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°11 October 1981, Leuven (Belgium)

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CURRENT POSITION

KATHOLIEKE UNIVERSITEIT LEUVEN – Leuven, Belgium

10/2006 to 10/2010

Division Forest, Nature and Landscape

Ph.D. research fellow (VLIR-UOS scholarship)

Current Research activities

Performing research for the Ph.D. project I wrote in 2006. The research is a sustainability evaluation of bio-diesel production and use from tropical biofuel trees (Physic nut, *Jatropha curcas* L. and Oil palm, *Elaeis guineensis* Jacq.). The environmental part of the sustainability evaluation is performed using the Life cycle assessment (LCA) tool, for which we are developing a land use impact assessment methodology. The socio-economic sustainability is researched by performing case-studies and cost-benefit analyses. Besides the sustainability evaluation, we investigate plant specific properties of *Jatropha curcas*: e.g. water use, biomass production, root structure, land suitability. The research mainly consists of field work both in the greenhouse as in the field. In-field research is organized in Allahabad, India in collaboration with the World Agroforestry Centre (dr. Louis Verchot and dr. V.P. Singh) and NGO Utthan (dr. D.N. Tiwari).

Current academic tasks

- guiding four M.Sc thesis students in their thesis research and writing
- guiding B.Sc and M.Sc students during practical forestry sessions
- writing research project proposals
- Peer-reviewing article manuscripts for Applied Energy, Fuel, Journal of Environmental Management and Industrial Crops and Products
- attending and presenting at international conferences.

Further I am responsible for the management of the research group website and regularly perform consultations for private companies,

WORK EXPERIENCE

CARAES NGO – Kigoma, Tanzania 10/2005 to 09/2006
Newman College & Newman Institute of Social Work
Volunteer agricultural project coordinator and tutor informatics

Start up a palm oil production project as a self-supporting activity for the school which was mainly donor dependent: exploring suitability and feasibility, writing project proposals for fundraising, contacts with local governance, institutes and companies, preliminary financial cost-benefit analysis, work plan.

In the Newman Institute of Social Work: tutoring informatics, writing manuals on the MS Office tool kit, work on Bachelor Degree Accreditation.

NALIENDELE AGRICULTURAL RESEARCH INSTITUTE, 07/2004 to 10/2004
Mtwara, Tanzania
VLIR-EI project: “Soil Conservation Management”
M.Sc. Research Fellow (REI scholarship)

Fieldwork for master thesis: Interviewing farmers in rural villages, contacting local governance and institutes, field measurements of gully erosion, report writing, presenting preliminary results.

EDUCATION

KATHOLIEKE UNIVERSITEIT LEUVEN – Leuven, Belgium
Department Earth and Environmental Sciences
Ph.D. training in Bioscience Engineering, since 2006
Title of the dissertation: “Life-cycle assessment of liquid biofuel production from *Jatropha curcas* L. in village production units in developing countries”
(Promoters: Prof. dr. ir. Bart Muys and Prof. dr. ir. Erik Mathijs)

KATHOLIEKE UNIVERSITEIT LEUVEN – Leuven, Belgium
M.Sc in Bioscience Engineering, 2005
Major in Land and Forest Management
Title of the dissertation: “Spatial distribution and topographic thresholds for gully erosion in South Eastern Tanzania” (Promoters: Prof. dr. ir. Seppe Deckers and Prof. dr. Jean Poesen): magna cum laude

 FURTHER DEVELOPMENT AND SKILLS

LANGUAGES

Dutch (mother tongue), fluent in spoken and written English, good knowledge of French, Basic knowledge of German and Kiswahili, notions of Hindi

TECHNICAL SKILLS

MS Office software (MS Word, Excel, PowerPoint, Access, Publisher and equivalents in OpenOffice and Adobe Acrobat)

GIS (ArcView 3.2, experience with ESRI ArcInfo, ArcGIS and Idrisi)

Scientific software (SPSS, ProCite, experience with SAS)

Graphical software (Photoshop CS2)

EXTRACURRICULAR FORMATIONS

First aid volunteer, Het Vlaamse Kruis VZW Division Leuven	2007-2008
Language Course Kiswahili, K.U.Leuven Language Institute	2003-2004
Organizer Interfaculty Song Festival (LBK student club)	2003-2004
Sound Engineer, Flemish Federation for youth clubs	2002-2003
Youth Animator: animator, representative, staff member	1998-2005

 PUBLICATIONS

Articles in internationally reviewed scientific journals

- **Achten WMJ***, Maes WH*, Reubens B, Mathijs E, Singh VP, Verchot L, Muys B (2010). Biomass production and allocation in *Jatropha curcas* L. seedlings under different levels of drought stress. *Biomass & Bioenergy*, in press. (IF: 2.540)
*: **Authors contributed equally, shared first authorship**
- **Achten WMJ**, Nielsen LR, Aerts R, Lengkeek AG, Kjaer ED, Trabucco A, Hansen JK, Maes WH, Graudal L, Akinnifesi FK, Muys B (2010). Towards domestication of *Jatropha curcas*: a review. *Biofuels*, 1, 91-107. DOI: 10.4155/bfs.09.4 (IF: not yet calculated)
- **Achten WMJ**, Maes WH, Aerts R, Verchot L, Trabucco A, Mathijs E, Singh VP, Muys B (2010). *Jatropha*: from global hype to local opportunity. *Journal of Arid Environments*, 74, 164-165. (IF: 1.589)
- Maes WH, **Achten WMJ**, Muys B (2009). Use of inadequate data and methodological errors lead to an overestimation of the water footprint of

- Jatropha curcas*. Proceedings of the National Academy of Sciences, 106, E91-E91 (IF: 9.380)
- Maes WH, Trabucco A, **Achten WMJ**, Muys B (2009). Climatic growing conditions of *Jatropha curcas* L. Biomass and Bioenergy, 33, 1481-1485. (IF: 2.540)
 - Maes WH*, **Achten WMJ***, Reubens B, Raes D, Samson R, Muys B 2009. Plant-water relationships and growth strategies of *Jatropha curcas* L. seedlings under different levels of drought stress. Journal of Arid Environments 73, 877-884. (IF: 1.589)
- *: **Authors contributed equally, shared first authorship**
- **Achten WMJ**, Verchot L, Franken YJ, Mathijs E, Singh VP, Aerts R, Muys B 2008. *Jatropha* bio-diesel production and use: a review. Biomass & Bioenergy 32, 1063-1084. DOI: 10.1016/j.biombioe.2008.03.003. (IF: 2.540)
 - **Achten WMJ**, Dondeyne S, Mugogo S, Kafriti E, Poesen J, Deckers J, Muys B 2008. Gully erosion in South Eastern Tanzania: spatial distribution and topographic thresholds. Zeitschrift für Geomorphologie 50, 225-235: DOI: 10.1127/0372-8854/2008/0052-0225 (IF: 0.614)
 - **Achten WMJ**, Mathijs E, Verchot L, Singh VP, Aerts R, Muys B 2007. *Jatropha* biodiesel fueling sustainability? Biofuels, Bioproducts and Biorefining 1(4), 283-291. DOI: 10.1002/bbb.39. (IF: 2.909)

Taking part in discussion in Internationally reviewed scientific journals

- **Achten WMJ** 2008. Science journals have been slow to make themselves audible. Nature 455, 590-590. (IF: 31.434)

Book chapters, internationally recognized scientific publisher (internationally reviewed):

- **Achten WMJ**, Akinnifesi FK, Maes WH, Trabucco A, Aerts , Mathijs E, Reubens B, Singh VP, Verchot L, Muys B (2010). *Jatropha* integrated agroforestry systems - biodiesel pathways towards sustainable rural development. In: Ponterio C & Ferra C (eds.) *Jatropha curcas* as a premier biofuel: cost, growing and management. Nova Science Publishers, Hauppauge, NY, USA, in press.

Papers at international conferences and symposia, published in full in proceedings (internationally reviewed)

- **Achten WMJ**, Mathijs E, Muys B (2009). Proposing a life cycle land use impact calculation methodology. in: Nemecek T & Gaillard G (Eds.) Proceedings of the 6th International Conference on LCA in the Agri-Food

Sector - Towards a sustainable management of the Food chain.
November 12-14, 2008, Zurich, Switzerland. Agroscope Reckenholz-Tänikon Research Station ISBN 978-3-905733-10-5, 22-33.

- **Achten WMJ**, Muys B, Mathijs E, Singh VP, Verchot L 2007. Life-cycle assessment of bio-diesel from *Jatropha curcas* L. energy balance, impact on global warming, land use impact. Book of proceedings - The 5th International Conference LCA in foods - 25-26 April, Gothenburg, Sweden, 96-102.

Papers at local conferences and symposia, published in full in proceedings (reviewed)

- **Achten WMJ**, Reubens B, Maes W, Mathijs E, Verchot L, Singh VP, Poesen J, Muys B (2007). Root architecture of the promising bio-diesel plant *Jatropha*. Communication in Agricultural and Applied Biological Sciences. Ghent University (ISSN 1379-1176) 72(1), 81-85.

Meeting abstracts, presented at international conferences and symposia, published or not published in proceedings or journals

- **Achten WMJ**, Vandenbempt P, Mathijs E, Muys B 2009. Life cycle assessment of a Palm oil system producing both biodiesel and cooking oil: a Cameroon case. In: International Palm Oil Life Cycle Assessment Conference 2009, Crown Plaza Mutiara Hotel, Kuala Lumpur, Malaysia, 2009 18-20 October, 11-11.
- **Achten WMJ**, Vandenbempt P, Singh VP, Verchot L, Mathijs E, Muys B 2009. Comparing life cycle assessments of tropical bio-diesels: *Jatropha* versus Oil palm. In: Book of Abstracts, 2nd World Congress of Agroforestry, 23-28 August, Nairobi, Kenya, 133-133.
- **Achten WMJ**, Aerts R, Maes WH, Mathijs E, Reubens B, Trabucco A, Lemaître P, Singh VP, Vandenbempt P, Verchot L, Muys B 2009. Environmental performance of tropical bio-diesel trees. in: Book of Abstracts of International Symposium Developing countries facing global warming: a post-kyoto assessment, Royal Academy for Overseas Sciences United Nations, Brussels, 12-13 June, 2009, 25-25 + poster presentation
- **Achten WMJ**, Bolle E, Fobelets V, Mathijs E, Deckers S, Muys B 2009. Life cycle assessment of *Jatropha* biodiesel: preliminary results of an Indian case. in: Book of Poster Abstracts of Starters in Bosonderzoek, 19 March, Brussels, Blegium, 1-1. + Poster Presentation
- **Achten WMJ**, Mathijs E, Verchot L, Singh VP, Muys B 2008. Unraveling the *Jatropha* biodiesel system. in: Book of abstracts of the 3rd Strategic

- Energy Forum, 16 December 2008, Brussels, Belgium + Poster Presentation
- **Achten WMJ**, Vandenbempt P, Lemaître P, Mathijs E, Muys B 2008. Proposing a life cycle land use impact calculation methodology. In: 6th International Conference on Life Cycle Assessment in the Agri-Food Sector - Book of Abstracts, 12-14 November 2008, Zürich, Switzerland, 5-5. + Oral presentation
 - Muys B, Trabucco A, **Achten W**, Mathijs E, Van Orshoven J, Zomer R, Verchot L, Singh VP 2008. Land suitability for *Jatropha* biofuel production. In: Fourth International conference on Renewable Resources and Biorefineries - Book of abstracts, 1-4 June 2008, Rotterdam, The Netherlands + oral presentation by Muys *et al.*
 - Muys B, **Achten W**, Mathijs E, Singh V.P, Verchot L 2007. Bio-diesel production from *Jatropha curcas* L.: energy balance, global warming potential and land use impact. Book of abstracts of the Third International Conference on Renewable Resources and Biorefineries, 4-6 June, 2007, Ghent, Belgium, 55 + oral presentation by Muys *et al.*
 - **Achten W**, Muys B, Mathijs E, Singh V.P, Verchot L 2007. Life-cycle assessment of Bio-diesel from *Jatropha curcas* L. energy balance, impact on global warming, land use impact. 5th International conference on LCA in foods (25-26 april 2007), Götheborg, Sweden + poster presentation by Achten *et al.*
 - **Achten W**, Mathijs E, Verchot L, Singh V.P, Muys B 2007. Bio-diesel from *Jatropha*: the life-cycle perspective. FACT seminar *Jatropha curcas* L.: agronomy and genetics. 26-28 March 2007, Wageningen, the Netherlands. Book of abstracts + oral presentation by Muys *et al.*
 - **Achten W**, Muys B, Mathijs E, Verchot L 2007. Biodiesel productie uit *Jatropha* in ontwikkelingslanden: Levenscyclusanalyse en relevante impactcategoriën. Starters in het Bosonderzoek - donderdag 22 maart 2007 + poster presentation by Achten *et al.*
 - **Achten W**, Mathijs E, Verchot L, Singh V.P, Muys B 2007. Bio-diesel from *Jatropha*: life-cycle and environmental impact. 2nd International Energy Farming Congress (13 - 15 march 2007) Papenburg, Germany + oral presentation by Muys *et al.*
 - **Achten, W.**, Muys, B., Mathijs, E. & Verchot, L. 2006. Bio-diesel production from *Jatropha* in developing countries: Life cycle and relevant impact categories. Book of abstracts of the Conference biomass for energy: challenges for agriculture, 25-26 September 2006, Bruges, Belgium., 106 + poster presentation by Achten *et al.* (Online Journal of Scientific Posters EP10635)

PARTICIPATION IN CONFERENCES AND WORKSHOPS

2010

European Convention on Global Sustainable Bionergy. Delft, The Netherlands, February 24-26.

2009

4rd Strategic Energy Forum. Cinquantenaire Museum Brussels, Belgium, December 10. Poster Presentation

International Palm oil Life cycle assessment conference 2009, Kuala Lumpur, Malaysia, October 18-20 (**invited speaker**)

2nd JatropaWorld Africa. Brussels, Belgium, October 14-15 (**invited speaker**)

Shape your sustainability tools – and let your tools shape you. Uppsala, Zweden, September 23-24 (Poster presentation)

2nd World Congress of Agroforestry. Nairobi, Kenya, August 23-28 (**Oral presentation**)

Workshop: publishing in a changing world. Leuven, Belgium, February 19

Workshop: Discussion forum Biofuels, Parliament of the Flemish Government, Brussels, April 1

International Symposium Developing Countries facing Global Warming: a Post-Kyoto Assessment, Palais des Académies, June 12-13. Poster Presentation

Research center launch event, Leuven Sustainable Earth, Leuven, Belgium, June 19 (**Oral presentation**)

Conference on “Biofuels and biodiversity”, Brussels, June 25, 2009

Thomson Reuters Workshop “Research Evaluation and trends in Citation Metrics”, Leuven, Belgium, June 26

2008

3rd Strategic Energy Forum. Autoworld Brussels, Belgium, December 16. Poster Presentation

Roundtable on Sustainable Biofuels. South-Asian Outreach Meeting. New Delhi, India, June 12-13

World Development Report Launch. New Delhi, India. February 15.

6th International Conference on Life Cycle Assessment in the Agri-Food Sector – Towards a Sustainable Management of the Food Chain. Zurich, Switzerland. November 12-14, 2008. Poster Presentation

2007

4th International conference on biofuels. New Delhi, India. February 1-2, 2007

5th International conference on Life Cycle Assessment in the Agri-Food Sector. Götheborg, Sweden. April 25-26, 2007. Poster Presentation

Workshop on “Inclusion of sustainability criteria in the Fuel Quality Directive (COM(2007) 18)”. Brussels, Belgium. July 5, 2007

13th PhD Symposium on Applied Biological Sciences. Leuven, Belgium. October 17, 2007. Poster Presentation

2006

Conference Biomass for Energy: Challenges for Agriculture. Bruges, Belgium. September 25-26, 2006

Leerstoel Boerenbond “KYOTO in Land- en Tuinbouw”. Leuven, Belgium. November 24, 2006

MEDIA IMPACT

International Press

- ‘*Jatropha curcas*: what sustainability?’ *Tropicultura*, Jan-March, 2009, p. 1
- ‘Biodiesel from *Jatropha*’, *New Energy*, 30.04.2007, p. 28-29
- ‘Simple *Jatropha* fuels Belgian scholar’s imagination & studies’, *Times of India*, 09.04.2007

Belgian Press:

- ‘Twijfels over mirakelbrandstof’, *De Morgen*, 06.10.2009, p. 14
- ‘Biodieselplant *jatropha*: duurzaam, maar geen wondermiddel’, *DeMorgen.be and HLN.be*, 03.10.2009; *Belga*, 04.10.2009.
- ‘Biodieselplant *jatropha*: wel duurzaam, geen wondermiddel’, *DagKrant*, 03.10.2009
- ‘Duurzaamheid van bioenergie uit *Jatropha*’, *DiOde*, 23.01.2008
- ‘Groeien op slechte grond’, *Knack*, 23.01.2008, p. 67
- ‘Hier is de dieselnoot’, *Gazet van Antwerpen*, 27.03.2008, p. 13

