

Kilimanjaro and Mount Kenya: Colonized Mountains and their Rediscovery as Symbols of Global Climate Change

The isolated volcanic massifs of Kilimanjaro (5,895 m) and Mount Kenya (5,199 m) rise spectacularly above the tropical East African landscape. The continent's highest mountains were first ascended by European explorers at the end of the 19th century. Both were geographers, and their conquests were seen as symbolic acts of colonial annexation and expansion. Due to the rapid glacier retreat, both mountains have recently become icons in the debate on global climate change.

The two highest mountains on the African continent are about 330 km due north and south of one another. While the north face of Kilimanjaro slopes down

towards the Tanzanian-Kenyan border, the northern foothills of Mount Kenya straddle the equator with its summit positioned approximately 130 km northeast of the Kenyan capital Nairobi. As isolated landmarks both inactive stratovolcanoes tower above the adjoining hills and lowlands located at altitudes between 1,000 and 1,500 m above sea level (a.s.l.), on the eastern side of the Great Rift Valley (*Figure 1*).

Although both mountains are of volcanic origin, their physical appearance differs greatly. The base of Kilimanjaro is approximately 60 km long and 30 km wide at the 2,000 m a.s.l. contour. Its longitudinal transect is oriented from northwest to southeast. All three of its major volcanic cones

are located along this main axis. Only the western and southern rims of the Shira Crater, with Klute Peak (3,962 m) as highest point, remain as a visible remnant of the westernmost cone, whereas on the eastern side the rugged Mawenzi (5,149 m) towers above the Kibo Saddle. The summit region of Kibo forms a caldera approximately 2 by 2.5 km in diameter harbouring two inner craters, the Reusch Crater and the Ash Pit. The highest peaks, among them Uhuru Peak (5,895 m) and several other peaks above 5,700 m, are located along the southern rim of the outer crater (see *Map Insert* to this issue and satellite image of Kilimanjaro; *Photo 1*).

The broad cone-shaped Mount Kenya has an almost circular base



Photos 1, 2, 4b and 5b: M. Nüsser

Photo 1: The summit plateau of Kilimanjaro with the eastern icefield and Reusch Crater; 2 January 2009

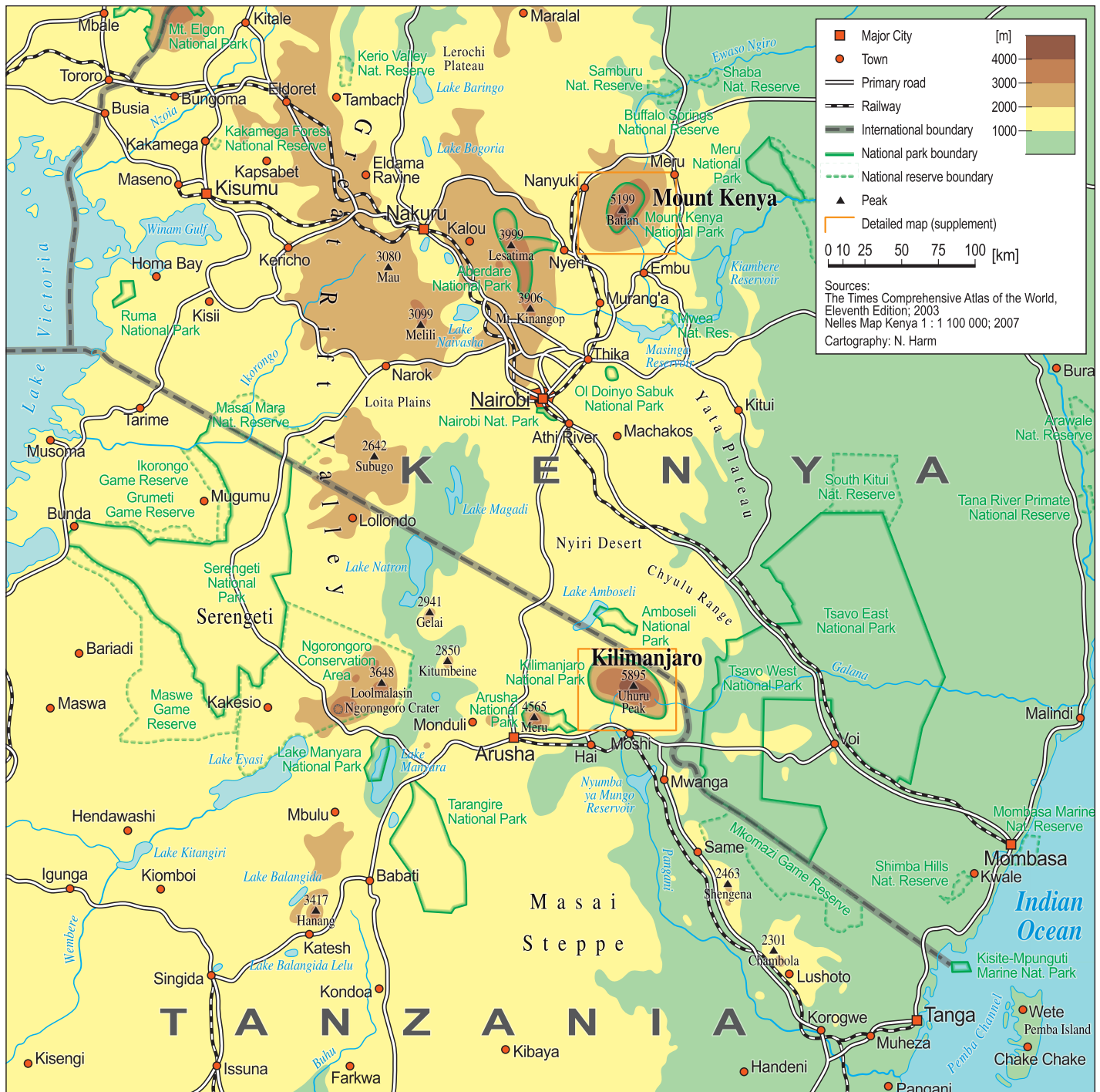


Figure 1: Location of Kilimanjaro and Mount Kenya in East Africa

diameter of a little over 60 km, measured from the 2,000 m a.s.l. contour level. The massif rises gently to the base of the summits Batian (5,199 m) and Nelion (5,189 m), twin rocky peaks which tower steeply above the mountain slopes dissected by characteristic radial U-shaped valleys. The third major peak of the massif, Point Lenana (4,985 m), is located about 1 km to the east of the main summit (see *Map Insert* and satellite image of Mount Kenya; *Photo 2*).

Both mountain massifs have often been referred to as textbook examples to demonstrate the altitudinal zonation of tropical climate and vegetation (e.g., *Hedberg 1964, Winiger 1981, Winiger et al. 1990*). Kilimanjaro and Mount Kenya arise from semi-arid foot zones over distinct forest belts and altotropical grass- and moorlands with typical giant rosette plants to high altitude deserts right above 4,000 m a.s.l. The lower parts of both forest belts are partly reduced

due to the encroachment of cash-crop oriented plantations of coffee, tea and bananas. The shrinking glaciers atop the two highest African mountains belong to the few remaining tropical glaciers in the world.

However these mountains are textbook examples not only in terms of their physical geography but also in terms of their history of geographical exploration and shifting symbolic meaning. The controversy over the existence of



Photo 2: The north face of Mount Kenya with the twin peaks Nelion and Batian, 9 February 2009

glaciers on Kilimanjaro and Mount Kenya that arose following their initial exploration (*Krapf* 1858, *Meyer* 1888, *Honold* 2000) finds itself mirrored in the present day with these glaciers having taken on the role of global climate change indicators (*Thompson et al.* 2002, *Kaser et al.* 2004). The emblematic nature of these massifs is nothing new and is closely intertwined with their role as geographical centre pieces in the colonial expansion of Great Britain and Germany in East Africa.

Exploration and mountaineering history

Early modern discovery of Africa's highest mountains started in the first half of the nineteenth century at a time when the interior of

Africa was still very much an unmapped mystery. European presence was confined mainly to trading enclaves and outposts on the coastline. The German missionaries *Johann Ludwig Krapf* and *Johann Rebmann* were the first "white" explorers to give authentic accounts of the East African hinterlands. Whereas *Rebmann* discovered Kilimanjaro on 11 May 1848, *Krapf* was the second European who beheld the view of Kilimanjaro on 10 November 1849 and the first who spotted Mount Kenya during another expedition on 3 December 1849 (*Krapf* 1858). Their reports on solitary ice-clad mountains caused a dispute in the European geographical community. British geographers, most notably *Desborough Cooley*, vigorously rejected

their accounts of glaciated mountains, arguing for the impossibility of perpetual snow and ice in close proximity to the equator (*Meyer* 1888, p. 7). The controversy was published in several notes in the journal *Petermanns Geographische Mitteilungen* in 1855 and 1856 (*Honold* 2000, p. 534).

It is important to remember that this heated debate took place against the background of an emerging rivalry between Great Britain and Germany which was rooted in their competing interests over spheres of influence in East Africa. In the following decades a number of expeditions to Kilimanjaro and Mount Kenya were carried out in order to clarify the issue and to collect more substantial information. Many were arranged by wealthy aristocrats and private colonial explorers. Based on his journeys in the years 1861 and 1862, Baron *Karl Klaus von der Decken* confirmed the ice cap on Kilimanjaro. The Hungarian explorer Count *Samuel Teleki* and the Austrian officer *Ludwig von Höhnel* were the first to reach an altitude of about 5,300 m on Kilimanjaro and the first to climb Mount Kenya up to around 4,300 m in 1887.

The early European exploratory period of Africa's highest mountains came to pass at the end of the nineteenth century. In the period following the 1884/85 Berlin Conference, which marked the formalization of the 'Scramble for Africa', Great Britain and Germany intensified their colonial endeavours. Germany's sudden emergence as an imperial power in East Africa resulted from the activities of colonial annexation and expansion initiated by *Karl Peters*, the founder of the German East Africa Company in 1885, where land was claimed in the interior, mostly through signed contracts with local chieftains (*Perras* 2004). In the Anglo-German Agreement of 1886, the two countries agreed to acknowledge their spheres of influence in East Africa, and their colonial territories were then divided by a boundary running from a point approximately 100 km



Photo: H. Meyer, taken from: Meyer 1890, Figure 10

Photo 3: The summit of Kibo from the southeast (4,330 m) in 1889



Figure 2: Meyer and Purtscheller at the summit of Kilimanjaro

Source: Meyer 1890, p. 18

south of Mombasa to the eastern and northern slopes of Kilimanjaro and further to the shores of Lake Victoria. Thus the perfectly straight boundary line between the British and German controlled territories was broken by a curve around Kilimanjaro (Demhardt 1997, p. 350).

The first ascent of Kilimanjaro

Against the background of imperial rivalry and competition, the climbing accomplishments by the German geographer, publisher and explorer *Hans Meyer* on Kilimanjaro symbolize the construction of colonial space and occupancy. On his first attempt on the summit of Kibo in 1887, *Meyer* reached an altitude of about 5,450 m (*Meyer* 1888, p. 16). The following year he teamed up with the cartographer *Oscar Baumann*, but their mission was aborted during the Abushiri Revolt when both were taken prisoner by the leader of this anti-colonial insurrection. In the third successive year, *Meyer* started another attempt to scale Kilimanjaro (*Photo 3*) together with the Austrian mountaineer *Ludwig Purtscheller* and their local guide *Yohani Kinyala Lauwo*. Eventually the three of them reached the summit of Kibo on 5 October 1889 and became the first recorded per-

sons to set foot on the highest point in Africa. Their climbing feat was not repeated for twenty years. In order to underline the symbolic act of annexation of Africa's highest point as part of the expanding German empire, *Meyer* named the summit, for which he measured an altitude of 6,010 m, after the German Emperor *Wilhelm II*. The original quotation of his declamation represents a key scene in East African colonial history: "Um 1½ 11 Uhr betrat ich als erster die Mittelspitze. Ich pflanzte auf dem verwetterten Lavagipfel mit dreimaligem, von Herrn Purtscheller kräftig sekundierten 'Hurra' eine kleine, im Rucksack mitgetragene deutsche Flagge auf und rief frohlockend: 'Mit dem Recht des ersten Ersteigers taufe ich diese bisher unbekannte, namenlose Spitze des Kibo, den höchsten Punkt afrikanischer und deutscher Erde: Kaiser-Wilhelm-Spitze'" (*Meyer* 1890, p. 134; *Figure 2*).

The representation of colonial occupation was reinforced by naming a number of peaks and glaciers after German explorers, geographers and statesmen (e.g., Penck Glacier, Ratzel Glacier, Rebmann Glacier, Bismarck Towers). One year after the first successful climb, the Kilimanjaro region became ratified as part of the German colony Tanganyika in the Anglo-German Treaty of 1 July 1890 (the so-called Heligoland-Zanzibar Treaty). In return the Germans abstained from further encroaching into British Kenya. *Hans Meyer's* successful climb became central to the making of colonial geographies. Besides his ground-breaking climbing achievements, he produced outstanding scientific results in the fields of tropical high mountain geography. Apart from the first glaciological observations and altitudinal measurements, *Meyer* collected a large number of botanical and geological specimens. The most notable outcome of his scientific surveys is the map of the Kilimanjaro region and that of the summit environs (*Meyer* 1890). After his successful climb *Meyer* became an influential

advocate of German colonial interests and chaired several colonial commissions (*Volkmann* 2002, pp. 239–241). In 1910 he sponsored a professorship for colonial geography in Berlin and five years later he accepted an appointment as full professor for colonial geography in Leipzig (*Volkmann* 2002, pp. 297 f.).

The first ascent of Mount Kenya

Ten years after *Hans Meyer* climbed Kilimanjaro, the British geographer *Halford Mackinder* set off to climb Mount Kenya, the second-highest peak on the continent. It took three attempts during that expedition before he reached the summit Batian on 13 September 1899 together with the Italian-Swiss guide *César Ollier* and the porter *Joseph Brocherel* (*Mackinder* 1900, p. 473). This first ascent was not repeated for the 30 years before *Eric Shipton* scaled both twin peaks, Batian and Nelion.

Similar to the case of *Meyer's* first ascent of Kilimanjaro, *Mackinder's* motives for climbing Mount Kenya were not only scientific in order to promote geographical research and exploration to fill the blanks on the map but part of a larger geopolitical picture of colonial annexation and expansion (*Blouet* 2004, p. 323). The symbolic dimension of *Mackinder's* Kenya expedition was rooted in the project of establishing British imperial control over the interiors of East Africa (*Ó Tuathail* 1996, p. 76; *Kearns* 1997, p. 455). *Mackinder's* expedition party had the approval of the Foreign Office and was substantially funded by the Royal Geographical Society (RGS; *Kearns* 2009, p. 100). Its scientific goals included a survey and mapping project, a collection of botanical and zoological specimens and a photographic documentation of the mountain region. Like *Hans Meyer* on Kilimanjaro, *Mackinder* took rock samples from the summit as trophies (*Ryan* 1997, p. 127).

Photo: E. Oehler; taken from: Klute 1920, Figure 1

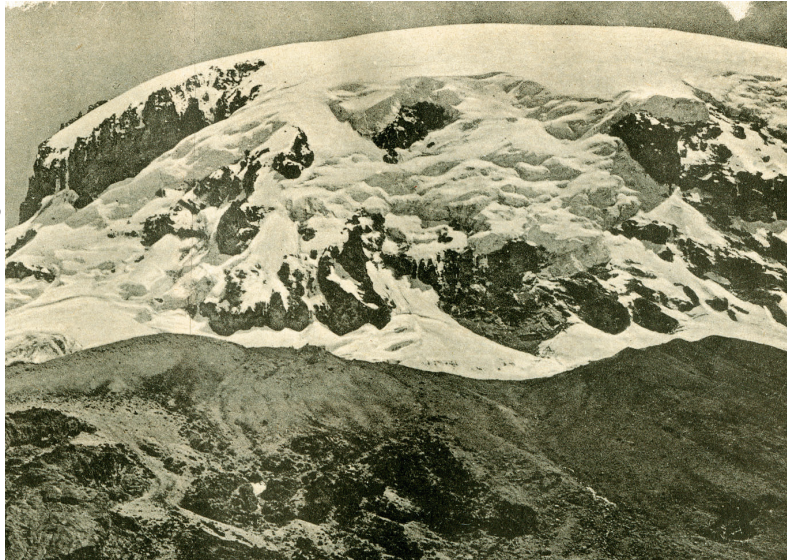


Photo 4a: The summit of Kibo from the south (4,250 m); December 1912



Photo 4b: The summit of Kibo from the south (4,250 m), 31 December 2008

Mackinder scaled Mount Kenya after twelve years of teaching geography at the University of Oxford when he decided that “a spell of freedom was desirable” (*Mackinder* 1991, p. 31). His personal motives were not only led by the wish to be the first white man to summit Africa’s second highest mountain and his own imperial aspirations but by the exploratory foundations of colonial geography at the end of the nineteenth century. In this context *Mackinder* strove to prove himself as an explorer and adventurer in order to get further financial RGS support for continuing his readership at Oxford (*Ryan* 1997, p. 122). Although scientific credibility of his expedition was claimed, reach-

ing the summit was, after all, the main purpose of the expedition, especially after *Hans Meyer* had announced his intention to climb Mount Kenya. The race with the German geographer was part of an imperial rivalry (*Kearns* 2009, p. 100).

After his successful climb *Mackinder* became a prominent imperialist and one of the founding fathers of Geopolitics. In 1904 he published “The Geographical Pivot of History”, the key paper of the so-called heartland theory in which he extended the scope of geopolitical analysis to encompass the entire globe (*Blouet* 2004, *Venier* 2004). In 1903 *Mackinder* left Oxford and became director of the London School of Economics

until 1908 before he was elected to Parliament in 1910 where he concentrated on promoting the cause of imperial unity.

Apart from their common scientific background in geography, *Hans Meyer* and *Halford Mackinder* were imperial subjects and resolute supporters of colonial rule and expansion. Their mountaineering feats were exploited to claim territorial seizure in the name of British and German spheres of influence in East Africa. In this context both mountain ascents were loaded with symbolic meaning of colonial supremacy and pre-eminence. Consequently in the context of decolonization, the summit of Kilimanjaro was re-named Uhuru Peak (Uhuru means ‘Freedom’ in Swahili) as a representative act by *Julius Nyerere* who served as the first president of Tanganyika (which became Tanzania in 1964 after it joined with Zanzibar) after the country’s independence in 1961. Similarly Mount Kenya became a powerful symbol for the anti-colonial enthusiasm which united Kenyans behind their national leader *Jomo Kenyatta* who became the first prime minister and president of Kenya from 1963 until 1978. *Kenyatta* had published his thesis in social anthropology entitled “Facing Mount Kenya” in 1938.

Corresponding to this shift from colonial to anti-colonial symbolic functions of both mountains, there has been a parallel shift in the meaning ascribed to its glaciers as well. Whereas the tropical glaciers of Kilimanjaro and Mount Kenya served as symbols contradicting the prevailing geographical (and literary) imagination of African landscapes at the middle of the 19th century, the contemporary discussion extends the characterisation of these glaciers as anapisms which may disappear anytime.

African icecaps as ‘endangered species’

The 20th century witnessed the evolution of a changing symbolic meaning of Africa’s highest moun-

tains as icons of climate change. The rapidly retreating icecaps of Kilimanjaro and Mount Kenya especially received international attention and became a powerful representation of global warming. While *Hemingway's* prominent "Snows of Kilimanjaro" and the equatorial glaciers of Mount Kenya are steadily vanishing into thin air, a global discourse about glacier retreat and possible measures to save glacier sceneries arose which has been portrayed as the "endangered glacier narrative" (Carey 2007, p. 499).

A first account of glacier recession atop Kilimanjaro was given by Meyer (1890), who mapped several glacial notches on the western crater rim. Since the earliest detailed map showing the glacier extent in 1912 (Klute 1920), Kilimanjaro has lost about 80 % of its ice coverage in the 20th century (Hastenrath and Greischar 1997, p. 455; Thompson et al. 2002, p. 590; Photos 4 a, b). The American glaciologist Lonnie Thompson, who became prominent as a pioneer in alpine ice coring expeditions worldwide, found that the glaciers on Kilimanjaro are about 11,700 years old. He predicts that if climatic conditions of the past decades continue, the remaining ice fields will disappear between 2015 and 2020 which in turn leads to critical water shortage for local populations (Thompson et al. 2002, p. 593).

Whereas Thompson and his co-authors solely attribute the glacier retreat to increased air temperatures as a result of global warming, more recent research has emphasized the importance of changes in moisture-related climate parameters which have contributed to atmospheric drying, reduced cloud cover and increased solar radiation (Kaser et al. 2004, p. 331). According to the investigations by the Innsbruck-based working group of Georg Kaser, the relatively small glaciers of Kilimanjaro do not contribute significantly to the water resources in the surrounding lowlands as most of the glacier ablation goes straight into the atmosphere through subli-



Photo 5a: Upper part of the Lewis Glacier with twin peaks of Nelion (right) and Batian (left); May 1934



Photo 5b: Upper part of the Lewis Glacier with twin peaks of Nelion (right) and Batian (left); 11 February 2009

mation (Mölg et al. 2008, p. 177). Based on climate modeling the plateau glacier atop Kibo will disappear by the mid-21st century (Kaser et al. 2004, p. 337). Even if the general trend of glacier retreat on Kilimanjaro remains undisput-

ed, the demise of "The Snows of Kilimanjaro" will continue to be of great scientific and public concern.

Mount Kenya appears to be the tropical mountain with the most extensive and detailed documentation of ice shrinkage over the last

Photo: K. Wien; taken from: Troll and Wien 1949, Figure 3

century (*Hastenrath* 2005, p. 120; 2008). The earliest map of Mount Kenya's glaciers was presented by *Mackinder* (1900). In 1934 Lewis glacier, the largest glacier of the massif, was mapped by *Troll* and *Wien* (1949) using terrestrial photogrammetry. Together with *Erwin Schneider's* excellent map of the summit group and the glaciers at the scale of 1:10,000 (*Schneider* 1964), a number of valuable baseline surveys were available for the purpose of monitoring glacier retreat. Between 1899 and 2004 the total ice coverage of Mount Kenya has been drastically reduced to approximately 16 %, and eight smaller glaciers have completely disappeared over the last century (*Hastenrath* 2005, p. 122; *Photos* 5 a, b). Unlike the glaciers of Kilimanjaro, those of Mount Kenya are to some extent exposed to direct solar radiation while others are located in shaded positions.

Against the background of the global climate change debate, Africa's highest mountains were rediscovered and their vanishing glaciers became a prominent research object for Western science. In the context of these darkening peaks one can perceive a transformation of glaciers into "scientific laboratories" as part of the "endangered glacier narrative" (*Carey* 2007, p. 520).

Conclusion

Taking into account the diverse perspectives of discovery and rediscovery over the past 120 years, Africa's highest mountains were loaded with different symbolic meanings. The representational functions attributed to the mountains range from the doctrine of imperial conquest and supremacy in the exploratory phase over the hope for freedom and independence during the phase of decolonization in the 1960s to the global icon of "darkening peaks" at the turn of the millennium. Mainly due to their physical appearance and scenery, Kilimanjaro and Mount Kenya have become major destinations for international mountain tourists in the course of

the past decades. The people in the surrounding lowlands, the Kikuyu on Mount Kenya and the Chagga of Kilimanjaro, are mostly perceived as porters or mountain guides. Although Uhuru Peak refers to the people, both mountains often appear as peaks without locals. Throughout this period one can detect a persistent asymmetry between various external actors on the one hand and mostly neglected local people on the other.

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Author

Professor Dr. Marcus Nüsser
South Asia Institute, Department of Geography, University of Heidelberg, Im Neuenheimer Feld 330, 69120 Heidelberg / GERMANY
marcus.nuesser@uni-heidelberg.de