

## Deborah A. Bossio

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Lead Scientist Food Systems, the Nature Conservancy (TNC), Oakland, CA, 94609,  
USA

### Key Qualifications

Deborah Bossio is a research leader in food systems, climate and sustainable development, with a PhD in soil science and 25 years of experience living and working in Africa, Asia and the Americas. At the Nature Conservancy she is a Lead Scientist, and an integral member of the Global Strategy teams for Food Systems. In this role she leads the Conservancy's scientific work on 'Foodscapes', and in general ensures the relevance of research, and brings her expertise and partnerships to support and advance climate, agriculture, and conservation priorities and to better understand how we can scale our impact through improved soil management and food system transformation.

Prior to TNC, she was based in Kenya as the Director of Soils Research at the International Center for Tropical Agriculture (CIAT). There she oversaw the research strategy and science quality of a multidisciplinary team; also serving on senior management teams of CIAT and of the CGIAR program Water, Land and Ecosystems. As Theme Leader for Small-scale Water Management at the International Water Management Institute (IWMI) based in Ethiopia and Sri Lanka, she led research on smallholder water management and landscape approaches to sustaining ecosystems. Her work includes practical experience working with communities facing the challenges of climate variability, water scarcity and degraded soils.

Deborah's academic roots are in Soil Biology. She holds a M.Sc. and PhD in Soil Science from the University of California, Davis. She has published a wealth of research papers and emphasizes bringing science to practice. Deborah was recently identified as being in the top 2% of scientists in the world in her field.

## Education

- 1988 M.Sc. Soil Science, University of California, Davis, USA  
1996 PhD. Soil Science, University of California, Davis, USA

## Professional Experience

- 2021 to present Lead Scientist Food Systems, The Nature Conservancy (TNC)  
Lead Scientist, Soil Science, The Nature Conservancy (TNC)
- 2016 to present Director, Soils Research, and Leader, Restoring Degraded Landscapes, CGIAR Water, Land and Ecosystem (WLE) Program, International Center for Tropical Agriculture (CIAT), Nairobi, Kenya
- 2012 to 2016 Theme Leader, Productive Water Use, International Water Management Institute (IWMI), Addis Ababa, Ethiopia
- 2008 to 2012 Interim Director, Research Programs, International Water Management Institute, Colombo, Sri Lanka
- 2007 to 2008 Interim Director, Research Programs, International Water Management Institute, Colombo, Sri Lanka
- 2004 to 2008 Theme Leader, Land, Water and Livelihoods, and Coordinating Lead Author, 'Conserving land - protecting water,' Comprehensive Assessment of Water Management in Agriculture, International Water Management Institute, Colombo, Sri Lanka
- 2002 to 2012 Principal Soil Scientist, International Water Management Institute, Colombo, Sri Lanka
- 2000-2002 Soil Ecosystem Scientist, International Centre for Research in Agroforestry, Nairobi, Kenya
- 1998-2000 Soil Microbiologist, and Project Manager U.S. Geological Survey, California, USA

## Peer Reviewed Journal Articles and Assessments (selected)

- Sweet, S.K., Schuldt, J.P., Lehmann, J. *et al.* Perceptions of naturalness predict US public support for Soil Carbon Storage as a climate solution. *Climatic Change* **166**, 22 (2021). <https://doi.org/10.1007/s10584-021-03121-0>
- Roos, E., B. Bajzelj, C. Weil, E. Andersson, D. Bossio, L.J. Gordon. 2021. Moving beyond organic – a food system approach to assessing sustainable and resilient farming. *Global Food Security*. Vol 28. [doi.org/10.1016/j.gfs.2020.100487](https://doi.org/10.1016/j.gfs.2020.100487).
- Dynarski, K., D. Bossio, K. Scow. 2020. Dynamic stability of soil carbon: Reassessing the "permanence" of soil carbon sequestration. *Front. in Environ. Sci.*, 8: 514701. <https://doi.org/10.3389/fenvs.2020.514701>.
- Amelung, W., D. Bossio, W. de Vries, I. Kögel-Knabner, J. Lehmann, R. Amundson, P. Baveye, R. Bol, C. Collins, R. Lal, J. Leifeld, B. Minasny, G. Pan, K. Paustian, C. Rumpel, J. Sanderman, J.W. van Groenigen, B. van Wesemael, M. Wander, and A. Chabbi.. Towards implementing a global scale Soil Climate Mitigation Strategy. *Nature Communications*, 11: 5427 (2020) <https://doi.org/10.1038/s41467-020-18887-7>
- Heuvelink, G.B.M., M.E. Angelini, L. Poggio, Z. Bai, N.H. Batjes, H. Van Den Bosch, D. Bossio, S. Estella, J. Lehmann, G.F. Olmedo and J. Sanderman. 2020. Maching learning in space and time for modelling soil organic carbon change. *Eur J of Soil Sci.* 2020:1-17. <https://doi.org/10.1111/ejss.12998>.

- Lehmann, J., Deborah Bossio, Ingrid Koegel-Knabner, and Matthias Rillig. 2020. The concept and future prospects of soil health. *Nature Reviews Earth & Environment*. <https://doi.org/10.1038/s43017-020-0080-8>
- Bossio, D.A., Cook-Patton, S.C., Ellis, P.W., Fargione, J., Sanderman, J., Smith, P., Wood, S. Zomer, R.J., von Unger, M., Emmer, I.M. and Griscom, B.W. 2020. The role of soil carbon in natural climate solutions. *Nature Sustainability*. <https://doi.org/10.1038/s41893-020-0491-z>
- Bradford, M.A., C.J. Carey, L. Atwood, D. Bossio, E.P. Fenichel, S. Gennet, J. Fargione, J.R.B. Fisher, E. Fuller, D.A. Kane, J. Lehmann, E.E. Oldfield, E.M. Ordway, J. Rudek, J. Sanderman, and S.A. Wood. 2019. Soil carbon science for policy and practice. *Nature Sustainability*. doi:10.1038/s41893-019-0431-y
- Griscom, B.W., Lomax, G., Kroeger, T., Fargione, J.E., Adams, J., Almond, L., Bossio, D.A. Cook-Patton, S.C., Ellis, P.W. Kennedy, C.M. and Kiesecker, J. We need both natural and energy solutions to stabilize our climate. *Global Change Biology*. 22 March 2019 doi.org/10.1111/gcb.14612
- Vermeulen, S., Bossio, D.A., Lehmann, J., Luu, P., Paustian, K., Webb, C., Augé, F., Bacudo, I., Baedeker, T., Havbemann, T., Jones, C., King, R., Reddy, M., Sunga, I., von Unger, M., Warnken, M. (2019) Soil carbon for multiple benefits: a global agenda for action. *Nature Sustainability*, 2 (2–4). <https://doi.org/10.1038/s41893-018-0212-z>
- Zomer, Robert J.; Bossio, Deborah A.; Sommer, Rolf; Verchot, Louis V.. 2017. Global Sequestration Potential of Increased Organic Carbon in Cropland Soils. *Scientific Reports*. 7: 15554. DOI: <http://dx.doi.org/10.1038/s41598-017-15794-8>
- Mette Vaarst, Arthur Getz Escudero, M Jahi Chappell, Catherine Brinkley, Ravic Nijbroek, Nilson AM Arraes, Lise Andreasen, Andreas Gattinger, Gustavo Fonseca De Almeida, Deborah Bossio, Niels Halberg. 2017. Exploring the concept of agroecological food systems in a city-region context. *Agroecology and Sustainable Food Systems*. doi.org/10.1080/21683565.2017.1365321
- Woldearegay, Kifle; Tamene, Lulseged; Mekonnen, Kindu; Kizito, Fred; Bossio, Deborah. 2017. Fostering Food Security and Climate Resilience Through Integrated Landscape Restoration Practices and Rainwater Harvesting/Management in Arid and Semi-arid Areas of Ethiopia . In: Filho, Walter L., Gomez, Josep de T. (eds).2017.Rainwater-Smart Agriculture in Arid and Semi-Arid Areas. Springer New York, p. 37-57.
- Bousquet, F., A. Botta, L. Alinovi, O. Barreteau, D. Bossio, K. Brown, P. Caron, M. D'Errico, F. DeClerck, H. Dessard, E. Enfors Kautsky, C. Fabricius, C. Folke, L. Fortmann, B. Hubert, D. Magda, R. Mathevet, R. B. Norgaard, A. Quinlan and C. Staver. 2016. Resilience and development: mobilizing for transformation. *Ecology and Society* 21 (3):40. [online] URL: <http://www.ecologyandsociety.org/vol21/iss3/art40/>
- DeClerck, F., Jones, S., Attwood, S., Bossio, D., Girvetz, E., Chaplin-Kramer, B., et al. (2016). Agricultural ecosystems and their services: the vanguard of sustainability? *Curr. Opin. Environ. Sustain.* 23, 92–99. doi: 10.1016/j.cosust.2016.11.016
- Zomer R J, Neufeldt H, Xu J, Ahrends A, Bossio D, Trabucco A, van Noordwijk M and Wang M. *Global Tree Cover and Biomass Carbon on Agricultural Land: The contribution of agroforestry to global and national carbon budgets*. *Scientific Reports* 6, Article number: 29987 (2016). doi:10.1038/srep29987
- Cordingley, Justine E.; Snyder, Katherine Ann; Rosendahl, Judith; Kizito, Fred; Bossio, Deborah. 2015. Thinking outside the plot: addressing low adoption of sustainable land management in sub-Saharan Africa. *Current Opinion in Environmental Sustainability* . Elsevier B.V., 15: 35-40.
- Sommer, R., Mukalama, J., Kihara, J., Koala, S. Winowiecki, L., Bossio, D. 2015. Nitrogen dynamics and nitrous oxide emissions in a long-term trial on integrated soil fertility management in Western Kenya. *Nutrient Cycling in Agroecosystems*. 10.1007/s10705-015-9693-6.
- Verchot, L.V., N.L. Ward, J. Belknap, D.A. Bossio, A.N. Muchiru, D. Wall, and R.S. Reid. 2015. From bacteria to elephants: Effects of land-use legacies in the Serengeti - Mara ecosystem on biodiversity and ecosystem processes. In Sinclair, A.R.E., J.M. Metzger, K.L. Fryxell, and S.A.R. Mduma, (Eds.) *Serengeti IV: Sustaining Biodiversity in a Coupled Human-Natural System*. University of Chicago Press: 1427 E. 60th Street Chicago, IL USA.
- Sommer, R., Bossio, D. 2014 Dynamics and climate mitigation potential of soil organic carbon sequestration. *Journal of Environmental Management*. Vol 144, 83-87. DOI: 10.1016/j.jenvman.2014.05.017
- Wolde Mekuria, Andrew Noble, Oloth Sengtaheuanghoung, Chu Thai Hoanh, Deborah Bossio, Nivong

- Sipaseuth, Matthew McCartney & Simon Langan (2014) Organic and Clay-Based Soil Amendments Increase Maize Yield, Total Nutrient Uptake, and Soil Properties in Lao PDR, *Agroecology and Sustainable Food Systems*, 38:8, 936-961, DOI: [10.1080/21683565.2014.917144](https://doi.org/10.1080/21683565.2014.917144)
- Ginkel, Maarten van, Jeff Sayer, Fergus Sinclair, Aden Aw-Hassan, Deborah Bossio, Peter Craufurd, Mohammed El Mourid, Nasri Haddad, David Hoisington, Nancy Johnson, Carlos León Velarde, Víctor Mares, Andrew Mude, Ali Nefzaoui, Andrew Noble, K. P. C. Rao, Rachid Serraj, Shirley Tarawali, Raymond Vodouhe, Rodomiro Ortiz. 2013. An integrated agro-ecosystem and livelihood systems approach for the poor and vulnerable in dry areas, *Food Security*, 10.1007/s12571-013-0305-5.
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- Descheemaeker, K., Amede, T., Hailelassie, A., Bossio, D. 2011. Analysis of gaps and possible interventions for improving water productivity in crop livestock systems of Ethiopia. *Expl. Agric.* 47: 21-38.
- Herrero, M., P. K. Thornton, A. M. Notenbaert, S. Wood, S. Msangi, H. A. Freeman, D. Bossio, J. Dixon, M. Peters, J. van de Steeg, J. Lynam, P. Parthasarathy Rao, S. Macmillan, B. Gerard, J. McDermott, C. Seré and M. Rosegrant 2010. Smart investments in sustainable food production: revisiting the focus. *Science Policy Forum*.
- Bossio, D., Geheb, K., and Critchley, W. 2010. Managing water by managing land: addressing land degradation to improve water productivity and rural livelihoods. *Agricultural Water Management*, 97:536-542.
- John Dixon, Xiaoyun Li, Siwa Msangi, Betina Dimaranan, Tilahun Amede, Deborah Bossio, Hernan Ceballos, Bernardo Ospina, Reinhardt Howeler, Belum VS Reddy, Robert Abaidoo, Jagadish Timsina, Charles Crissman, Victor Mares, Robert Quiroz, Carlos Leon-Velarde, Mario Herrero, Michael Blummel, Michael Peters, Douglas White, Judit Szonyi. 2010. Feed, Food and Fuel: Competition and potential impacts on small crop-livestock-energy farming systems. An Assessment Commissioned by the CGIAR Systemwide Livestock Program.
- Herrero, M. P.K. Thornton, A. Notenbaert, S. Msangi, S. Wood, R. Kruska, J. Dixon, D. Bossio, J. van de Steeg, H. A. Freeman, X. Li and P. Parthasarathy Rao. 2010. Drivers of Change in Crop Livestock Systems and their Potential Impacts on Agro-ecosystems Services and Human Well-being to 2030. A study commissioned by the CGIAR Systemwide Livestock Programme. ILRI, Nairobi, Kenya.
- Bossio, D., 2009. Livestock and Water: Understanding the context based on the Comprehensive Assessment of Water Management in Agriculture. *LWP Special Issue. Rangeland Journal*, 31(2): 179-186.
- Smith, L., and Gurib-Fakim, A., Nazimi Acikgoz , Patrick Avato , Deborah Bossio , Kristie Ebi , André Gonçalves, Jack A. Heinemann, Thora Martina Herrmann, Jonathan Padgham, Johanna Pennarz, Urs Scheidegger, Leo Sebastian, Miguel Taboada, Ernesto Viglizzo. 2009. IAASTD Chapter 6. Options to enhance the impact of AKST on the development and sustainability goals. 2009. World Bank.
- Nienke Beintema, Deborah Bossio, Fabrice Dreyfus, Maria Fernandez, Ameenah Gurib-Fakim, Hans Humi, Anne-Marie Izac, Janice Jiggins, Gordana Kranjac-Berisavljevic, Roger Leakey, Washington Ochola, Balgis Osman-Elasha, Cristina Plencovich, Niels Roling, Mark Rosegrant, Erika Rosenthal, Linda Smith. 2009. IAASTD Global summary for decision makers. World Bank.
- Enfors, E.I., Gordon, L.J., Peterson, G.D., and Bossio, D. 2008. Making investments in dryland development work: Participatory scenario planning to increase the robustness of investments made in small-scale farming in the Makanya catchment, Tanzania. *Ecology and Society*.
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- Trabucco, A., Zomer, R.J., Bossio, D.A., van Straaten, O., and Verchot, L.V. 2008. Climate change mitigation through afforestation/reforestation: a global analysis of hydrologic impacts with four case studies. *Agriculture, Ecosystem and Environment*, 126: 81-97.
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- Bossio, D., Critchley, W., Geheb, K., van Lynden, G. and Mati, B., 2007, Conserving land - protecting water. In Molden, D. (Ed.) *Water for Food, Water for Life: A Comprehensive Assessment of Water Management in Agriculture*. Earthscan, London and International Water Management Institute, Colombo, pp. 551-583.
- Zomer, R., Bossio, D.A., Trabucco, A., Yuanjie, L., Gupta, D.C. and V.P. Singh. 2007. Water and trees: small holder agroforestry on irrigated lands in Northern India. IWMI Research Report No 122.
- Craswell, E., Bonnell, M., Bossio, D., Demuth, S., Giesen van der, N (eds). 2007 *Integrated Assessment of Water Resources and Global Change: A North-South Analysis*. Special issue *Water Resources Management* vol. 21. Reprinted by Springer, Dordrecht, The Netherlands, 373 pp.
- Namara, R.E., Hussain, I., Bossio, D., and Verma, S. 2007. Adoption and impacts of micro irrigation and improved crop production systems in South Asia: Critical Review and Implications for Poverty Alleviation'. *International Journal of Irrigation and Drainage*, 56:335-348.
- Zomer, R., Trabucco, A., van Straaten, O., Bossio, D. 2006. Carbon, Land and Water: A global analysis of the hydrologic dimensions of climate change mitigation through afforestation/reforestation within the Kyoto Protocol Clean Development Mechanism. IWMI Research Report 101, 38 pp.
- Pretty J, Noble A D, Bossio D, Dixon J, Hine R E, Penning de Vries F W T and Morison J I L. 2006. Resource-conserving agriculture increases yields in developing countries. *Environmental Science & Technology* **40** (4), 1114 -1119.
- Noble, A.D., Bossio, D.A., Penning de Vries, F.W.T., Pretty, J. and T.M. Thiyagarajan. 2006. 'Bright Spots': Impacts and Drivers. Comprehensive Assessment Research Report 13, Sri Lanka.
- Penning de Vries, Frits; Bossio, Deborah. 2006. Smallholder land and water management. In Giordano, M.; Rijsberman, F.; Saleth, R.M. (Eds.). 'More crop per drop:' Revisiting a research paradigm: Results and synthesis of IWMI's research, 1996- 2005. London, UK: IWA. pp.56-83
- Bossio, D.A., J. Fleck, K.M. Scow, and R. Fujii. 2006. Alteration of soil microbial communities and water quality in restored wetlands. *Soil Biology and Biochemistry* 38: 1223-1233.
- Bossio, D.A., M.S. Girvan, L. Verchot, J. Bullimore, T. Borelli, A. Albrecht, K.M. Scow, A.S. Ball, J.N. Pretty, and M.A. Osborn. 2005. Soil Microbial Community Response to Land Use Change in an Agricultural Landscape of Western Kenya. *Microbial Ecology*, 49:50-62.
- Bunemann, E.K., D.A. Bossio, P.C. Smithson, E. Frossard, A. Oberson. 2004. Microbial community composition and substrate use in a highly weathered soil as affected by crop rotation and P fertilization. *Soil Biology and Biochemistry*. 36: 889-901.
- Fleck, J.A., D.A. Bossio, and R. Fujii. 2004. Dissolved organic carbon and disinfection by-product precursor release from managed peat soils. *Journal of Environmental Quality*. 33:465-475.
- Bossio, D.A., W.R. Horwath, R. Mutters, and C. van Kessel. 1999. Methane pool and flux dynamics in a rice field following straw incorporation. *Soil Biology and Biochemistry*. 31: 1313-1322.
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- Bossio, D. A., and K.M. Scow. 1998. Impacts of carbon and flooding on soil microbial communities: phospholipid fatty acid profiles and substrate utilization patterns. *Microbial Ecology*. 35: 265-278.
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- Bossio, D.A., and K.G. Cassman. 1991. Traditional rainfed barley production in the Andean Highlands of Ecuador: soil nutrient limitations and other constraints. *Mountain Research and Development*, vol. 11(2), pp. 115-126.

## Books and Reports

- Bossio, D., Obersteiner M., Wironen M., Jung M., Wood S., Folberth C., Boucher T., Alleway H., Simons R., Bucien K., Dowell L., Cleary D., Jones R. 2021 Foodscapes: Toward Food System Transition, The Nature Conservancy, International Institute for Applied Systems Analysis, and SYSTEMIQ, ISBN: 978-0-578-31122-7
- Bossio, D. and Geheb, K. 2008. *Conserving Land, Protecting Water*. Comprehensive Assessment of Water Management in Agriculture, Oxford, UK, CABI Publishing, 235 pp.
- Bossio, D. and Geheb, K. 2008. Conserving Land, Protecting Water: an Introduction. 2008. In Bossio, D. A. and Geheb, K. (eds) *Conserving Land, Protecting Water: Bright Spots' Reversing the Trends in Land and Water Degradation*. Comprehensive Assessment of Water Management in Agriculture, Oxford, UK, CABI Publishing, pp xi –xviii..
- Trabucco, A., Bossio, D., and van Stratten, O. 2008. Carbon sequestration, land degradation and water. In Bossio, D. A. and Geheb, K. (eds) *Conserving Land, Protecting Water: Bright Spots' Reversing the Trends in Land and Water Degradation*. Comprehensive Assessment of Water Management in Agriculture, Oxford, UK, CABI Publishing, pp 83-106.
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- Bossio, D.A., Noble, A., Molden, D., and V. Nangia. 2008. Land degradation and water productivity in agricultural landscapes. In: Bossio, D. A. and Geheb, K. (eds) *Conserving Land, Protecting Water*. Comprehensive Assessment of Water Management in Agriculture, Oxford, UK, CABI Publishing, pp. 20-32.
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## Selected Presentations and invited panels

- Bossio, D.. Panelist. Race to Zero Soil as a Climate Solution. Nov 17 2020.
- Bossio, D. Keynote Enhancing investment in soil health and carbon storage: Frontiers for linking finance and carbon accounting. Sept 20, 2020
- Bossio, D. World Tour of Soil Carbon. Nature's Climate Hub, NY, NY 23 Sep, 2019
- Bossio, D. Incentives for soil carbon conservation and enhancement. 4per1000Conference, Poitiers, France 20 June 2019.
- Bossio, D. Soil as a Climate Solution. 4per1000Day COP24, Katowice, Poland, 13 Dec 2018
- Bossio, D. Panelist "Integrated Approaches: Successful Models to Tackle Complex Challenges" at the UC Davis and California Department of Conservation Symposium Managing Lands in a Changing Climate, 10 Sept 2018.
- Bossio, D. Soil Science for Action. La Maison Française symposium "Soil health practices: a common ground of experience and knowledge," Washington D.C. June 19 2018
- Bossio, D. Land Restoration and Climate. UN-DESA Division for Sustainable Development Sustainable Development Goal 15: Progress and Prospects *expert group meeting* 14-15 May 2018 United Nations Headquarters, New York.
- Bossio, D. Water funds, soils and agriculture. Water Funds Science Workshop, 24 April 2018, Denver, CO.
- Bossio, D. There is Hope in Soil. There is Hope in Soil Workshop, Danone side event alongside UNFCCC COP23, Bonn, Germany 16 Nov 2017.

Bossio, D. Nature Climate Solutions. Toward safe, effective, and sustainable use of negative emissions approaches. UNFCCC COP23 Side Event, Bonn, Germany 15 Nov 2017.

Smith, L. Clemens, L. Bossio, D., Veum K. Moore, J., Mylavarapu, R., Conveners. Managing for Conservation Outcome: Innovation for Soil Health and Ecosystem Services. A Special Cross-Society Technical Session, sponsored by The Nature Conservancy, Tampa, Florida, 23 Oct, 2017

Adams, J. and Bossio D. Lands of Opportunity. Sequestering Carbon in Soil, Addressing the Climate Threat Conference, Chantilly, France May 2017.

Soussana, J.F., Chotte, J.L., Saint-Macary, H., Wollenberg, L., Lal., Bossio D. 4 per 1000: Soils for Food Security and Climate International Research Program. Side Event UNFCCC COP22 Marrakesh, Morocco 17 Dec 2016.

Bossio, D. Soil organic carbon for food security and climate. Invited panellist, Unexplored big wins for climate change through landscape restoration, Global Landscape Forum, Marrakesh, Morocco 16 Dec 2016.

Bossio, D. Soil matters and is a key element for climate change and a world without hunger, invited panelist. 'Soil matters' Side Event German Pavillion, Blue Zone, UNFCCC COP21. Paris, France. Dec 2015.

Bossio, D. Seeing the big picture on land restoration: how research supports key decisions. Introduction to the session 'putting pledges into practice in Latin America – an early assessment of the Initiative 20x20 from science, policy, and finance perspectives. Global Landscape Forum, Paris, France. Dec 2015.

Bossio, D. Soil carbon for food security and climate, CGIAR perspectives. 'See you in Brussels,' CIRAD, Brussels, Belgium, Nov 2015.

Bossio, D., Snyder, K., Okolo, W. Soil policies for sustainable land management. GIZ side event, UNCCD COP 12, Ankara, Turkey, Oct 2015.

Bossio, D. Soil organic matter the bridge between the UNCCD and the UNFCCC. Rio Convention Pavilion, UNCCD COP12, Ankara, Turkey, Oct 2015.

Bossio, D.. Soil organic matter for climate change: boon or bane for food security? 2015 Wageningen Soil Conference, Wageningen, Aug 24, 2015.

Bossio, D.. Transforming the global landscape. Virtual briefing, Global Donor Platform for Rural Development, Jun 2014.

Bossio, D. Soils in the landscape. European Soil Partnership Plenary meeting. Ispra, Italy. May 2014.

Bossio, D and Janetschek, H.. Soil fertility management – toward a joint paradigm, facilitators. Global Soil Week, Berlin, Germany, Apr 2015.

Bossio, D., Kizito, F., Cordingley, J., Desta, L. Re-thinking transitions in rainfed farming landscapes. Global Land Project Open Science meeting, Berlin, Germany, Mar 2014.

Bossio, Deborah. Putting Soils Back on the Global Agenda, Key Note address, 10<sup>th</sup> Biannual Pedometrics Conference, Nairobi, Kenya, 26-31 August 2013.

Bossio, Deborah. Soils and resilience, much more than a slow variable. Plenary keynote. Tropentag, Göttingen, Germany. 19 September, 2012.

Bossio, Deborah. Why we need soils information. Global Soils Week, Berlin, Germany, 20<sup>th</sup> Nov 2012.

Bossio, Deborah.. Soils research in the CGIAR. Global Soils Week, Berlin, Germany, 21<sup>th</sup> Nov 2012

Bossio, D., Water management in agriculture, challenges and way forward. SAI Platform's 3<sup>rd</sup> Seminar on Water and Agriculture. Rotterdam, The Netherlands, 7 Oct, 2009.

Bossio, D. and Molden D., Improving Agricultural Productivity, Water Use Efficiency and Strengthening Rural Livelihoods". UN DESA Bangkok, Thailand, 28 Jan 2009.

Bossio, D. Livestock and Water: Understanding the context based on the Comprehensive Assessment of Water Management in Agriculture. Systemwide Livestock Program Workshop on "Drivers" and Biofuels/Trade-offs", April 29-30, 2008 Addis Ababa, Ethiopia.

- Bossio, D., Key note address: Agriculture water management: adapting to an uncertain future. IMAWESA 3<sup>rd</sup> Regional Conference on Agricultural Water Management in Eastern and Southern Africa, 15<sup>th</sup> to 19<sup>th</sup> September 2008, Addis Ababa, Ethiopia.
- Bossio, D., Impact of irrigation on poverty and the environment in Ethiopia and elsewhere. 2<sup>nd</sup> Forum on Irrigation & Water for Sustainable Development Program, December 15- 16, 2008. Addis Ababa Ethiopia.
- Bossio, D. Land, water and livestock. Key note address. Harnessing Water Productivity in Crop-livestock Systems of sub-Saharan Africa through Improved Livestock and Water Interventions. Addis Ababa, September 24-26, 2007.
- Bossio, D. Convener: Greening Upper Catchments, International Forum on Water and Food, November 13-17, 2006.
- Bossio, D. Conserving land, protecting water: benefits for smallholders and the environment. Turning Assessment Findings into Action. World Water Week, Stockholm, Sweden, August 2006.
- Bossio, D. Small scale water innovations for ecosystem restoration in semi-arid agroecosystems. Keynote, Young Water Professionals Seminar. World Water Week, Stockholm, Sweden, August 2006
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