



# IMPETUS Morocco

## Regional Geography of the Wadi Drâa catchment / Morocco

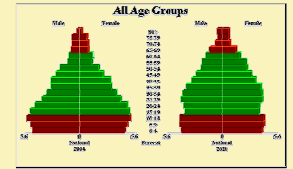
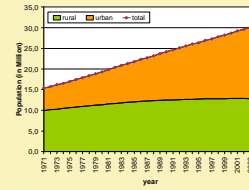
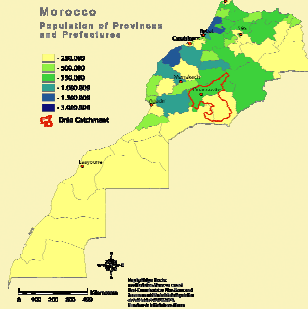
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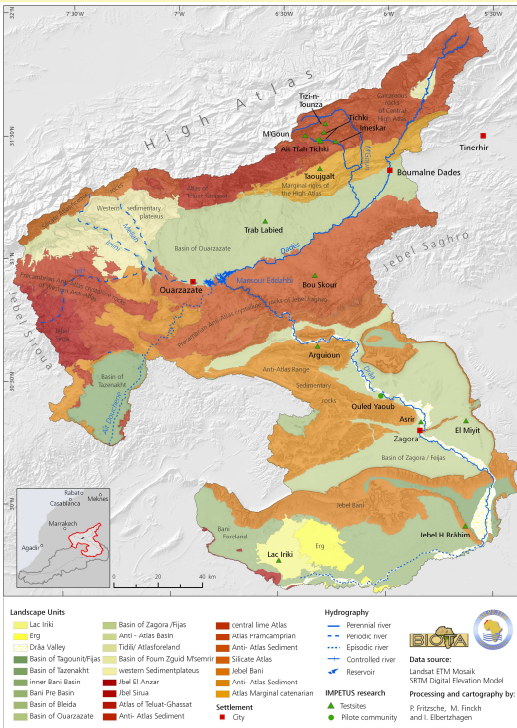
### Morocco

- Since his independence in 1956 the Kingdom of Morocco (Al Mamlaka Al Maghribia) is a constitutional monarchy.
- Administratively the country is divided into 16 regions and subdivided into 62 prefectures and provinces lead by a governor.
- Morocco is considered as newly industrialising country with a GDP per capita of \$ 3,800 growing at an expected rate of 6.2% in 2008.
- The total population is about 30 million, of which 51 % are younger than 25 years (2004).
- 99 % of the population are Muslims with small minorities of Christians and Jews.
- Arabic is the official language, approximately 12 million (40% of the population), mostly in rural areas, speak Berber.

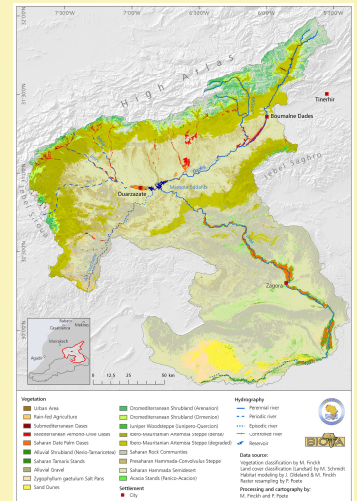
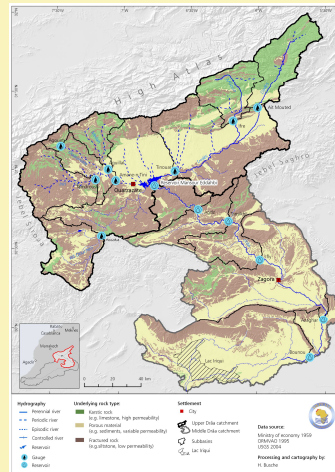


### Overview - The Drâa catchment

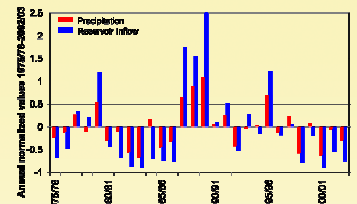
- The Wadi Drâa catchment reaches from the principle mountain divide of the Central High Atlas Mountains (4,000 m altitude) southwards to the pre-Saharan foothills.
- Most of the IMPETUS project work focused on the Upper and Middle Drâa, while the Lower Drâa is a mostly dry riverbed directed to the Atlantic Ocean.
- Research area: 29,500 km<sup>2</sup>
- The catchment is part of the provinces of Ouarzazate (population: 498,000), Zagora (population: 283,000) and Tata.
- IMPETUS testsites are shared with BIOTA Maroc.



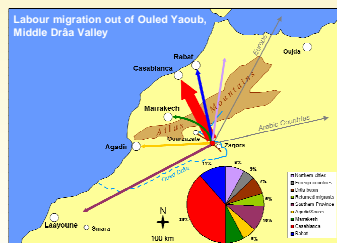
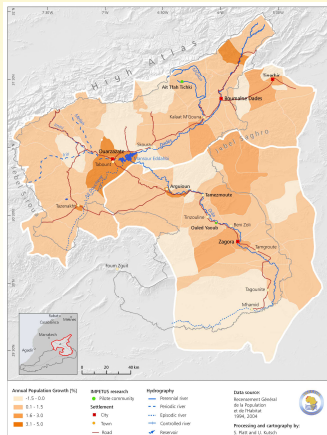
### Natural environment – Hydrology and Vegetation



- steep precipitation gradient from the semi-arid High Atlas Mountains to the arid basins and low mountain ranges in the xeric pre-Saharan foreland
- vegetation changes from Mediterranean shrub lands to Saharan desert biomes
- Only two perennial rivers tributary to the reservoir Mansour Eddahbi (capacity: 450 M<sup>3</sup>)
- irrigation of the six palm oases in the Middle Drâa Valley is controlled by this reservoir
- in the last decades, a climate variability causes humid and drought periods



### Population and Society



- The predominantly Berber and Arab population concentrates in towns and villages next to the tributaries of the Wadi Drâa
- Population generally increases, with a strong trend of urbanisation (Ouarzazate, Zagora)
- Labour migration out of the Drâa catchment is common to support families left behind (case study Ouled Yaoub)

### Land use and livelihood security

- Agriculture is only possible with irrigation and performed at 2% of the catchment's area
- volume of water releases from the reservoir has decreased
- Agriculture declines within the last years
- increasing use of motor pumps has already lowered the water table and caused salinity problems
- livestock husbandry reacts to drought periods by a decrease in the number of animals
- land and water rights loose importance for irrigation purposes, but stay important in local standing

