

Ethiopia: Nigel Cutland, University of York, UK, and Habtu Zegeye, Bahir Dar University, Ethiopia

Bahir Dar University: recently amalgamated (2000) from Teachers' College and Polytechnic.

Mathematics Department (in the Faculty of Education): 35+ staff: 2 with PhD, 2 more about to graduate; majority of the rest with MSc, some only BSc. Programmes: BSc, MSc (Pure Mathematics); would like to launch a PhD programme.

Contact: Dr Habtu Zegeye, very active in research, many publications (functional analysis and fixed-point theory), works hard to promote research in the department, runs seminars and "research group". A very enthusiastic and friendly department.

Requests to MARM include research collaboration, an advanced short course, long-term assistance with graduate education and mentoring a research group.



Bahir Dar University



Lecturing to staff



Taking a break in the December sun

First visit of mentor, 4 – 12 Dec 2008

- 10 sessions with entire staff
- 8 lectures on non-standard analysis, Loeb spaces, applications in functional analysis
- 1 session: Dr Zegeye spoke about research in the Department (all under his leadership/supervision)

- 1 open session for discussion, questions, sharing experience and giving encouragement
- 1 day spent 1-1 with Habtu, talking about his research and ideas for interaction, collaboration and encouraging research in the Department

Issues and Problems identified

Resources

- Library – minimal, many texts photocopied
- Internet – very poor
- Time – 12 hours + teaching load
- Research leadership – only 1 research active and self-generating, narrow field

Aspirations

- launching an MPhil/PhD programme in order to upgrade staff from MSc/PhD based on programme at Addis Ababa, requires taught postgraduate courses, but no manpower;
- would like a “sandwich” PhD with students coming to York for courses
- widening the focus of research

The mentor visited Bahir Dar over the period 3-12 December 2008. While there, a specific research topic was identified, namely applications of nonstandard analysis in fixed point theory. Cutland delivered 8 lectures on nonstandard analysis, Loeb spaces, and applications in functional analysis to the entire staff, while Dr Zegeye – the key staff member involved in the mentoring programme – gave a general talk about research activity in the department..

A return visit followed when Dr Zageye visited York for one week in August 2009, timed to coincide with the international conference “Logic and Mathematics 09” being held in York. This gave Dr Zegeye the opportunity to hear of current work in nonstandard analysis and related problems, to meet leaders in the field, and to make personal contact. There was also an opportunity for further discussion with the mentor.

Further visits ensued, which included: a second visit by the mentor to Bahir Dar in 2010; Dr Tadesse (Bahir Dar) attended the ICM in Hyderabad in 2010 with support from MARM funds; Dr Awoke Andargie, member of staff at BDU, attended and gave an invited paper at the Sixth International Conference on Dynamic Systems in Atlanta USA in 2011. MARM funds were used to support his attendance. Dr Seyfe Belete, a member of staff at BDU, attended the First Kenyatta University International Mathematics Conference (with encouragement from the MARM Board) and met Dr David Stern, Lecturer at Maseno University, Kenya. Dr Stern expressed an interest in linking with BDU in a mentoring capacity. On his return to Bahir Dar, Seyfe Belete shared his experiences with his mathematical colleagues.

In 2011, Dr Stern visited BDU, in essence continuing where Prof Cutland had left off in terms of encouraging research activity and developing a research culture in the BDU mathematics department. Dr Stern shared his research interests and met with members of staff individually, and discussed generally what could be achieved through his linking with BDU using the remaining MARM funds assigned to that project. He also gave a lecture on an area of common interest. Dr Tadesse reports that "higher officials of the university liked his [David's] idea of strengthening research in BDU"

Mr Mebratu Fenta, member of staff at BDU commenced PhD studies at the University of Cape Town. MARM funds were used (after approval from the MARM Board) to provide partial support for travel to Cape Town. He has signed a legal contract obliging him to return to Bahir Dar at the end of his studies and work for the university for 6 years.