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TOPOI

PROJEKTBERICHT | RESEARCH REPORT

FORSCHERGRUPPE (A-I) CENTRAL PLACES
AND THEIR ENVIRONMENT

**REKONSTRUKTION DER PALÄOUMWELT
UND ANTIKEN LANDSCHAFT VON
DAHSHUR (ÄGYPTEN) MIT IHREN
GRABDENKMÄLERN, HEILIGTÜMERN
UND SIEDLUNGEN**

Research results of the period from
01.09.2009 – 07.05.2012

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Description of research question, approach and results

Research question

How had landscape changed since the beginning of the Old Kingdom in the surrounding of the necropolis of Dahshur?

Research methodology and approach

The Topoi project A-I-17 runs as a geographical supplement to a DFG-funded project of the German Archaeological Institute which funded the archaeological field work, for instance an excavation in the wadi of the Bent Pyramid. The aim of the project is a chronological reconstruction of the ancient landscape of the necropolis of Dahshur with its sanctuaries. The methodological approach includes field methods like the macroscopically description of altogether 42 hand auger sondages, geomorphological mapping and surveying of channel geometry using a differential GPS as well as GIS-based derivation of geomorphometrical parameters on the base of digital elevation models (DEM).

Results

The analysis of terrestrial archives in the surroundings of the necropolis of Dahshur and morphometrical terrain parameters used as proxy data allow conclusions about landscape evolution in the past 5,000 years. Since the creation of the plateau during the mid-Pliocene fluvial erosion has led to the incision of channel beds draining the escarpment. The development of these channel beds started at the edge of the escarpment and grew headwards in an east-west direction. The results of the fieldwork as well as from the fractal analysis give evidence, that natural landscape of the necropolis was transferred to a cultural during the construction phases of its monuments. Depressions located

semicircularly around the Bent Pyramid are identified as quarries. Evidence of mining activities, probably during the Old Kingdom, was also found in the wider vicinity of the Red Pyramid and Bent Pyramid. The analysis of the fractal dimension shows that humans have interfered with the natural relief evolution since the foundation of the necropolis. Vast areas around the necropolis indicate anthropogenic landscape alteration. Low values in the functional relationship between the fractal dimensions of channel networks and topography in the surroundings of the Bent Pyramid point to a mainly direct influence. Quarrying and intentional landscape architecture are major possibilities. However, while the spatial extent of human relief alteration could be identified, conclusions on its type remain mainly speculative. Future archaeological findings and a reliable age model for fluvial deposits may clarify this problem. From the end of the Old Kingdom onwards, it were mainly eolian processes leading to the accumulation of sand sheet in the wadi beds, as results from an archaeological trench in the wadi of the Bent Pyramid reveal.

Discussion of the results in the light of current research

The combination of field methods and the application of the concept of fractal dimension on the base of DEM – data have proven to be a valuable and innovative approach, which helps to identify key areas which are affected by human impact during the construction phase of the monuments.