

# SEDEC NEWSLETTER

## JUNE 2009

SEDEC, short for disentangling the **S**ocial and **E**cological **D**rivers of **E**cosystem **C**hange in Lake Victoria, is an integrated research program that started one year ago. The basic idea is that added to and in concert with fishing pressure, eutrophication could also pose a threat to the resource base and livelihoods of the people around Lake Victoria. Four PhD students carry out the study: Modesta Medard studies social factors that drive decision-making processes of fishers; Happy Peter analyses ecological factors that drive spatial effort allocation by fishers; Ilse Cornelissen works on the impact of eutrophication and Nile perch predation on food web structure; and Andrea Downing models the interactions and feedbacks resulting from eutrophication and fishery, as most likely factors driving changes in Lake Victoria's food web. Modesta, Happy and Ilse are now based in Mwanza, working at the TAFIRI, where they were visited by Andrea and their supervisors Leo Nagelkerke, Paul van Zwieten and Koos Vijverberg.

### Getting started

Starting up a research program in a place far from the mother University tends to be slower than you like, more laborious than you expected, and in more general terms, full of surprises. When Paul and I went to Mwanza at the end of May we were pleasantly surprised by the fact that Andrea, Happy, Ilse, and Modesta all four were there, so we could go through the ins and outs of the project in detail. This was essential, because trying to perform a project with four very different PhD students, with a variety of skills and outspoken characters is a challenge! We had some good discussions and I think we also made some good decisions about the daily organization of the project. Another surprise worth mentioning was that we could keep haplochromines alive fairly easily, although they were damaged by gillnets. Deciding what species they were proved to be a much more difficult task, in fact we did not succeed and decided to settle for general trophic groups as the lowest taxonomic level. The last surprise was that we managed to find some fresh Nile Perch from the market that had nicely filled stomachs, but all with haplochromines and daga! What about the *Caridina* shrimp story from the project proposal? The project already seems to be producing unexpected results even before it really took off. And the fact that it didn't take off yet is something that makes me even more restless than I generally am. I want things to really start now! Let the cargo come please (I actually was postponing writing this until I would get the confirmation: "Yes the cargo is here and we can use it!"). Let's get our hands dirty and if we're not sure what to do because of contradictory information by different experts, let's try it out ourselves. Thinking is good, planning is excellent, but nothing beats the actual work in the field or lab.



**Leo Nagelkerke**  
Supervisor of Ilse  
and Happy



### Ilse Cornelissen

analyses the impact of eutrophication and Nile perch predation on food web structure

### Waiting for the Cargo...

Since my arrival in Mwanza in April progress has been going fast on the one hand and slow on the other. Preparing ponds and tanks for the food web experiments went fast: ponds were split up to have plenty for replication and TAFIRI tanks were repaired as they had a lot of holes. All mesocosms are now ready to use.

Progress on the equipment shipping from Holland has been and is ongoingly slow, which is crucial for analyzing samples from experiments and field-work. Waiting for an exemption to avoid import tax took more than three months and in the end it was not possible to get it. Now the equipment has been sent from Holland but has not yet arrived. The expression: 'Sorry, I don't have it, it is in the cargo' has become a recurring joke.

In the meantime our supervisors Paul and Leo came by to check up our progress and to help us out. Time planning of work to be done and meetings were organized to smoothen our progress and work. Brainstorming about potential Master student subjects resulted in 15 subjects of which some already have been applied for by students!

Koos, my other supervisor, has also arrived and we are setting up a simple incubation experiment with zooplankton and *Caridina* shrimps. At night, we check out the local fried chickens on street corners.

And last but not least: the car and the hydro probe have arrived! I have exchanged my driving license so right now I am putting the pedal to the metal, making the roads of Mwanza less safe! I guess my walking days to TAFIRI are over. I am now busy testing the probe and figuring out how the different softwares work, and of course I am still waiting for the cargo...



### Where do we go?

The process of selecting sites for my and Happy's research has been the longest I have ever been involved in. It started in the Netherlands when Happy and I had to set a number of selection criteria on which to base our site choice. It turns out we both need each site to cover quite a few criteria: it has to be suitable for a socio-economic study as well as ecologically relevant to our project. To top it off, we must also have easy access to these sites in all seasons. Once Happy and I had finally made our criteria selection and circled off a few potentially-suitable areas on the map, Ilse came along and added her thoughts and a new list of criteria: since Ilse and Happy's projects are in many ways complementary and that they are sharing equipment, their study sites should relate to each other.

The trade-off of this multi-disciplinary approach to studying the lake is that to suit each topic and perspective we effectively narrow-down our research area. How will it be possible for our studies to represent the entire lake? There is a big demand from all three countries that the SEDEC project should represent "the bigger picture". So now we have found specific sites of interest, to best satisfy national and regional stakeholders we must find the best way of extrapolating our findings to a larger scale. This can only be done through identifying the processes that underlie all the observations we make in our respective fields, and then disentangling them... but wait: that's the title of the project, we must be on the right track!



**Modesta Medard**, is studying the social factors that drive decision-making processes of individuals in the fishery



### Andrea Downing

PhD4, is modelling the effects of fishing and eutrophication and their interactions on the food web.

### First visit

It was getting a bit lonely in the Netherlands since all my colleagues had abandoned me and gone to Mwanza, so I decided to hunt them down. I was warmly welcomed by the TAFIRI scientists as well as by their Ugandan counterparts in NAFIRRI and at the Lake Victoria Fisheries Organization (LVFO) in Jinja. I met very knowledgeable scientists and not only learned about how and which survey data is collected and compiled from all three countries, but was also so fortunate as to actually be given quite a lot of that data: many interesting and productive collaborations lie ahead!

It was nice seeing Ilse, Modesta and Happy in their new workplace, we re-organised some of the planned teamwork and came up with new group projects and ideas. Seeing the facilities with ones' own eyes really helped assess the feasibility of our plans. It all turned out a bit scary as well as motivating: we have a lot of work ahead, and there is so much to learn. On the other hand, there is absolutely no chance of any of us getting bored any time soon!

My short month in Africa was time well spent: I probably learned as much about Lake Victoria in one month there as I had in one year reading about it. Seeing the lake, going through the hidden reports and theses and talking to different Lake Victoria specialists made the whole SEDEC project a lot more tangible. Obviously, tasting the lake's different fish also proved very inspirational and I made great progress in my food web models. I look forward to going back next year!

SEDEC, Exploitation and Eutrophication as threats to fisheries? Disentangling the **S**ocial and **E**cological **D**rivers of **E**cosystem **C**hange in Lake Victoria, Tanzania, is an integrated research program carried out by the Aquaculture and Fisheries, Aquatic Ecology and Water Quality Management and Law and Governance groups of Wageningen University; The Netherlands Institute for Ecological Research and the Tanzanian Fisheries Research Institute. It is funded by the WOTRO/NWO integrated program fund. Information on the project and contributions to the newsletter [paul.vanzwieten@wur.nl](mailto:paul.vanzwieten@wur.nl); [andrea.downing@wur.nl](mailto:andrea.downing@wur.nl). Website: [http://www.afi.wur.nl/UK/Research/Projects\\_SEDEC/](http://www.afi.wur.nl/UK/Research/Projects_SEDEC/)