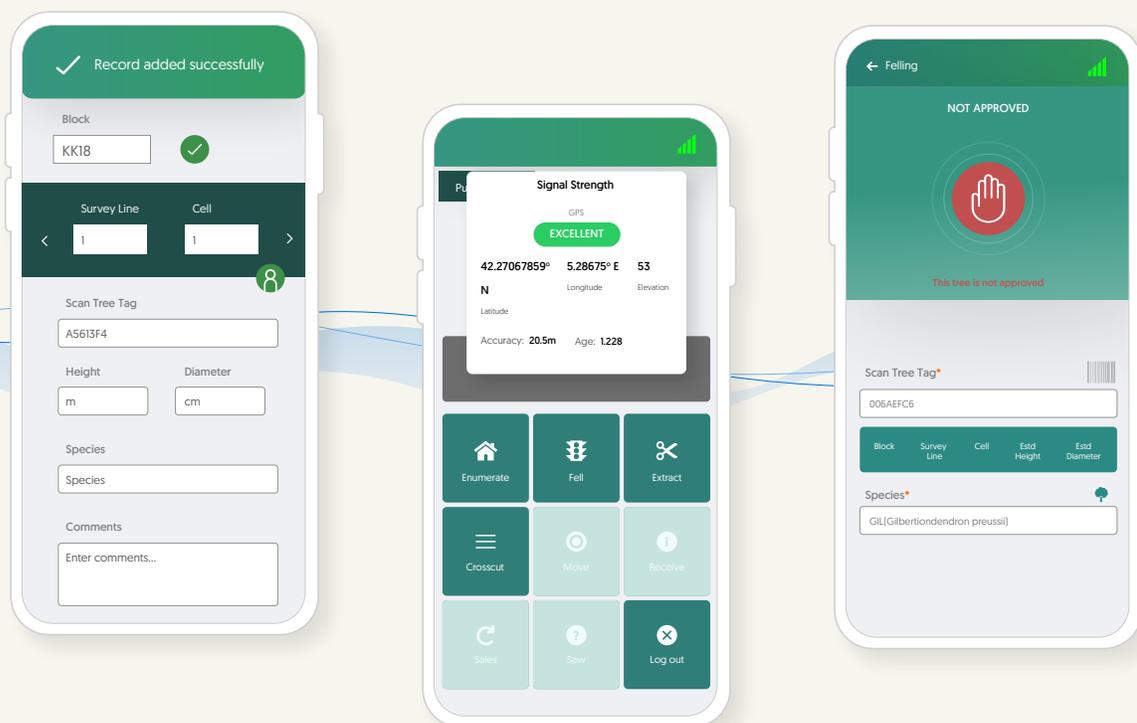
In its quest for a good platform, Vanenburg discovered WaveMaker which outdid other vendors in terms of scalability, onboarding time and offline capability. Vanenburg used WaveMaker to build a modern application at speed and scale.

## RESULTS

Vanenburg software used WaveMaker’s open standards-based low-code platform to build a mobile application for NRD. The advantage with WaveMaker is that it uses component based microservices architecture. It can also help in creating applications for web and mobile experiences. Additionally, APIs (Application Programming Interface) can be auto-generated.

Vanenburg used HTML5 based UI themes and widgets offered by WaveMaker. The resulting interface was user friendly and easy to operate.

The application created using WaveMaker was linked to various functions on a mobile phone. The app captured data like GPS location and so on. As a result, tagging trees and capturing data such as log time and dimensions was easy. The data was captured and stored in offline tables built into the app.



## Offline Functionality

The offline functionality was the primary requirement in the application being developed for NRD. This is because field workers had to step out into remote jungles to capture data on their mobile devices. These areas lack internet connectivity. Therefore, all the data capture had to be done in the offline mode.

The platform that Vanenburg built using WaveMaker allows for offline data capture. This allows for data storage on a local device which is uploaded to a cloud-based platform at a later point in time.

The application built for NRD was completely data driven. Therefore, offline-online syncing happens seamlessly. The syncing process is designed to operate with minimum overheads. Consequently, a large quantum of data records can be transferred between the device and the cloud-based platform even over a weak network signal. This occurs swiftly and with negligible latency.

## Real-Time Tracking

Getting logging approvals was at the front and center of all operations at NRD. The app built using WaveMaker facilitates real-time tracking of the approval status of logs. Using this platform, users can track, control and manage all operations in real time.

# SUMMARY

The Republic of Liberia in Africa is a country with a serious history of illegal logging. NRD S.A works with Liberian authorities and is trying to contain the issue of illegal logging.

Vanenburg software was a strategic partner in designing a solution to support this endeavor. Vanenburg software used the WaveMaker's open standards-based low-code platform to build a mobile application for NRD which provided both offline capability as well as tracking of operations in real-time.

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To know more about how we can help you digitize business operations, write to us at [info@wavemaker.com](mailto:info@wavemaker.com)

