

# dr. ir. Raf Aerts

°7 January 1975, Wilrijk (Belgium)

## *Home address*

Abdijstraat 16 • BE-3001 Leuven • Belgium  
Living together with Ms. Eva November



## *Work address*

Division Forest, Nature and Landscape, K.U.Leuven  
Celestijnenlaan 200E-2411 • BE-3001 Leuven • Belgium

*Phone* +32-16-329721 • *Mobile* +32-479-527731

*E-mail* raf.aerts@ees.kuleuven.be

*Web network* nature.com/profile/rafaerts

---

## CURRENT POSITION

---

KATHOLIEKE UNIVERSITEIT LEUVEN – Leuven, Belgium 10/2008 to 09/2011  
Division Forest, Nature and Landscape  
**Post-doctoral Fellow of the Research Foundation –  
Flanders (FWO)**

### *Current research activity*

Forest fragmentation is affecting pollination and seed dispersal of Wild coffee (*Coffea arabica* L.) in southern Ethiopia, limiting gene flow between isolated coffee populations and causing loss of alleles due to genetic drift. The introduction of remote land races into the fragments furthermore threatens the genetic diversity of Wild coffee due to the potential effects of introgression and outbreeding. Aiming to support in situ conservation of the genetic diversity of Wild coffee, we look for evidence of genetic erosion and reduced productivity of Wild coffee, and identify processes at the landscape scale that can be related to genetic to these processes. Field work is carried out near Jimma, Oromia Regional State, 280 km southwest of Addis Ababa, in collaboration with Jimma University and the Environmental Health and Ecology project of the IUC-JU program.

### *Current academic tasks*

Co-promotor of 2 Ph.D. students

- Haile Yineger (promoter Luc Lens, UGent, VLIR-IUC, 2009-2013)
- Gezahegn Berecha (promoter Olivier Honnay, K.U.Leuven, VLIR-IUC, 2009-2013)

Advisor (assessor) of 2 Ph.D. students

- Hans Verboven (promoter Martin Hermy, K.U.Leuven, IWT, 2009-2013), "Pollen limitation and reproductive success of plants in urban environments"
- Abrham Abiyu (promoter Georg Gratzer, BOKU Vienna, BOKU, 2009-2013)

Co-promotor of 1 M.Sc. student (bio-engineering) and advisor of 1 M.Sc. student (biology)

Guest lecturer Forestry, Advanced Ecology, Terrestrial Ecology

Team member VLIR IUC projects in Mekelle (MU-IUC) and Jimma (JU-IUC), FWO project Kenya (Taita Hills)

---

## WORK EXPERIENCE

---

KATHOLIEKE UNIVERSITEIT LEUVEN – Leuven, Belgium 10/2006 to 09/2008  
 Division Forest, Nature and Landscape  
**Post-doctoral Fellow of the K.U.Leuven Research Fund**

As a postdoctoral research fellow of the Research Fund K.U.Leuven (2 × 1 year), I was responsible for the scientific valorization of my doctoral research and new research in Ethiopia and Kenya in the form of peer-reviewed publications and publications for the broader audience. My other tasks included securing research funds, networking, teaching and supporting five Belgian graduate staff members, five Ethiopian graduate candidates, and several undergraduate students (B.Sc. and M.Sc.) at the Division Forest, Nature and Landscape (K.U.Leuven) and at Mekelle and Jimma Universities (Ethiopia).

My main thematic areas during this mandate were forest plant communities and indicators for sustainable forest management, sustainability of biodiesel production and forest restoration.

I was an active member in the ongoing VLIR Institutional University Cooperation (IUC) project in Mekelle University (Team Land Management), the new VLIR IUC project in Jimma University (Team Environmental Health and Ecology) and an FWO project on forest conservation and birds in Taita Hills, Kenya.

I organized and taught a training course on Forest Mapping, Inventory and Classification at Jimma University from 4-10 August 2008. I presented research findings on forest restoration at international meetings in Ethiopia, Ecuador and Austria.

ECOLIFE vzw – Leuven, Belgium 07/2006 to 08/2006  
**Consultant**

As an interim consultant, I was responsible for calculating greenhouse gas emissions by the use of household equipment, and for reviewing ways to reduce energy consumption.

KATHOLIEKE UNIVERSITEIT LEUVEN – Leuven, Belgium 10/2003 to 05/2006  
 Division Forest, Nature and Landscape  
**VLIR UDC Doctoral research fellow**

As a fellow of the Flemish Doctoral Grant scheme of VLIR University Development Cooperation, I performed research focused on development (in the south) and cooperation (between north and south), with two long field campaigns in Ethiopia. The theme, recruitment dynamics of African wild olive (*Olea europaea* ssp. *cuspidata*) in exclosures in northern Ethiopia, evolved from knowledge gaps that were identified during applied and participatory research during my previous position (project coordinator). The overall aim was to design cost-effective forest restoration strategies in degraded savanna areas based on natural processes (facilitation and limitation) and existing biodiversity (forest fragments, pioneer shrubs, bird communities).

I was the daily supervisor of two Belgian M.Sc. students. I presented results of my research at three national conferences in Ethiopia and Belgium. Between 2004 and 2006 the main chapters of my PhD thesis were published as peer-reviewed publications in international journals with high ranks in the forestry sector.

KATHOLIEKE UNIVERSITEIT LEUVEN – Leuven, Belgium  
Division Forest, Nature and Landscape

02/2001 to 09/2003

MEKELLE UNIVERSITY – Mekelle, Ethiopia  
Land Resources Management and Environmental Protection  
Department  
**Project coordinator**

As project coordinator, permanent expert and expatriate staff member at the Land Resources Management and Environmental Protection Department, Mekelle University, Mekelle, Ethiopia, I was responsible for the daily management of the research project "Forest rehabilitation through natural regeneration in Tigray, northern Ethiopia" supported by the VLIR Own Initiatives program. My tasks included:

- Design and implementation of scientific experiments enabling the development of management guidelines for accelerated forest restoration in set-aside areas in northern Ethiopia;
- Capacity building of academic staff, governmental and non-governmental staff and farmers with respect to accelerated forest restoration;
- Daily management of the project and project networking, financial administration and financial and scientific reporting to the partners and the donor organization VLIR;
- Supervising an international and multi-disciplinary research team of Belgian and Ethiopian Ph.D., M.Sc. and B.Sc. students, field workers, nursery workers, translators and drivers (up to 30 persons at the same time);
- Teaching B.Sc. courses "Silviculture" and "Dryland Forest and Woodland Management";
- Establishing and supervising an experimental tree nursery at Mekelle University campus;
- Intensive field-work in the highlands of Central Tigray;
- Attending national and international workshops and conferences (including AETFAT 2003 in Addis Ababa);
- Publishing peer-reviewed articles.

GROUND FOR GIS – Katholieke Universiteit Leuven  
Research and Development, Leuven, Belgium  
(now Spatial Applications Division Leuven, SADL)  
**Research fellow**

10/1999 to 12/2000

As a junior researcher, I was responsible for the design of a GIS study of flood risks in Flanders (commissioned by the Flemish Government and an insurance company) based on an expert-interpretation of the digital soil map of Flanders. In a later stage of the project I was responsible for the implementation of the region-wide demarcation of areas with natural flood risks and flood events in the recent past, hereby leading a team of 5 operators.

## EDUCATION AND PROFESSIONAL DEVELOPMENT

---

KATHOLIEKE UNIVERSITEIT LEUVEN – Leuven, Belgium

**Ph.D. in Bioscience Engineering, 2006**

Major in Land and Forest Management

Title of the dissertation: "Dispersal and recruitment of *Olea europaea* ssp. *cuspidata* in degraded Afromontane savanna: implications for forest restoration in the highlands of northern Ethiopia" available at <http://hdl.handle.net/1979/293>

ITECO – Belgium

**Development co-operant** for the NGO sector, 2000

KATHOLIEKE UNIVERSITEIT LEUVEN – Leuven, Belgium

**M.Sc. in Bioscience Engineering, 1999**

Major in Land and Forest Management, magna cum laude

Title of the dissertation: "Ecological site characteristics for *Dalbergia* spp. in the deciduous forest of Ban Pong, northern Thailand" (in Dutch)

## LANGUAGE SKILLS

---

Dutch (mother tongue), fluent in spoken and written English, good knowledge of French and German, fairly comfortable with Afrikaans.

Work, travel and evening school have yielded notions of Spanish, Amharinya, Tigrinya, Thai and Arabic.

## FIELD EXPERTISE AND INTERNATIONAL MOBILITY

---

- Short-term guest researcher at the Department of Forest and Wood Sciences of Stellenbosch University, South Africa, in the framework of the bilateral agreement between K.U.Leuven and Stellenbosch University (October-November 2008).
- 9 years field research, project coordination and capacity building in Tigray (2001-2006), Gondar (2009) and Jimma (2008-2009), Ethiopia
- 3 years (2001-2003) as full-time expatriate staff member at the Land Resources Management and Environmental Protection Department of Mekelle University, Ethiopia.
- 3 months field research in deciduous forest in Chiang Mai province, northern Thailand and an additional study trip of one week to Chiang Mai University and the Forest Restoration Research Unit (FORRU).
- Extensive experience in the tropics with emphasis on tropical dry forests and rainforests (9 one-month field trips to Indonesia, Malaysia, Thailand, Laos, Costa Rica, Panama, Tanzania, Cambodia, Kenya, Uganda, South Africa and Swaziland).

**AWARDS**

---

- Certificate of Recognition (2003) for the substantial contribution to the Research and Publication activities of Mekelle University in 2002.
- Nominated for the Applied Vegetation Science Editor's Award for 2006
- Special Honorable Mention in the VDK Prize for Sustainable Development 2008

**PARTICIPATION IN CONFERENCES**

---

**2008**

Sustainable Forest Management in Africa Symposium. African Solutions to African Problems in Natural Forest Management. Stellenbosch, South Africa, 3–7 November 2008. Oral presentation.

FWO Kennismakers – Dag van de Onderzoeker. Symposium organized by the Research Foundation Flanders (FWO). 23 October 2008

K.U.Leuven Postdoc Day. Symposium organized by the K.U.Leuven Research Coordination Office, in collaboration with the Human Resources department, Leuven Research and Development, the International Office, the three Academic Groups, and the academic personnel representatives. 18 September 2008

Genetic diversity in medicine, agriculture and conservation. Symposium organized by the Leuven Center for Bio-Science, Bio-Engineering and Bio-Technology and the Interdisciplinary Cluster of Evolutionary Biology, K.U.Leuven. 11 September 2008

Science Blogging 2008: London, Nature Network and the Royal Institution, London, UK. 29–30 August 2008.

Forest Mapping, Inventory and Classification Training. Guest lecturer at Jimma University, 4-8 August 2008.

Aardse Zaken. Symposium organized by the Department of Earth and Environmental Science, K.U.Leuven. 30 May 2008. Poster contribution.

International Conference on Mountain Forests in a Changing World, BOKU University of Natural Resources and Applied Life Sciences, Vienna, Austria, 2-4 April 2008. Oral presentation.

**2007**

Koningsfeest – Belgium and International Cooperation. Academic session with the members of the Belgian Royal Family at the Senate, Brussels, 15 November 2007.

Leuven goes South – Development cooperation by K.U.Leuven and the city of Leuven, Leuven, Belgium, 16 October 2007.

Ethiopian Millennium Symposium, Ethiopian Embassy Brussels, Koninklijke Academie voor Overzeese Wetenschappen; Palais des Académies, Brussels, Belgium, 4 October 2007.

First International Sediment Forum, Programa para el Manejo del Agua y del Suelo, Universidad de Cuenca, K.U.Leuven and VLIR; Cuenca, Ecuador, 8 March 2007. Invited speaker.

**2006**

HighLand2006 "Environmental change, geomorphic processes, land degradation and rehabilitation in tropical and subtropical highlands", Mekelle University and VLIR IUC; Mekelle, Ethiopia, 19-25 September 2006. Field presentation, poster session chair person, post-conference expedition security advisor.

**2005**

International Conference "Africa's Great Rift: Diversity and Unity", Royal Museum for Central Africa Tervuren, Koninklijke Academie voor Overzeese Wetenschappen; Palais des Académies, Brussels, Belgium, 29-30 September 2005.

Workshop "Erosion, afforestation and people", K.U.Leuven and Chinese Academy of Sciences; Leuven, Belgium, 24-26 May 2006. Poster presentation.

Studiedag "Starters in het Bosonderzoek", INVERDE and Afdeling Bos en Groen, Ministerie van de Vlaamse Gemeenschap; Brussels, Belgium, 22 March 2005. Oral presentation.

**2004**

Symposium on the rehabilitation of dryland forests in Ethiopia: ecology and management, Mekelle University, K.U.Leuven and VLIR; Mekelle, Ethiopia, 21-24 September 2004. Paper presentation and two poster presentations.

**2003**

Zala-Daget Stakeholder Forum, Mekelle University, K.U.Leuven and VLIR; Mekelle, Ethiopia; 18 November 2003. Invited speaker.

XVIIth International AETFAT Congress "Biodiversity, Ecology, Taxonomy and Phytogeography of African Plants"; U.N. Congress Center, Addis Ababa, Ethiopia, 21-26 September 2003. Two paper presentations; one poster presentation.

International IUFRO Symposium "History and Forest Biodiversity. Challenges for Conservation", K.U.Leuven, Belgium, 13-15 January 2003.

**2002**

National Congress on "Forest resources of Ethiopia: status, challenges and opportunities", Institute for Biodiversity Conservation and Research, Addis Ababa, Ethiopia; 27-29 November 2002. Paper presentation.

6th Symposium on Sustainable Water Resources Development, Arba Minch Water Technology Institute; Arba Minch, Ethiopia, 8-9 July 2002. Paper presentation.

---

## SCIENTIFIC NETWORK AND REVIEW TASKS

---

- Member of Nature Network  
([network.nature.com/blogs/user/rafaerts](http://network.nature.com/blogs/user/rafaerts))
- Registered with the Belgian Biodiversity Platform  
([biobel.biodiversity.be/person/show/1419](http://biobel.biodiversity.be/person/show/1419))
- Manuscript evaluation for Ecological Monographs, Biological Conservation, Forest Ecology and Management, Restoration Ecology, Journal of Arid Environments, Journal of Tropical Ecology, Applied Vegetation Science, Plant Ecology, Land Degradation and Development, New Forests and Conservation Letters.

---

## MEMBERSHIPS

---

- Member of Groenhart vzw, an NGO responsible for managing the Flemish Fund for Tropical Forest (Vlaams Fonds Tropisch Bos) in cooperation with WWF Belgium and VBV (Vereniging voor Bos in Vlaanderen); former member of the Board of Directors of Groenhart vzw (2006).
- Member of Natuurpunt (Oost-Brabant)
- Member of VELT (Society for Ecological Lifestyle and Agriculture)
- Member of National Geographic Society

## PEER-REVIEWED PUBLICATIONS

If applicable, with 2007 JCR Science Edition Impact Factor

Open-Access versions of all publications are available via Lirias

<https://lirias.kuleuven.be/simple-search?query=u0019879>

---

2009

Aerts R., Nyssen J and Haile M. 2009. On the difference between “exclosures” and “enclosures” in ecology and the environment. **Journal of Arid Environments** DOI:10.1016/j.jaridenv.2009.01.006 (IF 1.349).

Negussie A., Aerts R., Gebrehiwot, K. Prinsen, E. and Muys B. 2009. *Euphorbia abyssinica* latex promotes rooting of *Boswellia* cuttings. **New Forests** 37: 35-42 (IF 0.733)

2008

Aerts R. 2008. Digital identifiers could keep up with authors' moves. **Nature** 454:575 (IF 28.751).

Aerts R. 2008. Digital identifiers work for articles, so why not for authors? **Nature** 453:979 (IF 28.751).

Aerts R., November E., Maes W., Van der Borgh I., Negussie A., Aynekulu E., Hermy M., Muys B. 2008. In situ persistence of African wild olive and forest restoration in degraded semiarid savanna. **Journal of Arid Environments** 72: 1131-1136 (IF 1.349).

Aerts R., Lerouge F., November E., Lens L., Hermy M. and Muys B. 2008. Land rehabilitation and the conservation of birds in a degraded Afromontane landscape in northern Ethiopia. **Biodiversity and Conservation** 17: 53-69 (IF 1.421)

Negussie A., Aerts R., Gebrehiwot, K. and Muys B. 2008. Seedling mortality causes recruitment limitation of *Boswellia papyrifera* in northern Ethiopia. **Journal of Arid Environments** 72: 378-383 (IF 1.349)

- Achten W.M.J., Verchot L., Franken Y.J., Mathijs E., Singh V.P., Aerts R., Muys B. 2008. *Jatropha* bio-diesel production and use. **Biomass and Bioenergy** 32:1064-1084 (IF 1.779)
- Aerts R. 2008. *Afrocarpus falcatus* (Thunb.) C.N. Page. Pages 36-39 in: Louppe, D., Oteng-Amoako, A.A. and Brink, M. (eds), **Plant Resources of Tropical Africa** 7(1). Timbers 1. PROTA Foundation/Backhuys Publishers/CTA Wageningen, The Netherlands.
- Aerts R. 2008. *Erythrina abyssinica* Lam ex DC. Pages 249-252 in: Louppe, D., Oteng-Amoako, A.A. and Brink, M. (eds), **Plant Resources of Tropical Africa** 7(1). Timbers 1. PROTA Foundation/Backhuys Publishers/CTA Wageningen, The Netherlands.
- 2007
- Achten W.M.J., Mathijs E., Verchot L., Singh V.P., Aerts R. and Muys B. 2007. *Jatropha* bio-diesel fueling sustainability? **Biofuels, Bioproducts and Biorefining** 1: 283-291 (IF not assigned yet)
- Fontaine M., Aerts R., Özkan K., Mert A., Gülsoy S., Süel H., Waelkens M. and Muys B. 2007. Elevation and exposition rather than soil types determine communities in dry Mediterranean mountain forests of southern Anatolia, Turkey. **Forest Ecology and Management** 247: 18-25 (IF 1.579)
- Aerts R. 2007. Church forests in Ethiopia. **Frontiers in Ecology and the Environment** 5: 66-66 (IF 4.269).
- Aerts R., Negussie A., Maes W., November E., Hermy M. and Muys B. 2007. Restoration of dry Afromontane forest using pioneer shrubs as nurse plants for *Olea europaea* ssp. *cuspidata*. **Restoration Ecology** 15: 12-138 (IF 1.948).
- 2006
- Aerts R., Van Overtveld K., Haile M., Hermy M., Deckers J. and Muys B. 2006. Species composition and diversity of small Afromontane forest fragments in northern Ethiopia. **Plant Ecology** 187: 127-142 (IF 1.236).
- Aerts R., Maes W., November E., Negussie A., Hermy M. and Muys B. 2006. Restoring dry Afromontane forest using bird and nurse plant effects: direct sowing of *Olea europaea* ssp. *cuspidata* seeds. **Forest Ecology and Management** 230: 23-31 (IF 1.579).
- Aerts R., November E., Van der Borgh I., Behailu M., Hermy M. and Muys B. 2006. Effects of pioneer shrubs on the recruitment of the fleshy-fruited tree *Olea europaea* ssp. *cuspidata* in Afromontane savanna. **Applied Vegetation Science** 9: 117-126 (IF 1.431).
- Aerts R., Maes W., November E., Behailu M., Poesen J., Deckers J., Hermy M. and Muys B. 2006. Surface runoff and seed trapping efficiency of shrubs in a regenerating semiarid woodland in northern Ethiopia. **Catena** 65: 61-70 (IF 1.346).
- Aerts R., Van der Borgh I., November E., Behailu M., Hermy M. and Muys B. 2006. The importance of early successional shrubs for recruitment of African wild olive (*Olea europaea* ssp. *cuspidata*) in central Tigray, Ethiopia. In: Ghazanfar S.A. and Beentje A.J. (eds), **Taxonomy and ecology of African Plants and their conservation and sustainable use**. Royal Botanic Gardens, Kew, pp. 167-176.
- 2004
- Aerts R., Wagendorp T., November E., Behailu M., Deckers J. and Muys B. 2004. Ecosystem thermal buffer capacity as an indicator of the restoration status of protected areas in the northern Ethiopian highlands. **Restoration Ecology** 12: 586-596 (IF 1.948).