Hochschule Karlsruhe (HSKA) - University of Applied Sciences
Geomatics Master (MSc.) **Faculty IMM**

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Master Thesis (Year: 2014)
Participatory Development of Tools for Environmental Education in the Area of Kakamega, Kenya

Referees
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Keywords
Environmental education, geodata, Kakamega Forest, participatory development, BIOTA East Africa

Summary
This thesis concentrated on the participatory development of concepts for analogue and digital environmental education tools about Kakamega Forest, Kenya to mainly support local environmental education about Kakamega Forest. The basis for the tools are BIOTA East Africa research findings and already existing environmental education tool ideas which resulted from the BIOTA East Africa project. With the thesis' background in Geomatics, the research findings are mainly geodata which needed to be processed throughout the thesis in order to develop the environmental education tools. In total, eight concepts for environmental education tools have been developed, supporting analogue and digital versions: a jigsaw puzzle to learn about natural forest cover change in the Kakamega–Nandi forests area, a card game about the regulations of local forest uses in Kakamega Forest, flip books highlighting the major threats to Kakamega Forest and possible alternatives as well as touristic tour leaflets to promote ecotourism in Kakamega Forest. By consulting stakeholders during the development process via two workshops with focus groups on each proposed tool (Stakeholder Consultation Workshop and Stakeholder Evaluation Workshop) and testing the developed concepts afterwards in semi-structured interviews with end-users, the local insights in the needs of the proposed tools were integrated in the development process in order to develop locally applicable solutions. The development process for each proposed analogue and each proposed digital environmental education tool was supported by the development of three different prototypes, a demonstration prototype, an intermediate prototype and a pilot-prototype, before finalizing the concepts for production. The thesis used an iterative spiral model, based on Boehm's spiral model in software engineering, to lead through the process of participatory development with the listed prototypes being the result of each iteration. The result of the thesis is a final concept for each proposed analogue and digital environmental education tool. Based on the thesis' results, final print files and digital versions are to be implemented for production, which will be funded by Nature Kenya.

Figure 1: Stakeholders evaluating the analogue intermediate prototype of the card game at the Stakeholder Evaluation Workshop (L. Paul)

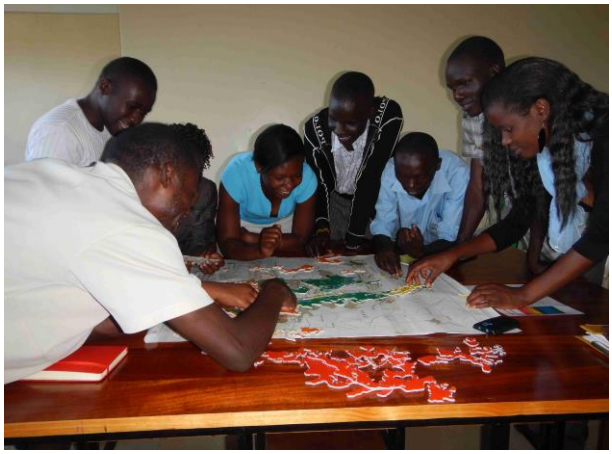

Figure 2: Testing the analogue pilot-prototype of the jigsaw puzzle with university students (R. Joseph)