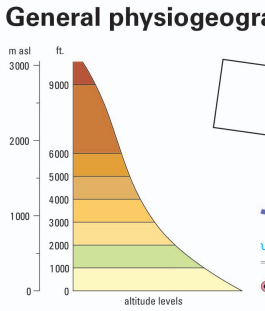
General physiogeographic and palaeoenvironment map of Central Africa



location of study areas LANDSAT-TM images

135 number of climate survey station (see **Annex 2**)

(5109) elevation (altitude in m asl)

1600 mm isohyet according to Bultot (1971-77), indicating the main area of rain forest

Lowa rivers, drainage channels

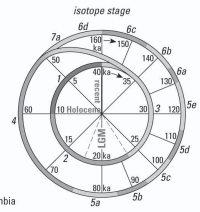
main roads and tracks (after MICHELIN road map 955)

BOMA capitals, towns and villages, locality names

1 regional location of thematic diagrams

1 - lake Chad
2 - Mbomou plateau
3 - lake Albert
4 - Mt. Hoyo, Matupi
5 - Osokari, Walikale
6 - Rwanda-Burundi
7 - lake Tanganyika
8 - Ruki, Tschuapa
9 - Malebo pool
10 - Batéké plateau
11 - Kalambo falls
12 - Biano plateau
13 - highland of Angola
14 - central plateau, Zambia
15 - marine cores

palaeoenvironment trends (time slices)



main categories

- afro-montane forest — mountain forest with *Podocarpus* (P), partly temperate forest
- forest — evergreen rain forest, ombrophile and mesophile forest
- grass savanna — (C4-dominated plant communities with scattered groups of trees)
- woodland — savanna woodland with forest islands, partly Miombo-Dambo-like vegetation mosaics

lake levels

- high
- intermediate
- low

0 50 100 150 200 250 km

subsidiary categories (transitional types)

- mosaic of mountain and rain forest
- mosaic of mountain forest with patches of grass savanna
- mosaic of rain forest and woodland
- mosaic of rain forest with patches of grass savanna (type 'savane incluse')
- mosaic of grass savanna interspersed with patches of dense mountain forest
- mosaic of grass savanna interspersed with patches of dense rain forest
- mosaic of grass savanna interspersed with patches of woodland
- mosaic of woodland interspersed with patches of grass savanna
- mosaic of woodland interspersed with patches of rain forest
- mosaic of woodland interspersed with patches of mountain forest

symbols

small letters = predominant atmospheric moisture and thermal conditions

wh	warm and humid	! = highly significant
ch	cool and humid	() = less significant
cd	cool and dry	
wd	warm and dry	
P	*Podocarpus* pollen	
Fs	spores of ferns, afro-montanous forest	
M	Miombo-Dambo mosaic *(Brachystegia, Julbernardia, Isoberlinia)*	

coastal mangroves *(Rhizophora)*, indicating high sea level (wh)

location map

References (selection)
ALEXANDRE et al. (1994)
ALEXANDRE-PYRE (1971)
BENGO & MALEY (1991)
BOULVERT (1996)
CLARK (1950)
CLARK (1982)
DE DAPPER (1991)
DE PLOEY (1965, 1968)
DECHAMPS et al. (1988)
DUPONT (1995)
FISCHER (1996)
GIRESSE (1978)
HABERYAN & KECKY (1987)
HARVEY (1976)
JAHNS (1996)
JANSEN et al. (1984)
LANFRANCHI & SCHWARTZ (1990)
MÄCKEL (1975)
MALEY (1981)
MBENZA-MUAKA (1983)
MICHEL (1991)
MORLEY & DWORETZKY (1993)
OLIVRY et al. (1995)
PREUSS 1986a, 1986b)
ROCHE (1991)
ROBERTS & BAKER (1993)
RUNGE (1992, 1996, 1997, 1998)
SCHWARTZ (1985)
SERVANT (1973)
STREET-PERROTT et al. (1985)
THOMAS (1994)
TIERCELIN et al. (1988)
VAN ZINDEREN BAKKER & CLARK (1982)
VAN ZINDEREN BAKKER & COETZEE (1988)
VINCKS (1993)
VINCENS et al. (1993)

base map:
Operational Navigation Chart (ONC), Scale 1:1.000.000, prepared and published by the Defense Mapping Agency Aerospace Center, St. Louis, Missouri, USA: ONC L-3, Revised October 1984, ONC L-4, Revised July 1988, ONC L-5, Revised February 1988, ONC M-3, Revised November 1984, ONC M-5, Revised February 1987, ONC N-3, Revised October 1987, ONC N-4, Revised March 1983.

Annex 1: Runge, J., Central African Palaeoclimates and Palaeoenvironments since 40 ka
Palaeoecology of Africa, Volume 27

author: *J. Runge*
cartography: *P. Blank*