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"Global food security and food safety:
The role of universities"

Historical Forestry Research from the Belgian Colonial Period in the Democratic Republic of Congo

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Abstract

Globally, forests influence climate change through complex, often nonlinear, forest-atmosphere interactions, such as carbon sequestration, decreased surface temperature through reduced solar irradiance and evaporative cooling. Likewise, climate change impacts forests in myriad ways, including shifts in plant phenology, changes in ecosystem productivity, and alterations in the geographic distribution of plant species. Trees are thus a unique living document of past and current climatic influences. The UNESCO biosphere reserves Yangambi and Luki are situated within the Congo Basin rainforest, which is the second largest rainforest in the world and presently a persistent carbon sink. Given its role as mitigator for global warming, reliably predicting how the Congo Basin rainforest will respond to climate change is key. Such predictions are complicated, however, by an apparent lack of ecoclimatological baseline data for Central Africa. This data gap reflects the inaccessibility of such data, not the unavailability. In fact, forestry research in the Democratic Republic of Congo dates back to 1937, when the Institut National pour l'Etude Agronomique du Congo Belge (INEAC) created its Forestry Division. Particularly noteworthy are the long series of unpublished detailed phenological observations and daily climatological data records, both of which are unique on a global scale. Historical collections, located at the Royal Museum for Central Africa, the Botanic Garden Belgium, the National Belgian Archives, and in local herbaria in the DRC, provide data and insight into the dynamics of tropical forests and their resilience after disturbance. Here we report on current efforts to digitise and valorize data from forestry research carried out in the DRC between 1900–1960. We will address in particular the creation of the Forestry Division, as recorded in archival documents. We will also present an overview of the methodologies used by INEAC to collect phenological observations of trees, and arboreal samples.

Keywords: Climate change, legacy data, tropical forests, UNESCO bioreserves

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