

Pesticide Risk Reduction Programme – Ethiopia (PRRP)

PhD project on environmental risks

Goal of PhD project

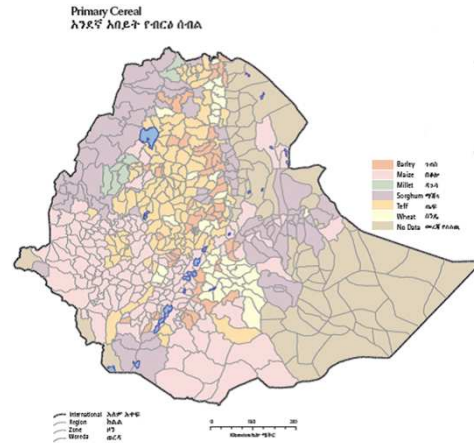
PhD project is part of Work package D: “Sustainability of the developed systems”, in which capacity building towards development of technical and scientific platform is undertaken.

- Goal is to carry out Aquatic Ecological Risk Assessment of Pesticides in Ethiopia.

PhD student, with the help of PhD supervisors and co supervisors

Approach and activities

- Preliminary risk assessment will be done and biological and chemical monitoring will follow
 - The application of GIS techniques and the PRIMET model to identify areas likely to be exposed
 - The use of passive sampler techniques to assess pesticide exposure in a river
 - Lab analytical verification to measure residue levels and type of pesticide contamination in surface waters
 - Sampling and identification of invertebrate and fish species to assess the effects
 - Multiple stressors of the sampled rivers will be identified
 - Relevant traits of the identified species will be determined to allow a traits-based evaluation approach
 - Multivariate analysis of the monitoring data
 - Performing laboratory toxicity tests with local species to determine their acute sensitivity towards relevant pesticides
- Laboratory and field work to start in April 2012



Data source: Ethiopian Agricultural Sample Enumeration 2001/02, Central Statistical Agency.

Crops grown in Ethiopia

Results so far

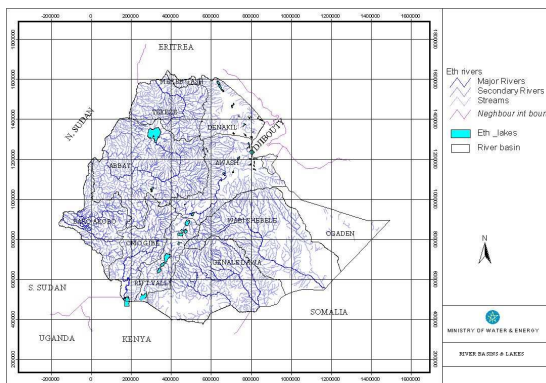
- Literature review and development of concept note
- Identification of possible research locations
- Collection of secondary data and preparation of a report on inventory of agro-environmental characteristics and existing environmental standards in Ethiopia
- Supporting courses being taken

Expected impact

- Identification of areas vulnerable to pesticides
- Established multiple stressor and trait data
- Pesticide residue levels and their risks
- Determination of LC50 of the most vulnerable species to be used for future reference
- Identification of the species most vulnerable to pesticide contamination

Cooperation

- Alterra and Wageningen University (Paul van den Brink)
- APHRD (Tsehay Azage)
- Addis Ababa University (Negussie Retta)
- PhD student (Berhan Mellese Teklu)



River systems in Ethiopia



Towards a sustainable use of pesticides in Africa