

**The Distributional Impact of Dams:
Evidence from Cropland Productivity in Africa**

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Introduction

“One day every last drop of water which drains into the whole valley of the Nile...shall be equally and amicably divided between the river people, and the Nile river... shall perish gloriously and never reach the sea”

Winston Churchill, 1908

- The first dam can be traced back to the Egyptians nearly 4,000 years ago
- Today there are over 45,000 large dams worldwide, obstructing over half of the world's rivers
- The underlying belief is that by increasing irrigation (reducing rainfall dependency) and producing hydroelectricity ('cheap power source') they can aid economic development
- However, large dam projects are arguably also controversial in that they transfer river resources from one set of users to another → winners & losers

Introduction

- World Commission on Dams (2000): “...a lack of equity in the distribution of benefits has called into question the value of many dams in meeting water and energy development needs when compared to alternatives”
- However, despite the controversial effects, there is, apart from case studies, only one comprehensive statistical study disentangling these effects: Duflo & Pande (2007)
- Duflo & Pande (2007): investigate the effect of dam construction in Indian districts and find (a) no effect of dams in district of location, but (b) positive effect of dams upstream on agricultural production and poverty reduction

Introduction

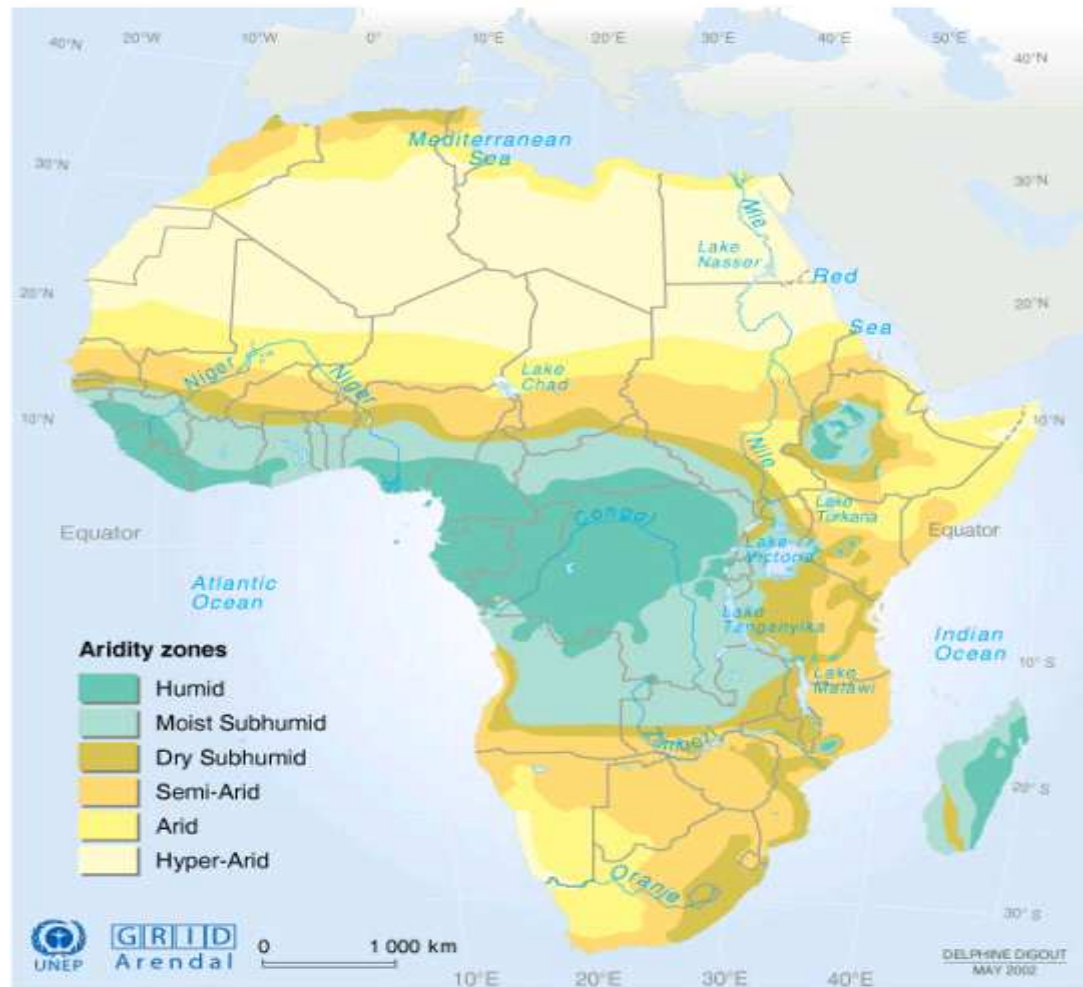
This paper examines the effects the distributional effects of dam construction on cropland production in Africa

- Contributions:
 - a. The question is particularly important for Africa
 - b. Methodological (data, econometric approach)

Africa, Water, and Dams

- A common view in the media and academia is that (the lack of) water has been a major obstacle to African development
- An important part of the reason are the geographical and climatic features: Africa (a) relies on the agricultural sector, (b) has high temperatures but low and very variable rainfall, (c) very diverse climatic regions (arid, semi-arid, sub-tropical, tropical) → only certain areas are suitable to agriculture and agriculture tends to be rainfed:

Aridity Zones



Source: World Meteorological Organization (WMO), United Nations Environment Programme (UNEP), *Climate Change 2001: Impacts, Adaptation, and Vulnerability*, Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).