**Supplementary Material: Effectiveness of agricultural water management technologies on rainfed cereals crop yield and runoff in semi-arid catchment: A meta-analysis**

References of case studies used in the meta-analysis review.

**References:**

Abraha, A.B. (2011). Italian ryegrass *(Lolium multiflorum*) growth response to water and nitrogen. Master’s Thesis. Faculty of Natural and Agricultural Sciences. University of Pretoria. South Africa.

Agobia, C.A. (1999). Enhancing Sustainable livelihoods in drought prone areas of Mudzi (Makaha Ward) and Gwanda (Gwanda Ward 19). Building on Adaptive strategies. Prepared for the Community Drought Mitigation program, Canadian International Development Agency (CIDA) Southern Africa Region. Community drought mitigation project. Final Project Report, Project No. 050/19284. Winnipeg, Canada.

Andersson, J.A., & Giller, K.E. (2012). Chapter 2: ‘On heretics and God’s blanket salesmen: contested claims for conservation Agriculture and the politics of its promotion in African smallholder farming’. In: Sumberg J and Thompson J (Eds.) Contested Agronomy: Agricultural Research in a Changing World. London: Earthscan.

Belder, P., Twomlow, S., & Hove, L. (2007). Early evidence of improved soil quality with conservation farming under smallholder farming conditions in Zimbabwe. Paper Presented at the ICID Conference, November 2007, Johannesburg, South Africa.

Botha, J.J., Joseph, L.F., Anderson, J.J., Mutizira, C., Motsatsing, B., & Mhike, A. (2012). Increasing rainfed water productivity towards food security through rainwater harvesting and conservation (Limpopo Basin). 13th WaterNet-WARFSA-GWP Symposium, Johannesburg, South Africa, November 2012.

Carter, D.C., Harris, D., Youngquist, J.B., & Persaud, N. (1992). Soil properties, crop water use and cereal yields in Botswana after additions of mulch and manure. Field Crop. Res. 30, 97-109.

Cooper, P.J.M., Dimes, J., Rao, K.P.C., Shapiro, B., Shiferaw, B., & Twomlow, S. (2008). Coping better with current climatic variability in the rain-fed farming systems of sub-Saharan Africa: An essential first step in adapting to future climate change? Agr. Ecosyst. Environ. 126, 24–35.

Dhliwayo, C., Makurira, H., Mupangwa, W., Love, D., & Twomlow, S. (2006). An on farm comparison of conservation agriculture practices and conventional farmer practices on soil hydrology and maize yield. 7th WaterNet-WARFSA-GWP-SA Symposium, Lilongwe, Malawi, 1-3 November 2006 Session 3: Water and Land.

Dlamini, M.C. (2012). Smallholder agricultural water interventions by different implementers in Limpopo, South Africa. MSc Thesis (Integrated Water Resource Management). University of Dar es Salaam, Tanzania.

Emongor, V.E., & Ramolemana, G.M. (2004). Treated sewage effluent (water) potential to be used for horticultural production in Botswana. Phys. Chem. Earth 29, 1101–1108.

Guzha, E. (2010). Piloting Integrated Rainwater Harvesting for Climate Change Mitigation and Adaptation –A Case study: Enhlanzeni District Mpumalanga South Africa. 11th WaterNet/WARFSA/GWP‐SA symposium, Victoria Falls, Zimbabwe.

Gwenzi, W., Gotosa, J., Chakanetsa, S., & Mutema, Z. (2008). Effects of tillage systems on soil organic carbon dynamics, structural stability and crop yields in irrigated wheat (triticum aestivum L.)-cotton (gossypium hirsutum L.) rotation in semi-arid Zimbabwe. Nutr. Cycl. Agroecosyst. 83 (3), 211-221.

Harris, D., Fry, G.J., & Miller, S.T. (1994). Microtopography and agriculture in semi-arid Botswana: Moisture availability, fertility and crop performance. Agri. Water Manage. 26, 133–148.

IIASA/FAO. (2012). Global Agro-ecological Zones (GAEZ v3.0). IIASA, Laxenburg, Austria and FAO, Rome, Italy.

Jones, E., & Nyamudeza, P. (1991). The relationship between rainfall and the yield of cotton, sorghum and maize grown in tied furrows and on the flat in the South East Lowveld of Zimbabwe. In: Proceedings of the Second Annual Scientific Conference. Mbabane, Swaziland. 7-9 October, 1991. pp. 100-107.

Jonga, M., Mariga, I.K., Achivinge, O., Munguri, M.W., & Rupende, E. (1996). Towards the improved management of organic and inorganic fertilizer in dryland maize production in the smallholder sector of Zimbabwe. Fifth Eastern and Southern Africa Regional Maize Conference. 3 -7 June 1996, pp 202–206.

Kronen, M. (1994). Water harvesting and conservation techniques for smallholder crop production systems. Soil Till. Res. 32, 71–86.

Lötter, L., Stronkhorst, L.D., & Smith, H.J. (2009). Report: Sustainable Land Management Practices of South Africa. Report Number: GW/A/2009/102. Pretoria, South Africa.

Magombeyi, M.S., & Taigbenu, A.E. (2011). An integrated modelling framework to aid smallholder farming system management in the Olifants River Basin, South Africa. Phys. Chem. Earth 36, 1012–1024.

Magombeyi, M.S., Morardet, S., Taigbenu, A.E., & Cheron, C. (2012). Food insecurity of smallholder farming systems in B72A catchment in the Olifants River Basin, South Africa. Afri. J. Agric. Res. 7 (2), 278–297.

Magombeyi, M.S., Rasiuba, T., & Taigbenu, A.E. (2009). Maize productivity under supplementary irrigation in the Olifants River Basin, South Africa. In Humphreys E and Bayot RS. (Editors) 2009. Increasing the productivity and sustainability of rainfed cropping systems of poor smallholder farmers. Proceedings of the Workshop on Increasing the Productivity and Sustainability of Rainfed Cropping Systems of Poor, Smallholder Farmers, Tamale, Ghana, 22–25 September 2008. The CGIAR Challenge Program on Water and Food, Colombo, Sri Lanka. 311pp. ISBN: 978-92-990053-4-7.

Maisiri, N., Senzanje, A., Rockstrom, J., & Twomlow, S.J. (2005). On farm evaluation of the effect of low cost drip irrigation on water and crop productivity compared to conventional surface irrigation system. Phys. Chem. Earth 30, 783–791.

Makanganise, A., Mabasa, S., Jasi, I., & Gatsi, T. (2001). Verification trials and farmer-managed demonstrations in integrated weed management under different tillage systems and fertility levels in smallholder farming areas of Zimbabwe. Presented at Seventh Eastern and Southern Africa Regional Conference, 11–15 February 2001.

Marongwe, L.S., Kwazira, K., Jenrich, M., Thierfelder, C., Kassam, A., & Friedrich, T. (2011). An African success: the case of conservation agriculture in Zimbabwe. Int. J. Agr. Sustain. 9 (1).

Mashingaidze, N., Madakadze, C., Twomlow, T., Nyamangara, J., & Hove, L. (2012). Crop yield and weed growth under conservation agriculture in semi-arid Zimbabwe Soil Till. Res. 124, 102–110.

Masikati, P. (2011). Improving the water productivity of integrated crop-livestock systems in the semi-arid tropics of Zimbabwe: an ex-ante analysis using simulation modeling. Ecology and Development series No. 78.

Mazvimavi, K. (2011). Socio-Economic Analysis of Conservation Agriculture in Southern Africa. Network Paper 02. Food and Agricultural Organization of the United Nations (FAO) and Regional Emergency Office for Southern Africa (REOSA). Rome, Italy.

Mazvimavi, K., & Twomlow, S. (2009). Conservation Farming for Agricultural Relief and Development in Zimbabwe,In Goddard T, Zoebisch MA, Gan YT, Ellis W, Watson A, Sombatpanit S (eds) 2008. No-Till Farming Systems. Special Publication No. 3, World Association of Soil and Water Conservation, Bangkok, ISBN: 978-974-8391-60-1, 544 pp.

Mazvimavi, K., Belder, P., Hove, L., & Twomlow, S.J. (2007). Assessment of sustainable uptake of conservation farming in Zimbabwe. International Crops Research Institute for the Semi-Arid Tropics, Matopos Research Station, Bulawayo, Zimbabwe.

Moroke, T.S., Dikinya, O., & Patrick, C. (2009). Comparative assessment of water infiltration of soils under different tillage systems in eastern Botswana. Phys. Chem. Earth 34, 316–323

Motsi, K.E., Chuma, E., & Mukamuri, B.B. (2004). Rainwater harvesting for sustainable agriculture in communal lands of Zi,mbabwe. Phys. Chem. Earth 29, 1069–1073.

Moyce, W., Mangeya, P., Owen, R., & Love, D. (2006). Alluvial aquifers in the Mzingwane catchment: Their distribution, properties, current usage and potential expansion. Phys. Chem. Earth 31, 988–994.

Mugabe, F.T. (2004). Evaluation of the benefits of infiltration pits on soil moisture in semi-arid Zimbabwe. Journal of Agronomy 3 (3), 188-190.

Munamati, M., & Nyagumbo, I. (2010). In situ rainwater harvesting using dead level contours in semi-arid southern Zimbabwe: Insights on the role of socio-economic factors on performance and effectiveness in Gwanda District. Phys. Chem. Earth 35, 699–705.

Munodawafa, A. (2007). Assessing nutrient losses with soil erosion under different tillage systems and their implications on water quality. Phys. Chem. Earth 32, 1135–1140.

Munodawafa, A. (2011). Maize grain yield as affected by the severity of soil erosion under semi-arid conditions and granitic sandy soils of Zimbabwe. Phys. Chem. Earth 36, 963–967.

Munodawafa, A., & Zhou, N. (2008). Improving water utilization in maize production through conservation tillage systems in semi-arid Zimbabwe. Phys. Chem. Earth 33, 757–761.

Mupangwa, W. (2009). Water and nitrogen management for risk mitigation in semi-arid cropping systems. PhD Thesis, 351pp. University of the Free State, Republic of South Africa.

Mupangwa, W., & Jewitt, G.P.W. (2011b). Simulating the impact of no-till systems on field water fluxes and maize productivity under semi-arid conditions. Phys. Chem. Earth. 36, 1004–1011.

Mupangwa, W., Dimes, J., Walker, S., & Twomlow, S. (2011a). Measuring and simulating maize (Zea mays L.) yield responses to reduced tillage and mulching under semi-arid conditions. Agr. Sci. 2(3), 167-174.

Mupangwa, W., Love, D., & Twomlow, S. (2006). Soil–water conservation and rainwater harvesting strategies in the semi-arid Mzingwane Catchment, Limpopo Basin, Zimbabwe. Phys. Chem. Earth 31, 893–900.

Mupangwa, W., Twomlow, S., & Walker, S. (2012a). Dead level contours and infiltration pits for risk mitigation in smallholder cropping systems of southern Zimbabwe Phys. Chem. Earth, Parts A/B/C, 47–48, 166–172.

Mupangwa, W., Twomlow, S., & Walker, S. (2012b). Reduced tillage, mulching and rotational effects on maize (Zea mays L.), cowpea (Vigna unguiculata (Walp) L.) and sorghum (Sorghum bicolor L. (Moench)) yields under semi-arid conditions. Field Crop. Res. 132, 139-148.

Mupangwa, W., Twomlow, S., Walker, S., & Hove, L. (2007). Effect of minimum tillage and mulching on maize (Zea mays L) yield and water content of clayey and sandy soils. Phys. Chem. Earth 32, 1127–1134.

Mutsamba, E.F., & Nyagumbo, I. (2010). Linkages between crop residues, termite prevalence, crop lodging and subsequent crop yield under conservation agriculture in Zimbabwe. Second RUFORUM Biennial Meeting 20 – 24 September 2010, Entebbe, Uganda.

Muza, L., Dhliwayo, H.H., & Twomlow, S.J. (1996). Dryland maize response to different combinations of tillage and weeding methods. Fifth Eastern and Southern Africa Regional Maize Conference. 3–7 June 1996. Pp 110–114.

Mwenge Kahinda, J-M., Rockström, J., Taigbenu, A.E., & Dimes, J. (2007). Rainwater harvesting to enhance water productivity of rainfed agriculture in the semi-arid Zimbabwe. Phys. Chem. Earth, Parts A/B/C, 32 (15–18), 1068–1073.

Mzezewa, J., & van Rensburg, L.D. (2011). Effects of tillage on runoff from bare clayey soil on a semi-arid ecotope in the Limpopo Province of South Africa. Water SA 37 (2) 165–172.

Mzezewa, J., Gotosa, J., & Shamhudzarira, Z. (1999). Optimizing Soil Water Use in Zimbabwe. In: van Duivenbooden N, Pala M, Studer C, Bielders CL (eds.). 1999. Efficient soil water use: the key to sustainable crop production in the dry areas of West Asia, and North and Sub-Saharan Africa. Proceedings of the 1998 (Niger) and 1999 (Jordan) workshops of the Optimizing Soil Water Use (OSWU) Consortium. Aleppo, Syria: ICARDA; and Patanchent, India: ICRISAT. pp 243-261.

Ncube, B., Magombeyi, M., Munguambe, P., Mupangwa, W., & Love, D. (2009a). Methodologies and case studies for investigating upstream‐downstream interactions of rainwater water harvesting in the Limpopo Basin. . In Humphreys E and Bayot R.S. (Editors) 2009. Increasing the productivity and sustainability of rainfed cropping systems of poor smallholder farmers. Proceedings of the Workshop on Increasing the Productivity and Sustainability of Rainfed Cropping Systems of Poor, Smallholder Farmers, Tamale, Ghana, 22–25 September 2008. The CGIAR Challenge Program on Water and Food, Colombo, Sri Lanka. 311pp. ISBN: 978-92-990053-4-7.

Ncube, B., Twomlow, S.J., Dimes, J.P., van Wijk, M.T., & Giller, K.E. (2009b). Resource flows, crops and soil fertility management in smallholder farming systems in semi-arid Zimbabwe. Soil Use Manage. 25, 78–90.

Ngwenya, P.T., Love, D., Mhizha, A., & Twomlow, S. (2006). Conserving soil water through grazing management, Insiza, Zimbabwe. 7th Waternet/WARFSA/GWP-SA symposium, Session 3: Water and Land. Lilongwe, Malawi, 1-3 November 2006. Lilongwe, Malawi.

Niquice, C.A. (2006). Multiplicative effect of rainwater for maize production in rainfed regime in the Chókwè District. Thesis (BSc). UEM-FAEF. 65pp. University of Eduardo Mondlane, Maputo, Mozambique. http://hdl.handle.net/10568/21364

Nkala, P. (2012). Assessing the impacts of conservation agriculture on farmer livelihoods in three selected communities in central Mozambique. PhD Thesis. University of Natural Resources and Life Sciences, Vienna, Austria.

Nyagumbo, I., Mutsamba, E.N., & Mhaka, L. (2010). Evaluating the effects of conservation agriculture and related technologies on soil biodiversity, crop and labour productivity in semi-arid Zimbabwe. Second RUFORUM Biennial Meeting 20 – 24 September 2010. Entebbe, Uganda.

Nyakatawa, E.Z., & Kamba, E. (1996). Productivity of maize and cowpea sole crop and intercrop systems on black vertisols of the south-east Lowveld of Zimbabwe. Fifth Eastern and Southern Africa Regional Maize Conference. 3–7 June 1996, pp123–125

Nyathi, P., & Campbell, B.M. (1995). Interaction effect of tree leaf litter, manure and inorganic fertiliser on the performance of maize in Zimbabwe. Afri. Crop Sci. J. 3 (4), 451–456.

Odhiambo, J.J.O. (2011). Potential use of green manure legume cover crops in smallholder maize production systems in Limpopo province, South Africa. Afri. J. Agric. Res. 6 (1), 107–112.

Odhiambo, J.J.O., Ogola, J.B.O., & Madzivhandila, T. (2010). Effect of green manure legume – maize rotation on maize yield and weed infestation levels. Afri. J. Agric. Res. 5 (8), 618–625.

Phahlane, M.O., Simalenga, T.E., & Mpandeli, N.S. (2010). Effects of rain water harvesting on maize yields in Sekhukhune Limpopo Province, South Africa. 11th WaterNet/WARFSA/GWP‐SA symposium, Victoria Falls, Zimbabwe.

Rasiuba, T. (2007). Water budget, water use efficiency in agriculture in Olifants Catchment. Thesis (MSc). Johannesburg, South Africa: University of the Witwatersrand. <http://www.waternetonline.ihe.nl/challengeprogram/D23%20Rasiuba%20water%20budget.pdf>

Rethman, N.F.G., Annandale, J.G., Keen, C.S., & Botha, C.C. (2007). Water use efficiency of multi-crop agroforestry systems, with particular reference to small scale farmers in semi-arid areas. WRC Report No. 1047/1/07. ISBN No 978-1-77005-579-7.

Riches, C.R. (2000). Moisture conservation through improved weed management in conservation tillage systems. Final Technical Report: R6655. DFID Crop Protection Programme.

Rocha, A., Starkey, P., Dionisio, A.C. (1991). Cattle production in smallholder farming systems in Southern Mozambique. Agr. Syst. 37, 55-75.

Rusere, S. (2005). An assessment of the multiple uses of small dams, water usage and productivity in the Limpopo Basin. Undergraduate Research Project. Department of Soil Science and Agricultural Engineering University of Zimbabwe. Harare, Zimbabwe.

Sasa, S.R. (2009). Mulches in smallholder maize systems in the Limpopo Province of South Africa: Untangling the effects of Nitrogen through experimentation and simulation. Master’s Thesis. School of Agriculture, food and Wine. Faculty of Sciences. University of Adelaide, Australia.

Short. (2012). Sorghum, Millet and Other Grains Collaborative Research Support Program. September 21, 2007 – September 30, 2012. Leader with Associates Cooperative Agreement Number: EEP-A-00-06-0016-00. Submitted to the U.S. Agency for International Development by The Management Entity University of Nebraska, USA.

Siambi, M. (2010). Increased food security and income in the Limpopo Basin through integrated crop, water and soil fertility options and public-private partnerships. PN1 Completion report: ICRISAT, CPWF. Limpopo Basin – Mozambique. Retrieved from: http://r4d.dfid.gov.uk/PDF/Outputs/WaterfoodCP/PN01\_ICRISAT\_ProjectReport\_May10\_final.pdf

Thierfelder, C., & Wall, P.C. (2010). 'Investigating Conservation Agriculture (CA) Systems in Zambia and Zimbabwe to Mitigate Future Effects of Climate Change'. J. Crop Improve. 24 (2), 113 – 121.

Twomlow, S., & Bruneau, P.M.C. (2000). The influence of tillage on semi-arid soil-water regimes in Zimbabwe. Geoderma 95, 33-51.

Twomlow, S., Hove, L. (2006). Is Conservation Agriculture an Option for Vulnerable Households? Briefing Note No. 4. ICRISAT – Bulawayo, Zimbabwe.

Twomlow, S., O’Neill, D., Sims, B., Ellis-Jones, J., Tahseen, J. (2002). An Engineering Perspective on Sustainable Smallholder Farming in Developing Countries. Biosyst. Eng. 81 (3), 355-362.

Twomlow, S., Rohrbach, D., Dimes, J., Rusike, J., Mupangwa, W., Ncube, B., Hove, L., Moyo, M., Mashingaidze, N., & Maphosa, P. (2009). Micro-dosing as a pathway to Africa’s Green Revolution: evidence from broad-scale on-farm trials. Nutr. Cycl. Agroecosyst. 88 (1), 3–15.

Twomlow, S.J., & Dhliwayo, H. (1999). Semi-arid maize yield responses to conservation tillage and weeding. Brighton Crop Protection Conference – Weeds, November 1999, Farnham, Surrey, UK: BCPC.

Uaiene, R.N. (2004). Maize and sorghum technologies and the effects of marketing strategies on farmers’ income in Mozambique. MSc Thesis. Purdue University. West Lafayette, United States.

Vogel, H. (1992). Effects of conservation tillage on sheet erosion from sandy soils at two experimental sites in Zimbabwe.Appl. Geogr. 12, 229–242.

Willcocks, T.J. (1984). Tillage Requirements in Relation to Soil Type in Semi-arid Rainfed Agriculture. J. Agric. Engineering Res. 30, 327–336.

Willcocks, T.J., & Twomlow, S.J. (1993). A review of tillage methods and soil and water conservation in southern Africa. Soil Till. Res. 27, 73-94.

Woltering, L. (2005). Estimating the influence of on-farm Conservation Practices on the Water Balance: Case of the Mzinyathini Catchment in Zimbabwe. Master’s Thesis. Faculty of Civil

Yokwe, S. (2005). Investigation of the economics of water as used by smallholder irrigation farmers in South Africa’. Master’s Thesis, Pretoria, South Africa: University of Pretoria.

Yokwe, S. (2009). Water productivity in smallholder irrigation schemes in South Africa. Agr. Water Manage. 96, 1223–1228.

**Table 1**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Group** | **Highest study years** | **Modell-ing** | **On-station** | **On-farm** | **References** |
| A | 5 | 0 | 30 | 53 | Botha et al. 2012; Dhliwayo et al. 2006; Gwenzi et al. 2008; Kronen 1994; Makanganise et al. 2001; Marongwe et al. 2011; Mashingaidze et al. 2012; Mupangwa 2009; Mupangwa et al. 2007; Mupangwa et al. 2006; Muza et al. 1996; Mzezewa et al. 1999; Ncube et al. 2009a; Nyagumbo et al. 2010; Riches 2000; Siambi 2010; Thierfelder and Wall 2010; Twomlow et al. 1999; Vogel 1994; Willcocks 1984 |
| B | 5 | 39 | 63 | 182 | Agobia 1999; Belder et al. 2007; Botha et al. 2012; Dhliwayo et al. 2006; Guzha 2010; Gwenzi et al. 2008; Jones and Nyamudeza 1991; Kronen 1994; Lötter et al. 2009; Magombeyi and Taigbenu 2011; Magombeyi et al. 2012; Marongwe et al. 2011; Mashingaidze et al. 2012; Mazvimavi 2011; Motsi et al. 2004; Mugabe 2004; Munamati and Nyagumbo 2010; Mupangwa et al. 2007; Mupangwa et al. 2006; Mupangwa et al. 2007; Mupangwa et al. 2011a; Mupangwa et al. 2012b; Muza et al. 1996; Mzezewa and van Rensburg 2011; Mzezewa et al. 2011; Mzezewa et al. 1999; Mzezewa et al. 2011; Ncube et al. 2009a; Ngwenya et al. 2006; Niquice 2006; Nkala 2012; Nyagumbo et al. 2010; Phahlane et al. 2010; Riches 2000; Siambi 2010; Twomlow and Dhliwayo 1999; Twomlow and Hove 2006; Twomlow et al. 1999; Twomlow et al. 2002; Twomlow et al. 2009; Vogel 1992; Vogel 1994; Willcocks and Twomlow 1993; Willcocks 1984 |
| C | 37 | 1 | 103 | 11 | Agobia 1999; Lötter et al. 2009; Mashingaidze et al. 2012; Mupangwa et al. 2011b; Mupangwa et al. 2012a; Ncube et al. 2009a; Nyathi and Campbell 1995; Sasa 2009; Siambi 2010; Twomlow et al. 2009; Twomlow et al. 1999 |
| D | 37 | 9 | 58 | 196 | Abraha 2011; Carter et al. 1992; Cooper et al. 2008; Dimes et al. 2008; Harris et al. 1994; Jonga et al. 1996; Makanganise et al. 2001; Mashingaidze et al. 2012; Masikati 2011; Mazvimavi and Twomlow 2009; Munodawafa 2007; Munodawafa 2011; Muza et al. 1996; Mwenge Kahinda et al. 2007; Ncube et al. 2009b; Nyathi and Campbell 1995; Odhiambo 2011; Phahlane et al. 2010; Sasa 2009; Siambi 2010; Twomlow and Bruneau 2000; Twomlow and Dhliwayo 1999; Twomlow et al. 2009 |
| E | 15 | 18 | 15 | 40 | Abraha 2011; Dlamini 2012; Emongor and Ramolemana 2004; Magombeyi and Taigbenu 2011; Magombeyi et al. 2009; Maisiri et al. 2005; Moyce et al. 2006; Mwenge Kahinda et al. 2007; Rasiuba 2007; Rusere 2005; Woltering 2005; Yokwe 2005; Yokwe 2009 |
| F | 6 | 0 | 57 | 110 | Agobia 1999; Gwenzi et al. 2008; IIASA- FAO 2000; Masikati 2011; Mupangwa et al. 2012a; Mzezewa et al. 1999; Mzezewa et al. 2011; Ncube et al. 2009a; Ngwenya et al. 2006; Odhiambo et al. 2010; Odhiambo 2011; Phahlane et al. 2010; Rethman et al. 2007; Rocha et al. 1991; Short 2012; Siambi 2010; Twomlow et al. 2009; Uaiene 2004; Vogel 1992 |
| G | 37 | 3 | 211 | 231 | Abraha 2011; Andersson and Giller 2012; Botha et al. 2012; Kronen 1994; Marongwe et al. 2011; Mazvimai and Twomlow 2009; Mazvimavi and Twomlow 2009; Mazvimavi et al. 2007; Moroke et al. 2009; Munodawafa and Zhou 2008; Munodawafa 2007; Mupangwa et al. 2006; Mupangwa et al. 2012a; Mupangwa et al. 2012b; Mutsamba and Nyagumbo 2010; Mwenge Kahinda et al. 2007; Mzezewa et al. 1999; Mzezewa et al. 2011; Ncube et al. 2009a; Nyagumbo et al. 2010; Nyakatawa and Kamba 1996; Nyathi and Campbell 1995; Odhiambo 2011; Phahlane et al. 2010; Riches 2000; Sasa 2009; Siambi 2010; Twomlow et al. 2009; Uaiene 2004; Vogel 1992; Vogel 1994; Riches 2000 |