

Electrifying colonial Africa: Portuguese developments

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ABSTRACT

The electrification of Portuguese African colonies was a long-term process beginning in the late nineteenth century. Interestingly, it was boosted by a late effort of Portuguese colonialism after World War II, in the international context of the 'second colonial occupation', following the example of other European colonial powers. But it faced both international censure and the pressure of liberation movements such as the Marxist "Frelimo" breaking through in Angola, Guinea, and Mozambique in the early 1960s.



Le barrage de Cabora-Bassa, au Mozambique. Source : [Climate and development knowledge network](#).

Portugal built electricity generation facilities in Africa from the late 1890s until 1976, two years after its retreat from the continent. Indeed, the military insurgency (1974) that removed the dictatorship and paved the way for democracy and decolonization did not prevent the completion of works under construction. The electrification of Portuguese colonies (Cape Verde, Guinea-Bissau, Sao Tome and Principe, Angola, and Mozambique) began with isolated, small-scale generators supplying farms/plantations, industries, and municipalities with lighting, promoted by colonial administrators and private entities. After World War II (WW II), the process changed completely.

In the aftermath of WW II, Europe recovered on the basis of overseas territories development, for which the

Marshall Plan allocated funds. Also driven by the urgency to promote the progress of indigenous peoples and the need to plan public investment, this economic development was carried out through the adoption of systematic plans: France drew up plans for its overseas territories in 1946, Belgium for Congo in 1948, Italy for Somalia in 1954, and Britain for several territories at different dates. In these schemes, the development of hydroelectricity in Africa became central. Africa was seen as having exceptional conditions to produce hydropower, i.e. water and level difference, the two cheapest assets to produce electricity. At the time, the power of producing hydroelectricity across the globe (in exploration and unexploited) was estimated at circa 500 million kW, with the largest share for Africa (200 million kW against 130 for Asia, 50 for Europe and 125 for the Americas). This perspective led France, Belgium and Britain to electrify Africa and to transfer their most energy-intensive industries there, in particular chemical or electro-metallurgical industries such as aluminium.

At the beginning of the 1950s, the protagonists in the Portuguese case had been individuals, who held both the largest number of production units and the largest percentage of power produced. The stations were mostly thermal and consumption was spread evenly between motive power and lighting. The large spread in power generation and high cost were characteristic of the incipient development of territories and low population density. Thus, according to historical actors, an urgent rationalization of the sector was necessary. Low cost energy was associated with development and economic prosperity, which was eagerly pursued by a little-industrialised country such as Portugal with a vast empire to administrate and to legitimize in the international arena.

Therefore, the Portuguese authorities developed economic planning and especially hydropower production strategies. The mastery of river water aimed at (1) irrigating the surrounding land to increase agricultural production, (2) producing electricity at a low cost to promote industrialization and (3) improving communications. This action would be grounded on a solid scientific and technical basis, in which scientists and engineers would be the main protagonists.

| Colony | Completion year | Hydropower plant name | River | MW production/year |
|----------------------|-------------------|----------------------------|-----------|--------------------|
| Angola | 1952 | Mabubas ¹ | Dande | 60 |
| | 1954 | Matala ¹ | Cunene | 92 |
| | 1955 | Ganda ² | Cubal | --- |
| | (in place) | Coimba ³ | Cuanza | --- |
| | 1955 | Cuando ² | Cuando | 2 |
| | (in construction) | Cuito ³ | Suito | 0,30 |
| | | Malange ³ | Malange | 0,30 |
| | 1956 | Biépio ¹ | Catumbela | 38 |
| | 1959 (in place) | HEAC ² | Catumbela | 0,34 |
| | 1963 | Cambambe ¹ | Cuanza | 180 |
| | 1964 | Lomaum ¹ | Catumbela | --- |
| | 1974 | Gove ¹ | Cunene | 60 |
| Mozambique | 1953 | Mavuzi ⁴ | Revuê | 52 |
| | 1954 | Chicamba Real ⁴ | Revuê | 38,2 |
| | 1974 | Cabora Bassa ⁵ | Zambeze | 2000 |
| | 1976 | Massingir ¹ | Elefantes | 60 |
| Sao Tome Príncipe | 1950s | Guegue ¹ | Guegue | 320 (capacity) |
| | 1967 | Contador ¹ | Contador | 1000 (capacity) |

Table 1: Hydropower plants built by Portuguese settlers in African Colonies 1945-1976

Source: elaborated by the author based on documents from the Archives of Overseas History, Lisbon.

Legend: 1 – State owned; 2 – Private owned; 3 – Concession to Municipality; 4 – Private/Public consortium; 5 – State owned, built by an international consortium; --- Unknown.

Among the small and large dams in table 1, Gove and Cabora Bassa are good examples to illustrate the ingenuity of a country under international censure, carrying out a war effort overseas, with scarce financial resources but well-trained engineers to accomplish ambitious projects. The ‘general plan for the use of Kunene’ (1962) foresaw the eminence of the Matala plant saturation and designed the construction of Gove dam (1969-1973) to provide Matala with an adjustable flow rate and to increase its production up to 100 GWh. Gove (fig. 1, 1) was central in the negotiations between Portugal and the Republic of South Africa (RSA) on the ‘Use of Water Resources in the Kunene Basin’. The final Agreement (1969) led RSA to finance the construction of Gove dam, under very favourable conditions for Portugal, 50% of the total amount being non-refundable. The counterpart was the commitment by the Portuguese not to use, for irrigation, a throughput greater than 50% of the flow regulated by the Gove reservoir. RSA also paid for the realization of the Ruacana hydroelectric (Fig. 1, 11) and Calueque dam (Fig. 1, 9).

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