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vergriffen

Simen Mountains Ethiopia

1:100000

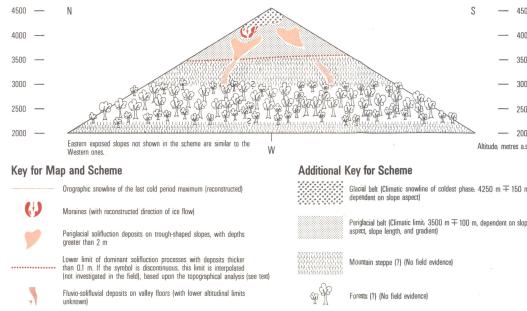


Altitudinal Belts of the Last Cold Period (Late Wurm)

Simen Mountains – Ethiopia: Altitudinal Belts of the Last Cold Period (Late Wurm)

Hans Hurni · Institute of Geography · University of Berne · Switzerland

Scheme of the Last Cold Period Altitudinal Belts Dependent on Slope Aspect



Topographic Source Material

The map is compiled from the maps ND 37-10 (1:250 000) of the Ministry of Land Reform and Administration, Addis Ababa; "Hoch-Semien" (1:50 000) by J. Wandeker (1968); "Debsk" and "Simen Mountains National Park" (1:25 000) by Pro Semien Foundation, Zürich, Institute of Geography, Berne; World Wildlife Fund, Merges, and

Project: H. Hurri and B. Messari, Institute of Geography, University of Berne, and M. Zurbuchen, Institute of Photogrammetry and Engineering Survey, Berne, Switzerland.

Field completion: 1977 (1980)
Design and Field Survey, H. Hurni (1976/1977/
Cartography, A. Brodbeck, R. Singer, S. Wulschlaeger
Additions based on air photographs (1963/64)
Mapping and Geography Institute, Addis Ababa.

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Hochgebirge von Semien – Äthiopien Vol. II

Hans Hurni

Klima und Dynamik der Höhenstufung von der letzten Kaltzeit bis zur Gegenwart

(Teil II gemeinsam mit Peter Stähli)
Mit 3 Kartenbeilagen, 55 Figuren und 23 Bildern

Umschlag für Kartenbeilagen *Wrapper for Supplementary Maps*

Karten / Maps

- *Simen Mountains – Ethiopia 1:100'000: Altitudinal Belts of the Last Cold Period (Late Würm)*
 - *Simen Mountains – Ethiopia 1:100'000: Present Day Altitudinal Belts*
 - *Harvesting Areas and Cultivation Belts in and around the Simen Mountains National Park – Ethiopia 1:50'000*
-

Simen Mountains – Ethiopia Vol. II

Hans Hurni

Climate and the Dynamics of Altitudinal Belts from the Last Cold Period to the Present Day

(Part II in Co-authorship with Peter Stähli)
Extended Summaries, Maps, and Figures in English



*Contribution of the Commission on Mountain
Geoecology (International Geographical Union)*

*Institute of Geography, University of Bern 1982
Edts Bruno Messerli and Klaus Aerni*

Harvesting Areas and Cultivation Belts in and around the Simen Mountains National Park – Ethiopia

1:50000

Hans Hurni · Institute of Geography · University of Berne · Switzerland

Source Materials

The topographic situation is a reduction of part of the map "Simen Mountains National Park 1:25000" by P. STÄHLI AND M. ZÜRBUCHEN (1978), field verification by P. Stähli and H. Hurni (1975).

Harvesting areas and cultivation belts have been mapped in the field 1975 – 1977.

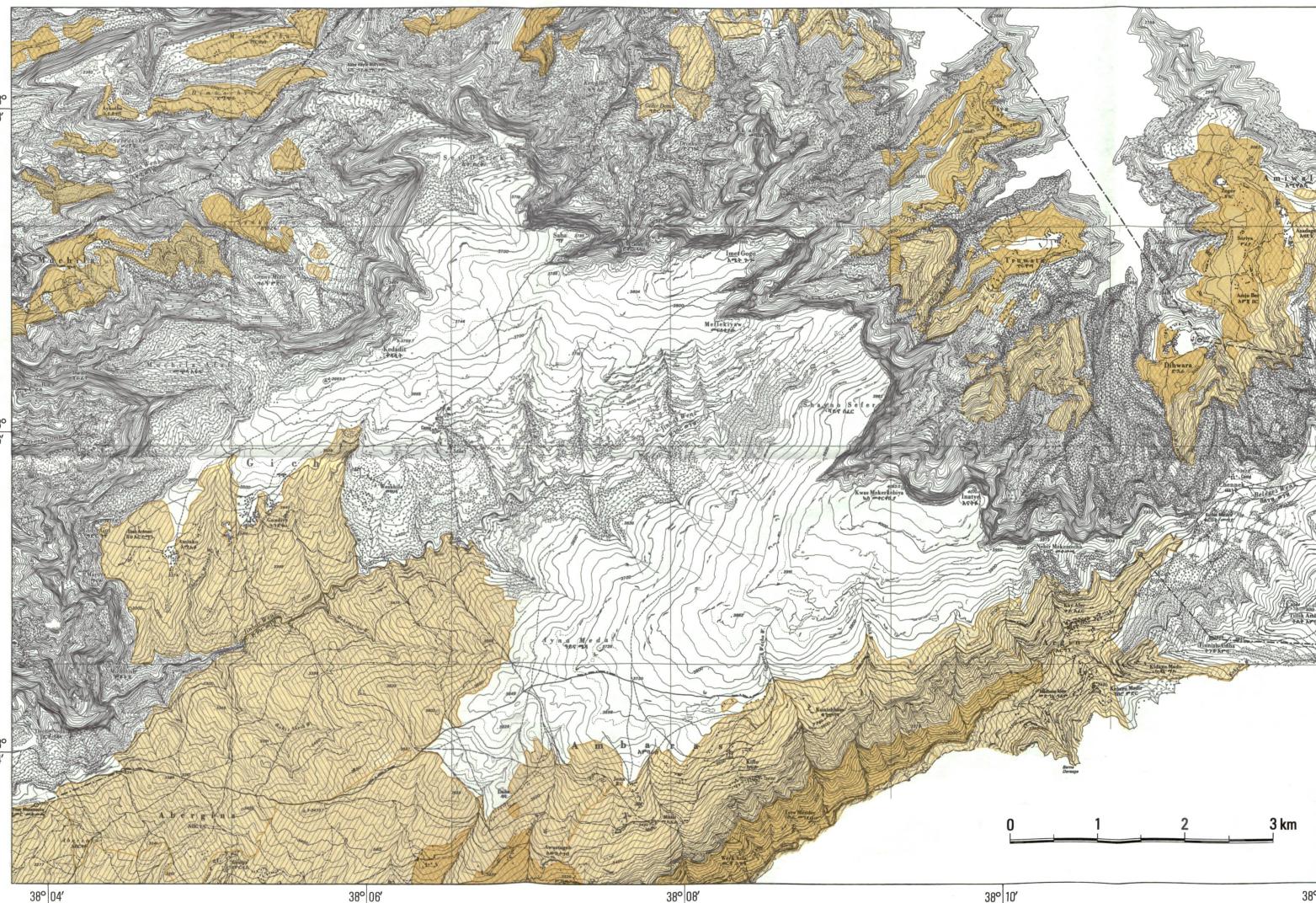
Cartography by A. Brodbeck

Printed by Fa. E. Colloud & Co (Berne)

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Key for Topographic Situation

	Spot height (metres)
	Settlement consisting of tukuls
	Church (Ethiopian-orthodox)
	Mosque
	Major trail
	Local trail



Key for Cultivation Belts

Lower belt with one harvest every year. Cultivation of grains and pulses. Barley, wheat, lentiles, peas, beans, linseed, and below 2200 m, tef and maize. Upper limit of this belt at 2700 – 3400 m, depending on slope aspect. Sometimes in this belt, there are selected areas with several years of fallow.

Upper belt with one harvest every second year, with an intermediate fallow year. Barley cultivation only. Lower limit at 2700 – 3400 m, upper limit at 3500 – 3900 m (maximum 4000 m), mainly depending on slope gradient.

Key for Subdivision of Each Belt into Harvesting Areas 1975 to 1977

	1975 cultivation and harvest in winter 1975/76, then fallow in 1977
	1975 fallow, then cultivation in 1976 and harvest in winter 1976/77
	1975 and 1976 cultivation and harvest in both winters 1975/76 and 1976/77
	Fallow in 1975 and 1976 and no harvest



Simen Mountains Ethiopia

1:100000



Present Day Altitudinal Belts

38° 00'

38° 10'

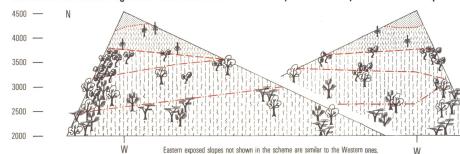
38° 20'

38° 30'

Simen Mountains – Ethiopia: Present Day Altitudinal Belts

Hans Hurni - Institute of Geography · University of Berne · Switzerland

Scheme of the Actual Vegetation Limits and Belts in Simen Dependent on Slope Gradient and Aspect



Key for Map and Scheme

Lower limit of periglacial belt, and upper limit of vegetation with over 50% coverage (altitudinal variations mainly according to slope aspect; see text)

Upper timber line of Ericaceous forests, and climatic limitation of productive barley cultivation (altitudinal variations mainly dependent on slope gradient)

Upper limit of steppe (Bajeraas-Juniperus-Olea trees) (altitudinal variations mainly dependent on slope gradient)

Upper limit of barley (Acacia trees). The upper limit of the agricultural belt of grain and pulses with one harvest per year exceeds 2000 to 400 m higher than the Acacia limit (altitudinal variations mainly dependent on slope aspect)

Differences open on the map are altitudinal (missing evidence, or net visual), based upon the topographical analysis of the field observations.

Additional Key for Scheme

Frost dental belt with free siliquicorn forms

Overgrazed alpine Festuca-Dactylis grassland

Grazed Lotelya (Anemone, Chionanthus)

Relict Erica (Wuchereria and Hypericum (Arnebia) forests

Balley fields (Grass with no forest every second year per field)

Rogosa trees (Cosso)

Juniperus trees (Tid)

Grain and pulses with one harvest per year and field

Relict Acacia trees and forests (Graf)



Key for Topographic Situation

Spot height

District capital

Subdistrict capital

Major settlement (consisting of tukuls)

Mainly orthodox church grave forest

Simen Mountains National Park (proposed boundary)

Subdistrict (Woreda) boundaries of the Simen District

All-weather road

Rough dry-weather road (not wheel driven)

Major trail

Local trail (discontinuous symbol)

net possible for animal

Stream

Contour interval 100 m

Elevations in metres

0 1 2 3 4 5 km

Topographic Source Materials

The map is compiled from the maps ND 37-10 (1:250,000) of the Ministry of Land Reform and Administration, Addis Ababa, "Rock-Silicate Belt of the Simen Mountains" (1:250,000) and Simen Mountains National Park (1:25,000) by Pro Senere Foundation, Zurich, Institute of Geography, Swiss World Wide Fund, Menge, and Ethiopian Forestry and Wealth Authority, Addis Ababa (1978).

Project: H. Hurni and B. Meierli, Institute of Geography, University of Berne, and M. Zehetner, Institute of Photography and Engineering Survey, Berne, Switzerland

Field completion, 1977 (1980)

Design and Field Survey: H. Hurni (1978/1977/1980)

Cartography: A. Brückner, R. Siegrist, S. Wulzinger

Editing: H. Hurni, B. Meierli, A. Brückner

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