

The views of a selected mountain user group towards the suitability of a cableway development in the northern Drakensberg range, KwaZulu-Natal province, South Africa.

Gavin Heath, Geography for Educators Department, University of KwaZulu-Natal, South Africa



Introduction:

The study is significant in terms of sustainable tourism development in mountains because proposed cableway developments elicit contestation and strong responses from interested and affected parties across the world, including around the discourse employed (Adkins et al. 2004), and some research shows that cableways are not the promised economic El Dorado’s of mountain tourism development some advocates make them out to be (for e.g., Brida et al. 2014).

There have been a number of cableway proposals for differing locations in the KwaZulu-Natal Drakensberg over the last 40 years but nothing has progressed beyond feasibility studies. However, in May 2012 a Member of the Executive Committee for the Province of KwaZulu-Natal announced a plan to build a cableway in a little-known and isolated KwaZulu-Natal Drakensberg valley.

This particular cableway proposal abuts a World Heritage Site, which the Ukhahlamba-Drakensberg Park currently is. In addition there is current policy precluding the development of cableways in the buffer zone of the World Heritage Site in question (for e.g. TRPC 2001).



Research methodology: The research instrument posed ten questions concerning the appropriateness and suitability of a cableway system situated between the lower stations situated in the Busingatha valley and the upper station situated on Mount Amery (northern KwaZulu-Natal Drakensberg). The questionnaire and research process went through a comprehensive ethics approval process. Two email appeals were sent to members of the concerned mountain user group and a total of 45 completed questionnaires were returned. As the total number of email subscribers (either valid or not) of the user group is 408 (as of September 2015), this equates to canvassing the views of 11% of the subscribers.



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- 1. A majority of respondents have postgraduate qualifications with a significant number (40%) holding advanced research degrees.
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Results: Views towards proposed development

The vast majority (91%) view the area as unsuitable for a cableway with four (9%) either for or unsure of the suitability of the project. The six most frequent responses in defence of their views were that:

- 1) an unlikely and unsustainable number of tourists are going to visit,
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35 (78%) out of 45 respondents regard that the weather will curtail the operating of the cableway a significant amount of time (+26%). The vast majority of respondents are seasoned cableway-users. The five most frequent responses (in terms of factors that would militate against the successful operation of the cableway) were the following:

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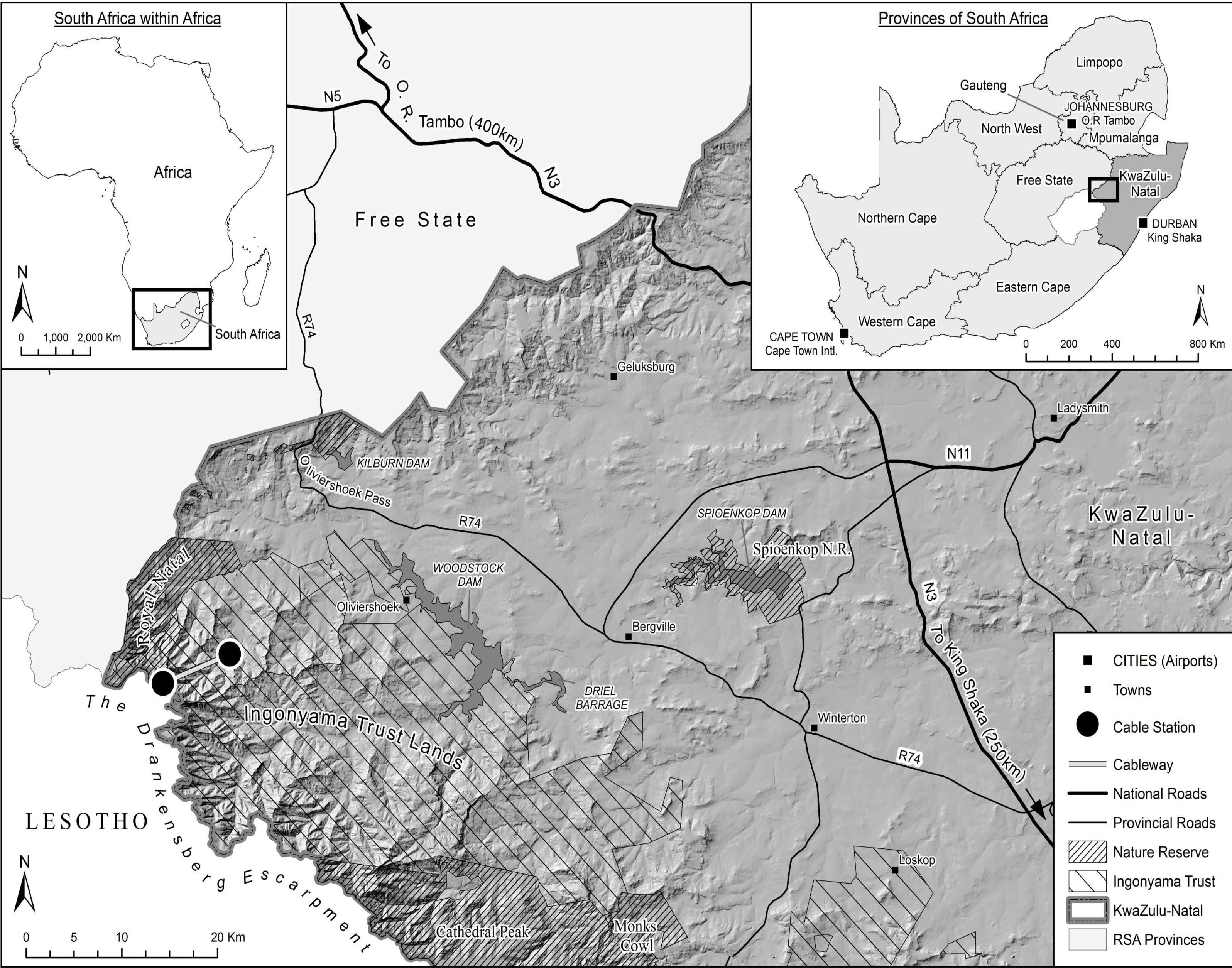
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A very significant percentage (44%) of respondents have been involved in drafting policy or contributed towards conservation/ development matters in the Drakensberg area. The three most significant responses (in terms of threats to the World Heritage Status of the area) include the fact that:

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93% of respondents view the project as not worth continuing with the majority (53%) seeing the proposed development as a “white elephant” in the making.



Conclusion: An analysis of the questionnaires has indicated that the respondents are well educated and that a significant number of them have experience of cableways. A prominent number of respondents have been involved in policy making for the KwaZulu-Natal Drakensberg. It is clear that there are too many issues, chiefly economic, environmental and statutory/ political, impinging on this development. An overwhelming majority of the respondents see these issues as militating against the successful operation of the proposed cableway. There is also potential for these issues to form a socio-economic and political imbroglio.

Catchment and river management in graduate teacher education: a case study of student teacher learning and teaching in the Upper uThukela valley, KwaZulu-Natal. Heath, Gavin Edward

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Poster Abstract:

An encapsulation of the key findings derived from PhD research on the pedagogy of catchment and river management in a prominent Drakensberg valley, South Africa. Following an extensive literature review, it was found that there was a need for the development of knowledge and pedagogy for the teaching of catchment and river management (CRM) in Geography Teacher Education. CRM is referenced with, and for, new environmental knowledge, social-ecological system thinking, sustainability competencies and pedagogy. It was found that an integration of all of these factors are essential if teachers are to be adequately prepared for teaching CRM within a wider integrated water resource management (IWRM) framework that takes full account of the nature and complexity of catchment and river basin management in South Africa. Data were generated by an analysis of school curricula, lectures that were given to the students on CRM, and student fieldwork. The importance of the systemic nature and complexity of CRM has become more and more apparent due to the prevalence of longer and more critical droughts across the country, and this was also borne out by the long term PhD research.

Curriculum requirements for catchment and river management (Grade 12, 3 hours, under Geomorphology):

“...the importance of managing drainage basins and catchment areas; the impact of people on drainage basins and catchment areas; and a case study of one catchment area management strategy in South Africa” (Department of Basic Education, 2011, p. 43).

Methodology:

Phase one:

The three different curricula between 1994 and 2019 were analyzed in respect of catchment and river management requirements, and new environmental knowledge.

Phase two: The series of lectures was researched, using student questionnaires following each lecture. Lectures were given on (1) Introduction to catchment and river management (2) Catchment and river management models (3) Participatory integrated water management (4) Catchment management strategies (5) Drakensberg as source of water (6) Fieldwork (7) Socio-ecological system thinking and sustainability competences.

Phase three: The student fieldwork was researched, using lesson plans, lesson assessment forms, reflective reports and photographs/ videos.

Findings:

School curricula:

Not one catchment management strategy is operational in South Africa, and only two catchment management agencies in operation (Meissner et al. 2017) ; yet the requirements are in the curriculum.

Fieldwork needs resources and teaching aids that all three schools did not have, yet it is extensively described in the curriculum.

Three different curricula in operation in 25 years, with catchment and river management only been given enough attention in the latest curriculum.

Lectures on catchment and river management:

It appears from the student record that students were enthusiastic receivers of information and learning during the lectures.

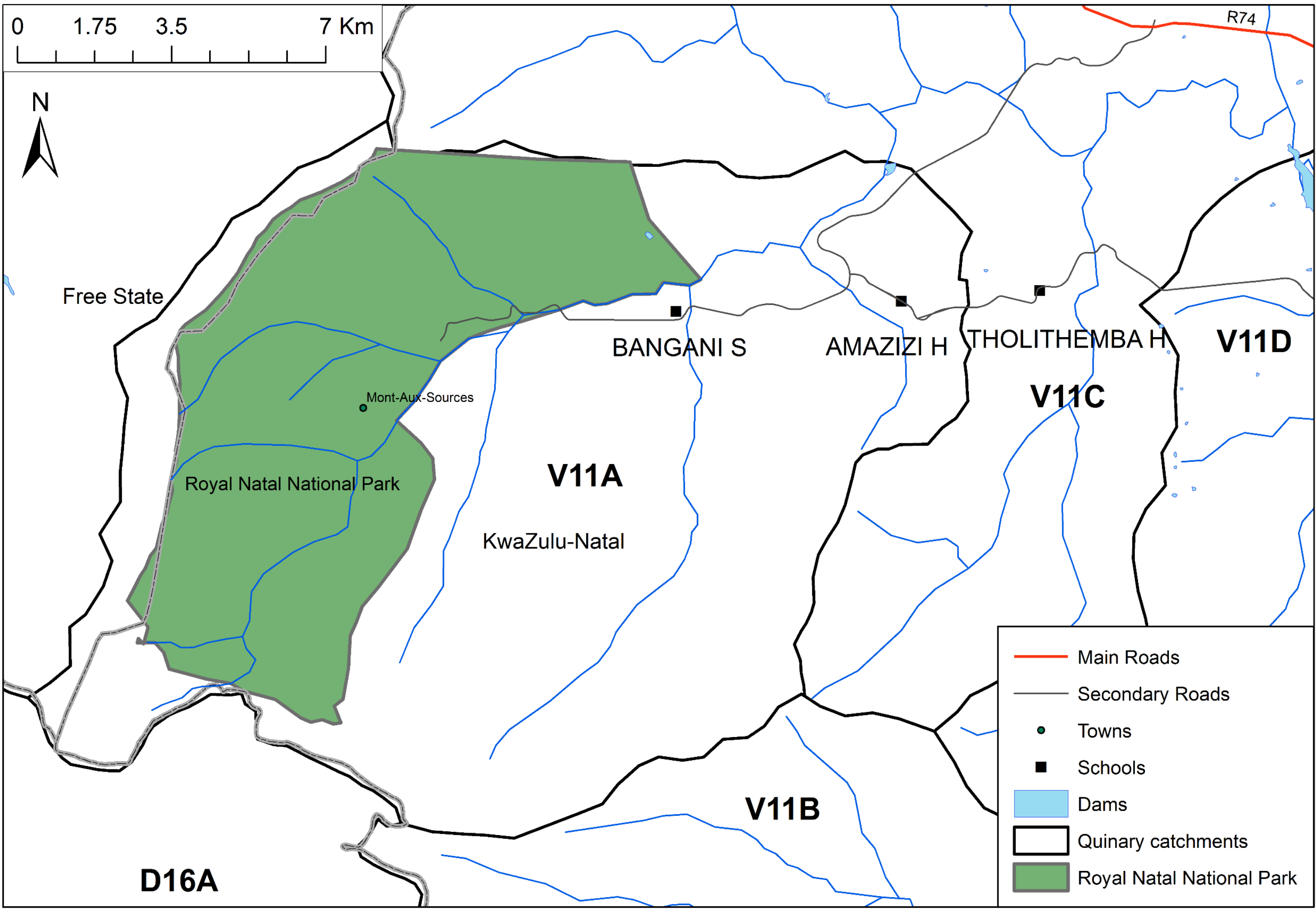
Graduates did not have enough exposure to fieldwork, systems thinking during their degrees.

Conclusion. This long-term PhD project showed that despite the promise and ideals implicit in the South African school curriculum, there are major obstacles to realising the curriculum in poor and deep rural areas in South Africa. Chief amongst them is the scientific training and career preparedness of the student teachers responsible for realising the promise and ideals of the curriculum.

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Picture on left: Sand mining occurring about 500m from Amazizi High School. This is approximately six kilometres from the border of a protected area. **Picture on right:** School pupils and their student teacher busy ascertaining the health of the uThukela river about 500m from the border of a protected area. Despite the proximity, the river’s health was adjudged poor.



Student Fieldwork

The V11A quinary catchment was proven as an ideal learning environment for fieldwork activities and for sustainability competence development, much more so than V11C..

A catchment basin typifies “the problems of practice” and furthermore has great capacity for “innovative learning environments” (Pipere et al., 2015, p. 9).

It has been shown that there was an issue with the mis- conceptualisation of geographical terms and processes on the part of the student teachers during phases 2 and 3 of the research. To properly understand social ecological systems thinking in the planning and presentation of lessons, there cannot be inherent scientific mis- conceptualisation, the misuse of scientific or disciplinary terminology, the use of inappropriate scale, and confusion over geographic distribution or continuity.

It has been shown that the wider dysfunction of rural KwaZulu-Natal schools impacted on fieldwork.

It was shown that students need resources including maps, libraries and Wi-Fi access for proper fieldwork, and catchment and river management- based teaching practice.

In terms of the actual lessons, it appeared that “boys (were) disinterested in fieldwork”, and that there was low attendance in the fieldwork sessions.

Student sketch maps lacked an appreciation of the real terrain around the three schools.

With respect to sustainability competences (Wiek et al., 2011), normative and interpersonal competences were well developed in students’ lessons; strategic, systems and anticipatory competences far less so.

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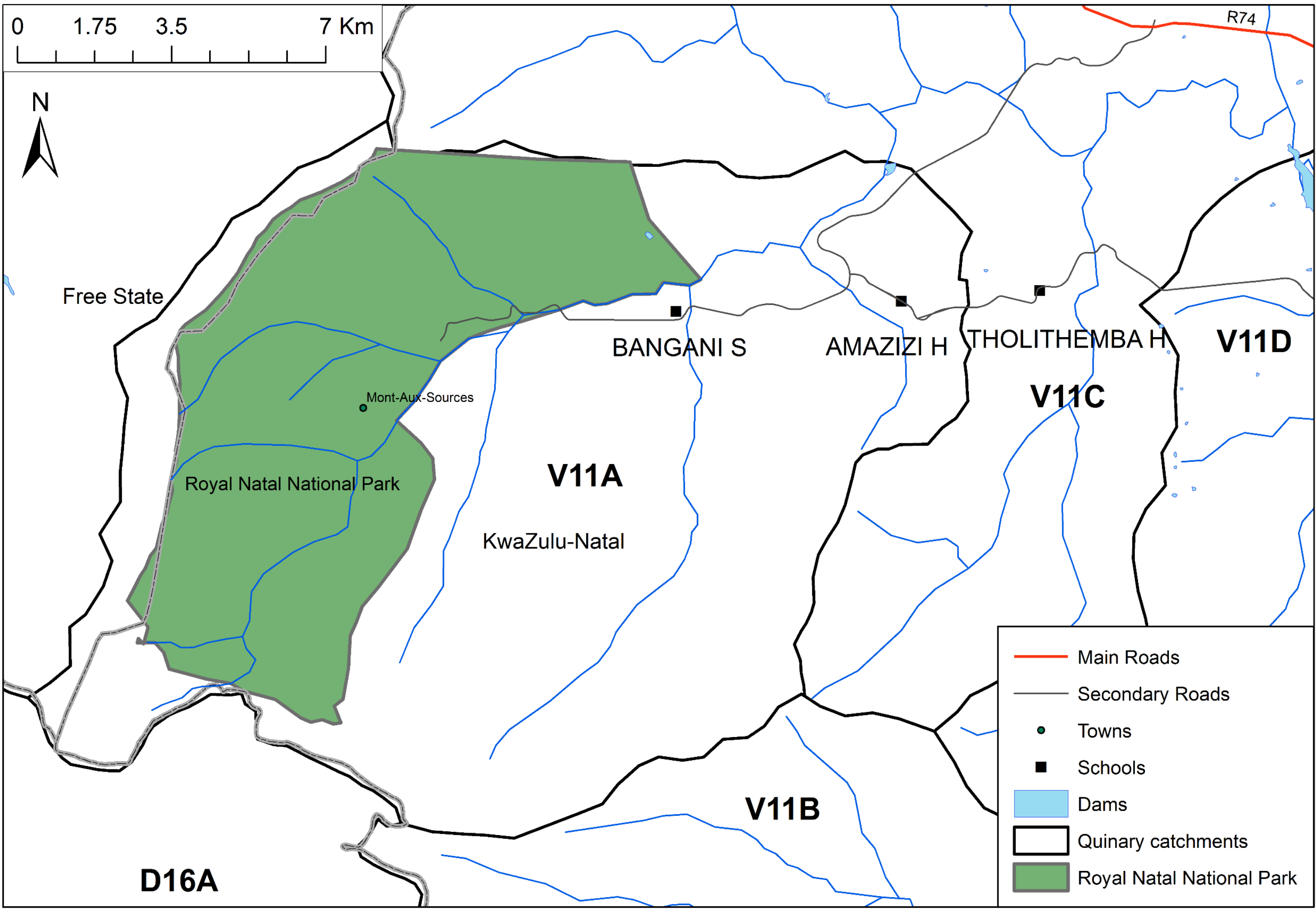
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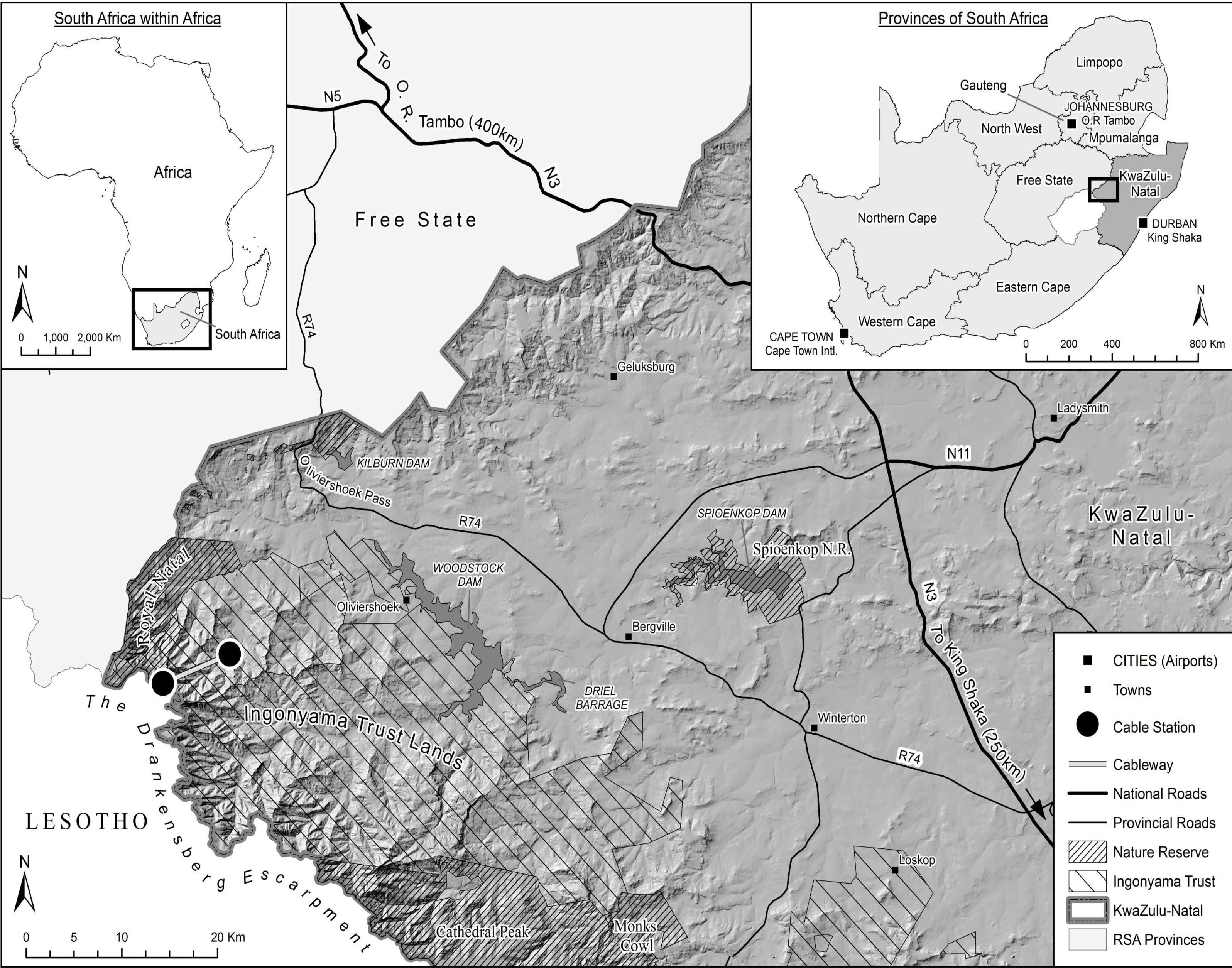
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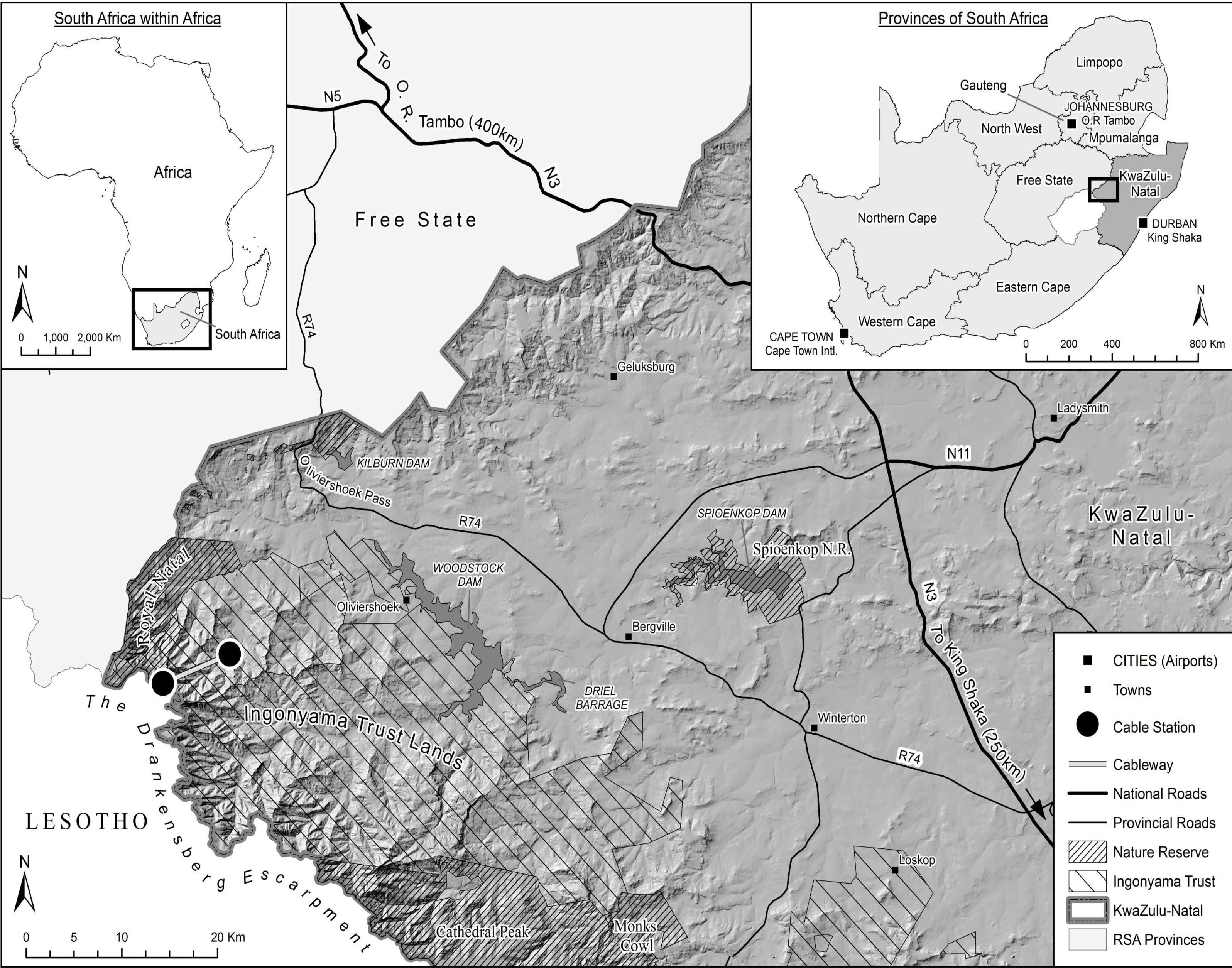
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Workshop & Poster

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Keywords: Environmental Education, Catchment and River Basin Management (CRM), School Curriculum Analysis, Senior High School Geography Content

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Workshop Abstract:

This study involved the successive clarification of the pedagogical content knowledge (PCK) and fieldwork teaching practices for catchment and river management (CRM) in Geography Teacher Education. The research was developed as a exploratory study teaching Postgraduate Certificate of Education (PGCE) students at the University of KwaZulu-Natal where I teach Geography Education to teachers-in-training. The study unfolded as three phases which provided the developing process for clarifying a pedagogical landscape for CRM in the Geography curriculum. The study developed through an analysis of content knowledge in the existing curriculum (phase 1), to lecture delivery and the opening up of PCK (phase 2), to an analysis of student pedagogical engagement with the topic on teaching practice (phase 3). Data were generated via the teaching and learning interactions in this three-phase progression that included reflection with student teachers involved in the teacher education programme. The analysis covered new environmental knowledge, social-ecological systems, sustainability competencies and pedagogy, all of which are essential reflexive contexts for the research process towards the development of a progressive, sustainability-oriented process of teacher education. This nexus of concerns (PCK, systems thinking and sustainability practices) is necessary for the effective teaching of CRM within a contemporary social-ecological-systems (SES) and complexity science perspective, which is characterising integrated water management systems in South Africa and globally. The research developed as an investigative study that was undertaken to contribute new knowledge for teacher education practice in higher education in South Africa. Here the intension was to progressively explore the alignment of curriculum content knowledge, teaching practices and sustainability concerns in Geography Education.

- In your presentation, please include answers to the following questions raised in the abstract.
- Question 1: What are concrete opportunities and challenges in teaching and learning about mountains and sustainable mountain development?
- Question 2: What experiences from the development and organization of SMD education programs can be generalized beyond their specific contexts? What coordination mechanisms exist or could be developed?
- Question 3: How can outputs and knowledge from SMD practice be incorporated into SMD curricula and leaning opportunities?