

## Curriculum Vitae

### Jennie Barron

*Research fellow in water management*

**Present address (work):**

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(work)

**Present additional affiliation:**

STOCKHOLM RESILIENCE CENTRE  
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10691 Stockholm  
SWEDEN

### Short bio

Dr Barron is a research fellow in water management in SEI. Her research is focussed on water management in field to meso-scale watersheds for food production, livelihood improvements and agro-ecosystems sustainability. Most of her research on agro-hydrological measuring and modelling particularly focus on potential upgrades in smallholder farming system in tropical developing countries. Dr Barron is now working on research specifically aimed at building further knowledge in the integrated resource management strategies actively incorporating on and off farm water uses in field to meso-scale watershed scale. Of particular interests are the changes in water and land resources due to global and local drivers of change for sustainable development. The research activities are being undertaken several project partnerships, currently focussing on sites in with CRESA, Univ Abdou Moumouni (Niger) and INERA (Burkina Faso), and in Tanzania, Burkina Faso and India with IWMI, IFPRI, FAO, IDE and local partners with Sokoine University. Related research was carried out within the SSI Programme, a partnership development and research initiatives with activities in Pangani (Tanzania) and Thukela basin (South Africa) with Sokoine University of Agriculture, University of KwaZulu Natal, Stockholm University and UNESCO-IHE. In the past, Dr Barron worked with water and agricultural related research and development in sub-Saharan Africa, SE Asia and Australia. She has also several years of experience in higher education and learning support activities both in Sweden and in the African context. She has also contributed to the CGIAR initiative "Comprehensive assessment of water for agriculture" and made contributions towards the Swedish Environmental Advisory Council on future fresh water and land requirements for food, and bioenergy. She holds a Ph.D. in Natural Resource Management, Stockholm University, and a M.Sc. in Agricultural Engineering, Swedish University of Agricultural Sciences (SLU, Uppsala, Sweden). Dr Barron has author/co-author to 10 peer reviewed papers and book chapters. She currently serves as a member on the Scientific Board of The Water Research Fund of Southern Africa (WARFSA).

### ACADEMIC QUALIFICATIONS

10/97 – 04/04 Ph.D. in Natural Resource Management,

Department of Systems Ecology, Stockholm University

06/01 Filosofie Licenciat (Fil. Lic) in Natural Resource Management

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Department of Systems Ecology, Stockholm University  
 09/89 – 04/94 Agronomexamen (M.Sc. in Agric. Sci.: major in agricultural engineering)  
 Sveriges lantbruksuniversitet, Uppsala (Swedish University of Agricultural  
 Sciences)

### POSITIONS HELD

- 09/08 Research Fellow Stockholm Environment Institute (SEI)/ Stockholm Resilience Centre (SRC).  
 09/06 – 08/08 Post-doctoral Stockholm Environment Institute (SEI)/ Stockholm Resilience Centre (SRC). Funded through FORMAS  
 04/05 – 05/05 Project researcher at Stockholm Environment Institute (SEI).  
 10/04 – 03/05 Capacity building at Centre for Learning and Teaching (UPC), Stockholm University.  
 04/04 - 10/04 Own consultancy. Contracted by UNESCO-IHE and ICRISAT as part of CGIAR initiative on '*Comprehensive Assessment of Water Management in Agriculture*'  
 09/05 – 04/06 Research coordinator at Stockholm Environment Institute (SEI), Stockholm.  
 09/97 – 04/04 PhD project at Department of System Ecology, Stockholm University in Natural Resource Management. Supervisor Professor Carl Folke, (*N.B. 2 years of time spent on maternity leave as custom in Sweden*)  
 08/96 - 08/97 Junior Professional Officer at International Centre in Agroforestry Research (ICRAF)/ Education Programme, Nairobi, Kenya.  
 09/95 - 08/96 Course/research assistant at Dep. of Soil Sci., SLU, Uppsala  
 05/95 - 08/95 Visiting scientist at CRC/ Div. of soil & land mgmt, Adelaide, Australia. Grant from Kungl. Skogs- och Lantbruks Akademien (KSLA).  
 10/94 - 04/95 Course and research assistant at Dep. of Soil Sci., SLU, Uppsala in catchment hydrology and environmental physics  
 06/94 - 10/94 Research intern at ORSTOM, Niamey, Niger, in field scale hydrology research

### SUPERVISION OF PhD

- 2004-2009 Elin Enfors "Links between resilience and intensification of smallholder farming through water system innovations in semi-arid agro-ecosystems".. Thesis defended 15 May 2009 (Co supervisor)  
 2007-2011 Chuba Jamir "Ozone impacts and climate change effects of food security: impacts in south Asia", Environment Department, University of York (Member of TAC committee)

### SUPERVISION OF Post docs

- 2009 Dr Kausal Garg, ICRISAT/SRC: Water flows and potential shifts: a resilience perspective on agricultural development in Kothapally watershed, India  
 2009-2010 Dr Victor Kongo, SEI-SRC during 2009-2010: Meso scale effects by agricultural water management interventions in pilot watersheds in Tanzania and Zambia

### SELECTED INVITED PRESENTATIONS

- Hatibu, N., **Barron, J.** Tradeoffs or opportunities? A think piece on biofuels, land and livelihoods in SSA. Invited presentation at SIWI seminars, Stockholm 17 August, 2008  
**Barron, J.** 2008 Africa Green Revolution Conference: An Alliance for Action , 28-29 August, Oslo: invited panel member in Technologies and processes for sustainable usage of and access to water  
**Barron, J.** Inter-dependence of GDP on rainfall: deepening the analysis for some African case countries. Presentation at the 17<sup>th</sup> Stockholm Water Symposium, Stockholm 12th August, 2007(invited speaker)  
**Barron, J.** The position of rainwater harvesting in IWRM for sustainable development. Keynote speech at SEARNET 10<sup>th</sup> International Conference 4-6 December 2006, Mombasa, Kenya

**Barron, J.**, Rockström, J., Fox, P. Dry spell mitigation with supplemental irrigation of cereals: crop yield benefits and potential water balance effects. Presentation at the 14<sup>th</sup> Stockholm Water Symposium, Stockholm 16-20 August, 2004

**Barron, J.**, Rockström, J. 2003. Water harvesting to upgrade small-holder farming: experiences from on-farm research in Kenya and Burkina Faso. Stockholm University/RELMA; Nairobi (Pp. 20)

## Publications

### I. Peer-reviewed articles

**Barron, J.**, Noel, S. The values of agricultural water management interventions in meso-scale catchments: a synthesis of cases. *Submitted to Phys Chem Earth*

**Barron, J.**, Enfors, E, Rytta, S., Sandahl. Green-blue flow dependency in rainfed agro-eco systems: livelihood analysis in Makanya watershed, NE Tanzania'. *In review Phys Chem Earth*

Enfors, E, **Barron, J.**, Rockstrom, J., Makurira, H., Tumbo, S. (submitted). Yield and soil system changes from conservation tillage in dryland farming: a case study from North Eastern Tanzania. *In review Agricultural Water Management*.

Rockström, J, Kaumbutho, P., Mwalley, J., Nzabi, A.W., Temesgen, M., Mawenya, L., **Barron, J.**, and Damgaard-Larsen, S. 2009. Conservation Farming Strategies in East and Southern Africa: A Regional Synthesis of Crop and Water Productivity from On-farm Action Research. *Soil&Tillage Research (in print)*

Rockström, J., Wani, S.P., Hatibu, N., Oweis, T., Karlberg, L., **Barron, J.**, Bruggeman, A., Farahani, J. and Qiang, Z. (2008): Unlocking the potential of rainfed agriculture; the need for a paradigm shift in water resource management. *Agricultural Water Management*, in press.

Rockström, J., **Barron, J.** 2007. Water productivity in rainfed systems: Overview of challenges and analysis of opportunities in water scarcity prone savannahs. *Irrigation Science 25(3):299-311*

Rockström, J., Hatibu, N., Oweis, T., Wani, S., **Barron, J.**, Bruggeman, A., Qiang, Z., Farahani, J., Karlberg, L. 2007. *Managing Water in Rainfed Agriculture. Chapter 8 in 'Water for food water for life' (Eds. D Molden) Comprehensive Assessment of Water Management in Agriculture. IWMI/Earthscan.*

**Barron, J.**, Okwach, G. 2005. Run-off water harvesting for dry spell mitigation in maize (*Zea Mays*, L.): results from on-farm research in semi-arid Kenya *Agricultural Water Management 74(1):1-21*

Fox, P., Rockström, J., **Barron, J.**, 2004. Risk analysis and economic viability of water harvesting for supplemental irrigation in the semiarids. *Agricultural Systems 83(3):231-250*

**Barron, J.**, Rockström, J., Gichuki, F., Hatibu, N. 2003. Dry spell analysis and maize yields for two semi-arid locations in east Africa. *Agricultural and Forest Meteorology 117:23-37*

Rockström, J., **Barron, J.**, Fox, P., 2003. Water productivity in rainfed agriculture: Challenges and opportunities for smallholder farmers in drought prone tropical agro-ecosystems. In 'Water productivity in agriculture: limits and opportunities for improvements' (Eds. J.W. Kijne, R. Barker, D. Molden), CABI, Wallingford, U.K.

Rockström, J., **Barron, J.**, Fox, P., 2002. Rainwater management for increased productivity among small-holder farmers in drought prone environments. *Physics and Chemistry of the Earth 27:949-959*

Rockström, J., **Barron, J.**, Brouwer, J., Galle, S, de Rouw, A. 1999. On-Farm Spatial and Temporal Variability of Soil and Water in Pearl Millet Cultivation. *Soil Sci. Soc. Am. J.* 1999 63: 1308-1319.

**Barron, J.**, J. Rockström, F. Gichuki. 1999. Rain water management for dryspell mitigation in semi-arid Kenya. *East African Agricultural and Forestry Journal 65(1):57-69*

Rockström, J., P-E Jansson, **J. Barron.** 1998. Seasonal rainfall partitioning under runoff and runoff conditions on sandy soil in Niger. On-farm measurements and water balance modelling. *Journal of Hydrology 210:68-92*

### II. Peer-reviewed other

**Barron, J.** 2004. Dry spell mitigation to upgrade semi-arid rainfed agriculture: water harvesting and soil nutrient management for smallholder maize cultivation in Machakos, Kenya. Ph. D. Thesis in Natural Resource Management, Department of Systems Ecology, Stockholm University, Stockholm (Pp. 1-39)

**Barron, J.** 2001. On-farm water management for dry spell mitigation in semi-arid sub-Saharan Africa. Licentiate Thesis in Natural Resource Management, Department of Systems Ecology, Stockholm University, Stockholm

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**III. Other publication: selected synthesis, reports, books**

Kijne, J, **Barron, J.**, Hoff, H., Rockström, J., Karlberg, L., Gowing, J., Wani, S.P. and Wichelns, D. 2009. Opportunities to increase water productivity in agriculture with special reference to Africa and South Asia. SEI, Stockholm (40 p)

**Barron, J** (editor). 2009. Rainwater harvesting: a lifeline for human well-being. United Nations Environment Programme, Nairobi/Stockholm Environment Institute, Stockholm (69 pp)

**Barron, J.**, S. Noel et al. 2008 Agricultural water management in smallholder farming systems: the value of soft components in meso-scale interventions. Working Paper, Stockholm Environment Institute (52pp)

Soussan, J. **Barron, J.**, Noel, S. (forthcoming). Water and poverty linkages in Africa: A literature review. Report commissioned by African Development Bank. Stockholm Environment Institute/African Development Bank (110pp)

**Barron, J.**, Fox, P. Koudenoukpo, J. 2007. Water and Poverty linkages. Senegal –a case study. Report commissioned by African Development Bank. Stockholm Environment Institute/African Development Bank (26 pp)

Soussan, J., Noel, S., **Barron, J.** 2007. Water and Poverty linkages. Tanzania –a case study. Report commissioned by African Development Bank. Stockholm Environment Institute/African Development Bank (18 pp)

Dowa, A.A., Noel, S., Shone, G. **Barron, J.** 2007. Water and Poverty linkages. Ethiopia –a case study. Report commissioned by African Development Bank. Stockholm Environment Institute/African Development Bank (22 pp)

Lundqvist, J., **Barron, J.**, Berndes, G., Berntell, A., Falkenmark, M., Karlberg, L., Rockström, J. 2006. *Water pressure and increases in food and bioenergy demand - implications of economic growth and options for de-coupling*. Report to the Swedish Environmental Advisory Council.