

Providing vital infrastructure to rural areas

Bridging Case Study



Niari River, Republic of Congo

Customer: SE.AS Sarlu

Solution: Mabey Universal™



The Challenge

Italian Contractor SE.AS has been in the Republic of Congo for at least nine years building roads and bridges. When the company needed to bridge the Niari River near the provincial capital of Madingou in the south of the country, it needed a solution that would be robust enough to last and provide a vital crossing for locals, but also one which could be easily installed in difficult terrain by unskilled local labour.

The Niari River extends for 560km and is difficult to cross for its entire length. The river features rapids and waterfalls that rise and fall dramatically throughout the year, making it difficult to navigate by boat. At this stretch near Madingou, an underpowered ferry provides limited crossing for locals, but the ferry cannot operate when the river is too high or too low, hence the urgent need for a new bridge.

The Solution

Conditions along this stretch of the Niari River are very difficult. Heat, humidity and soft ground are made worse during the rainy season. To further complicate the issue, local infrastructure is very basic, with only dirt tracks leading to the bridge site.

The bridge chosen for this project was a 103.5m long 3-span, Mabey Universal™ with a 6.3m roadway carrying two-way traffic and internal pedestrian walkways. The Mabey Universal™ bridge system is the 'big brother' of the Mabey Compact 200™ system and an advanced development of the original Bailey bridge. The Mabey Universal™ is ideal for longer span permanent rural bridges, bridges for mining, logging and mineral extraction sites, temporary and permanent site accesses and river crossings for heavy off-road earth moving vehicles.

The immediate concern facing the installation team was a restricted assembly area, difficult conditions and delays to site preparation. Abutments had been prepared prior to the arrival of the bridge components, however, there were issues. The side retaining walls did not provide sufficient clearance, so a degree of remedial work was required. Additionally, reinforcing bar baskets, featuring on both abutments and piers were installed for earthquake protection. Mabey site advisors have a great deal of experience under such conditions and the modular nature of the Mabey Universal™ means issues such as these present little real challenge to assembly or launch.

The bridge was assembled and launched into final position with ease using only a single 40 tonne capacity crane and a local workforce of 15 people. The team was faced with further changes when heavy rain caused the river to rise by 2-3 metres but the team overcame this and successfully installed the bridge.

The Result

The Madingou Province in the Republic of Congo is a challenging region in need of vital infrastructure improvement to provide local communities with easier movement and to support economic and cultural growth. With many natural challenges and conditions conspiring to make this process more difficult, the country must rely on robust systems to achieve this. The Mabey Universal™ bridge system is an excellent solution in this situation and with the expert advice and management delivered by the Installation Advisor, these challenges were easily overcome and the area now has a permanent bridge which is providing a much needed crossing.



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