

Gardening with Less Water: Access to the Literature

David A. Bainbridge

This supplement is provided for my book *Gardening with Less Water*, December 2015. Storey Publ.

Preface: Running Out of Water

Part 1: Super-Efficient Irrigation Systems

Chapter 1. Buried Clay Pots (Ollas)

Chapter 2. Porous Capsules

Chapter 3. Deep Pipes

Chapter 4. Wicks

Chapter 5. Porous Hose

Chapter 6. Buried Clay Pipe

Chapter 7. Tree Shelters

Part 2: Taking It to the Next Level

Chapter 8. Waterwise Gardening Tips

Chapter 9. Rainwater Harvesting

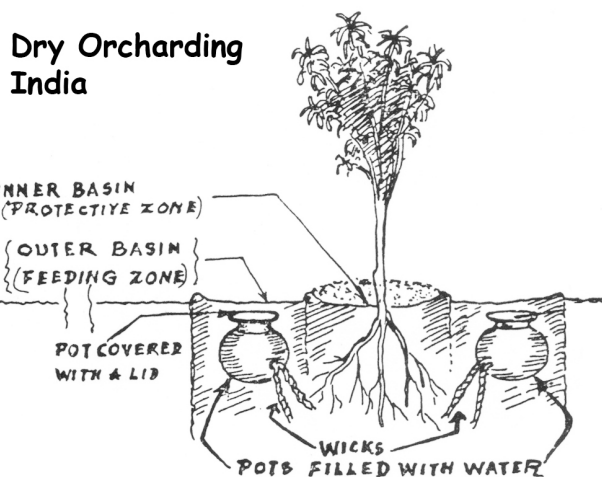
Chapter 10. Landscaping for Water Catchment

Chapter 11. Developing a Plan for Your Patio, Garden, Home, or Farm

Conclusion: Our Water Future

Appendices

Review other free resources at:http://works.bepress.com/david_a_bainbridge



Literature notation key:

volume (issue number):pages

Running out of water

Nigel W. Arnell. 1999. Climate change and global water resources. *Global Environmental Change*. 9:S31-S49.

Taikan Oki and Shinjiro Kanae. 2006. Global hydrological cycles and world water resources. *Science*. 313:1068-1072.

Paul Raskin, Peter Gleick, Paul Kirshen, Gil Pontius and Ken Strzepek. 1997. *Water Futures: Assessment of Long-range Patterns and Problems*. Background Report for the Comprehensive Assessment of the Freshwater Resources of the World. Stockholm Environment Institute.

Mark Rosegrant, Ximing Cai, and Sarah Cline. 2002. *World water and food to 2025: Dealing with scarcity*. IFPRI-2020 Vision/International Water Management Institute book. International Food Policy Research Institute.

B. Lynn Ingram and Frances Malamud-Roam. 2013. *The West Without Water*. University of California Press.

Robin Clarke and Jannet King. 2004. *The Water Atlas*. The New Press.

Miguel A. Altieri and Parviz Koohafkan. 2008. *Enduring Farms: Climate Change, Smallholders and Traditional Farming Communities*. Environment and Development Series 6. Third World Network, Penang, Malaysia.

Joana Rosadoi and Maria Manuela Moraisii. 2010. Water management strategies to combat scarcity in Semi-arid and Mediterranean regions: differences and similarities. 2nd International Conference: Climate, Sustainability and Development in Semi-arid Regions August 2010, Ceará Convention Center Fortaleza, Ceara - BRAZIL www.icid18.org/files/articles/858/1277945548.pdf

United States Drought Monitor <http://droughtmonitor.unl.edu/>

Water.org <http://water.org/water-crisis/water-facts/water/>

Dawn of a thirsty century <http://news.bbc.co.uk/2/hi/science/nature/755497.stm>

Christopher R. Schwalm, Christopher A. Williams, Kevin Schaefer, Dennis Baldocchi, T. Andrew Black, Allen H. Goldstein, Beverly E. Law, Walter C. Oechel, Kyaw Tha Paw U and Russel L. Scott. 2012. Reduction in carbon uptake during turn of the century drought in western North America. *Nature Geoscience* 29 July. DOI: 10.1038/NGEO1529

S. Mahendra Dev. 2012. *Small Farmers in India: Challenges and Opportunities*. Indira Gandhi Institute of Development Research, Mumbai, June. <http://www.igidr.ac.in/pdf/publication/WP-2012-014.pdf>

Jikun Huang, Xiaobing Wang and Huanguang Qiu. 2012. *Small-scale farmers in China in the face of modernisation and globalisation*. London. <http://pubs.iied.org/16515IIED.html>

Super-efficient irrigation

David A. Bainbridge. 2014. Inoculation response by irrigation type. *Tree Planters' Notes* 57(2):44-52.

David A. Bainbridge. 2014. Get started with more efficient irrigation systems. *Permaculture News* (Australia) April, 8 pages.

David A. Bainbridge. 2006. Beyond drip irrigation – hyper efficient irrigation systems. *Proceedings American Society of Agricultural and Biological Engineering Annual International Meeting*, Portland, Oregon. ASABE #062073. St. Joseph, Michigan 10 p.

David A. Bainbridge. 2013. Super efficient irrigation. *Ceramics Monthly*. November. 29-30.

David A. Bainbridge. 2002. Alternative irrigation systems. *Ecological Restoration*. 20(1):23-30.

David A. Bainbridge. 1993. Irrigation for remote sites. Soil Ecology and Restoration Group, San Diego State University for CalTrans. 18 pages

Thomas-M. Stein Sakia.org. Virtual library of irrigation. <http://www.vl-irrigation.org/cms/index.php?id=131&type=5>

Atef Hamdy. 2007. Water use efficiency in irrigated agriculture: an analytical review. pp 9-19 In N. Lamaddalena, M. Shatanawi, M. Todorovic, C. Bogliotti, R. Albrizio, eds. Options méditerranéennes, Series B, No. 57 Water Use Efficiency and Water Productivity. CIJEAM, Paris.

Andrés Martínez de Azagra Paredes and Jorge del Río San José. 2012. Los riegos de apoyo y de socorro en repoblaciones forestales. *Foresta*. 54:32-44.

Buried clay pot “olla” irrigation

David A. Bainbridge. 2001. Buried clay pot irrigation. *Agricultural Water Management*. 48(2):79-88.

David A. Bainbridge, with Bill and Athena Steen. 1991, 1993, 1998. Super -efficient irrigation with buried clay pots. USIU Environmental Studies/Canelo Project. 5 p.

David A. Bainbridge. 1989. Pitcher irrigation for small family farmers. *International Development Digest*. 2(4):4.

David A. Bainbridge. 1988. Clay pots for efficient irrigation. *International Ag-Sieve* 1(1):7.

David A. Bainbridge. 1988. Pitcher irrigation. *Drylander* 2(1):3.

David A. Bainbridge. 1987. Pitcher irrigation. *Cookstove News*. 7(4):7.

M. H. Mari Gowda. 1974. Dry orcharding. *The Lal Baugh*. 19(1/2):1-85.

R. C. Mondal. 1974. Farming with a pitcher. *World Crops*. 26:94-97.

Centro de Investigaciones Hidráulicas e Hidrológicas. 1984. Investigación sobre Sistemas de Riegos con Potes de Arcilla. Panamá, Universidad Tecnológica de Panamá.

R. C. Mondal. 1983. Salt tolerance of tomato grown around earthen pitchers. *Indian Journal of Agricultural Science*. 53(5):380-382.

R. C. Mondal. 1984. Pitcher farming techniques for use of saline waters. *Annual Report Central Soil and Salinity Research Institute* 1983:18-19.

S. E. Reddy and S. N. Rao. 1980. A comparative study of pitcher and surface irrigation methods on snake gourd. *Indian Journal Horticulture, Bangalore*. 37(1):77-81.

- Altaf A. Siyal, A. A., M. Th. Van Genuchten and T. H. Skaggs. 2009. Performance of pitcher irrigation system. *Soil Science*. 174(6):312-320.
- Sheng-han Shih. 1974. Fan Sheng-chih Shu: An Agriculturist Book of China written by Fan Sheng-chih in the First Century BC. Science Books, Peking. pp. 36-37.
- K. N. Balakumaran, J. Mathew, G. R. Pillai and K. Varghese. 1982. Studies on the comparative effect of pitcher irrigation and pot watering in cucumber. *Agricultural Research Journal Kerala*. 20(pt2):65-67.
- Mahood Iqbal Sheik'h and B. H. Shah. 1983. Establishment of vegetation with pitcher irrigation. *Pakistan Journal of Forestry*. 33(2):75-81.
- Thomas-M. Stein. 1997. The influence of evaporation, hydraulic conductivity, wall-thickness, and surface area on the seepage rates of pitchers for pitcher irrigation. *Journal of Applied Irrigation Science*. 321:65-83.
- Thomas-M. Stein. 1998. Erarbeitung und überprüfung von entwurfskriterien für Gefäßbewässerungsanlagen. *Journal of Agriculture in the Tropics and Subtropics*. #66. 174 p. (this is excellent) Approx. translation -- Development and verification of design criteria for porous clay irrigation systems.
- Tibebu Tesfaye, Kindie Tesfaye and Kebede Woldetsadik. 2011. Clay pot irrigation for tomato production in the north east semiarid region of Ethiopia. *Journal of Agriculture and Rural Development in the Tropics and Subtropics*. 112(1):11-18.
- P. Vasudaven Sen, A. Thapliyal, P. K. Sen, M. G. Dastidar and P. Davies. 2011a. Buried clay pot irrigation for efficient and controlled water delivery. *Journal of Scientific and Industrial Research*. 70 (August):645-652.
- P. Vasudaven Sen, B. Kaphaliya, R. K. Srivastava, M. Tandon, S. N. Singh and P. K. Sen. 2011b. Buried clay pot irrigation using saline water. *Journal of Scientific and Industrial Research*. 70(August): 653-655.
- Alderaldo de Souza Silva et al. 1982. Irrigación por potes de barro: descripción del método y pruebas preliminares. *Boletín de Investigación*. No. 10, EMBRAPA-CPATSA.
- J. A. Okalebo, P. G. Home and F. K. Lenga. 1995. Pitcher irrigation: a new irrigation technique to curb the effects of salinization. Pp 15-21 in *Proceedings of the 7th Conference of the Society of Agricultural Engineers on Engineering the Economy*, Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya.
- M. M. Abu-Zreig, Y. Abe and H. Isoda. 2006. The auto-regulative capability of pitcher irrigation system. *Agricultural Water Management*. 85:272-278.
- M. H. Alemi. 1980. Distribution of water and salt in soil under trickle and pot irrigation regimes. *Agricultural Water Management*. 3:195-203.

- Neelkanth Bhatt, B. Kanzariya, A. Motiani and B. Pandit. 2013. An experimental investigation on pitcher irrigation technique on alkaline soil with saline irrigation water. *International Journal of Science and Technology*. 2(6):206-212.
- K. Z. Khan. 2007. Determination of effect of hydraulic conductivity and size of pitcher on the radius of soil wetting front. *Sindh Agriculture University, Tandojam, Pakistan* 83 p.
- S. E. Reddy and S. N. Rao. 1980a. A comparative study of pitcher and surface irrigation methods on snake gourd. *Indian Journal Horticulture*. Bangalore 37(1):77-81.
- S. E. Reddy and S. N. Rao. 1980b. Response of bitter melon (*Momordica charantia* L.) to the buried clay pot and basin system of irrigation. *South Indian Horticulture*. 31(2/3):117-120.

Porous capsule irrigation

- Lon A. Hawkins. 1910. The porous clay cup for the automatic watering of plants. *Plant World*. 13(9): 220-227.
- Burton E. Livingston. 1918. Porous clay cones for the auto-irrigation of potted plants. *Plant World*. 21(8):202-208.
- Lorenzo A. Richards. 1931. Capillary conduction of liquids through porous mediums. *Physics*. 1:318-333.
- Alderaldo de Souza Silva, Dinarte Aeda da Silva, Hans Raj Gheyi and Everaldo R. Porto. 1984. Viability of irrigation by porous capsule method in arid and semi-arid regions. *Pesquisa Agropecuaria Brasileira*. 19(10):1257-1265.
- Dinarte Aeda da Silva, Hugo O. Carvalho Guerra, Alderaldo de Souza Silva, and Hans Raj Gheyi. 1982. Irrigation by porous capsules under hydrostatic pressure. *Proceedings International Congress of Soil Science*. 12. 187-188.
- H. Ghorbani Vaghei, H. A. Bahrami, P. Alizadeh, and Dr. F. Nasiri. 2012. Hydraulic characteristics of porous clay capsules and their effects on soil water distribution. *IWRJ* 5(9). In Persian. <http://journals.sku.ac.ir/page/issue-main-page.html?issueId=10608>
- Akihiro Isoda, H. Konishi, P. Wang, P. and Z. Li. 2007. Effects of different irrigation methods on yield and water use efficiency of sugar beet (*Beta vulgaris*) in the arid area of China. *HortResearch - Chiba University*. (Mar). 61:7-10.
- H. Perea Estrada. 1993. Design and construction of a low pressure irrigation system with porous clay capsules. Thesis Agricultural Engineering, Colegio de Postgraduados, Montecillo, Mexico. 80 p.
- OAS Unit of Sustainable Development and Environment. 1997. 4.2 Small-scale clay pot and porous capsule irrigation and 5.7 Clay pot and porous capsule irrigation in Brazil in *Source Book of Alternative Technologies for Freshwater Augmentation in Latin America and the Caribbean* of the

- Organization of American States, Washington, D.C. www.oas.org/DSD/publications/Unit/oea59e/ch01.htm#preface Accessed March 19, 2012. (also reissued by UNEP, 1999).
- Rodriguez Pável Vargas, C. Manuel Peña, A. Jorge Gonzáles and C. Geisy Hernández. 2008. Obtención de cápsulas porosas para el beneficio de cultivos protegidos. *Revista Ciencias Técnicas Agropecuarias*. 17(3):14-17.
- Lorenzo A. Richards and H. L. Blood. 1934. Some improvements in auto-irrigation apparatus. *Journal of Agricultural Research*. 49(2):115-121.
- Darrol Shillingburg. 2012. Porous clay capsule irrigation. 4p. www.darrolshillingburg.com/GardenSite/PorousClayCapsuleIrrigation.html Accessed 3/21/2012
- Dinarte Aeda da Silva. 1980. Irrigação por capsula porosa: características e avaliação do método sob pressão hidrostática. EMBRAPA-CPATSA, Petrolina, PE, Brasil. Campina Grande: UFPB-CCT. Dissertacao Mestrado.
- Dinarte Aeda da Silva. 1979. Características hidráulicas e avaliação por cápsulas porosas: plano de trabalho. EMBRAPA-CPATSA, Petrolina, PE, Brasil. 4p. <http://ainfo.cnptia.embrapa.br/digital/bitstream/CPATSA/32434/1/OPB1521.pdf> Accessed March 20, 2012.
- Dinarte Aeda da Silva, H. O. Carvalho Guerra, S. A. de Silva and H. R. Gheyi. 1988. Irrigation by porous capsules under hydrostatic pressure. *Zeitschrift fuer Kulturtechnik und Flurbereinigung*. 29(1):27-35.
- Dinarte Aeda da Silva, J. V. de Araujo, S. A. de Silva and H. R. Gheyi. 1985a. Irrigação por cápsula porosa I. Confeccao de capsulas e ensaios de liberacao de aqua. *Pesquisa Agropecuaria Brasileira*. 20(6):693-698.
- Dinarte Aeda da Silva, S. A. de Silva and H. R. Gheyi. 1985b. Viability of irrigation by porous capsule method in arid and semi-arid regions. pp. 753-764 In *Transactions 12th Congress on Irrigation and Drainage*. International Commission on Irrigation and Drainage, New Delhi, India.
- Dinarte Aeda da Silva, S. A. de Silva, H. R. Gheyi and E. R. Porto. 1984. Viability of irrigation by porous capsule method in arid and semi-arid regions. *Pesquisa Agropecuaria Brasileira*. 19(10): 1257-1265.
- Dinarte Aeda da Silva, H. O. Carvalho Guerra, S. A. de Silva, and H. R. Gheyi. 1982. Irrigation by porous capsules under hydrostatic pressure. *Proceedings International Congress of Soil Science*. 12:187-188.
- Dinarte Aeda da Silva and E. R. Porto. 1982. Utilização e conservação dos recursos hídricos em áreas rurais do trópico semi-árido do Brasil. *Documentos*, 14. EMBRAPA-CPATSA. Petrolina, PE, Brasil.
- Dinarte Aeda da Silva, Alderaldo de Souza Silva, and H. R. Gheyi. 1981a. Irrigação por cápsulas porosas. III: avaliação técnica do método por pressão hidrostática. In *Pequena Irrigação para o trópico semi-arido: vazantes e cápsulas porosas*. *Boletim de Pesquisa*, EMBRAPA-CPATSA. 3:20-42.

Dinarte Aeda da Silva, H. R. Gheyi, Alderaldo de Souza Silva and A. A. Magalhaes. 1981b. Irrigação por cápsulas porosas IV. Efeitos das diferentes pressões hidrostáticas e populações de plantas sobre a produção do milho. Boletim de Pesquisa. 3:43-59.

Alderaldo de Souza Silva. and A. A. Magalhães. 1978. Efeito da irrigação mínima na produtividade de milho e eficiência no uso de água. EMBRAPA-CPATSA, Petrolina, PE, Brasil.

T. S. Pielis. 1982. Irrigação por Cápsulas Porosas: Efeito do Tipo de Água e Frequência de Irrigação sobre o Funcionamento do Sistema. Santa Maria, RS, Brazil, EMBRAPA-CPATSA.

E. Díaz Santos. 1977. Determinación de la evapotranspiración en trigo mediante riego por succión. Colegio de Postgraduados de Chapingo. Chapingo, México.

Porous ceramics <http://www.soilmoisture.com/pdf/ceramics.pdf>

Deep pipe irrigation

David A. Bainbridge. 2006. Deep pipe irrigation. Overstory Agroforestry Journal #175. 6 p.

David A. Bainbridge, Matthew Fidelibus and Robert A. MacAller. 1995. Plant establishment in arid ecosystems. Restoration and Management Notes. 13(2):190-197.

David A. Bainbridge and Ross A. Virginia. 1989. Irrigation trials. Revegetation in the Colorado Desert. Systems Ecology Research Group, San Diego State University, San Diego, CA 16 pp.

T. J. Mathew. 1987. Cheap micro-irrigation by plastic pipes. In: Simple Methods of Localized Water Conservation, 22. Society for Water and Environmental Conservation, Areepalchy, Kerala, India.

H. M. Sawaf. 1980. Attempts to improve the supplementary irrigation systems in orchards in some arid zones according to the root distribution patterns of fruit trees. Pp. 252-259 In Rainfed Agriculture in the Near East and North Africa. FAO. Rome, Italy.

Wick irrigation

David A. Bainbridge. 2012. Wick irrigation. The Overstory Agroforestry Journal. #249

Dawn Berkelaar. 2012. Wick irrigation. Echo Development Notes. 115:4

Pedro Ochoa Mena. 2010. Wick irrigation, a sustainable technology for everyone. Radio Baracoa. Cuba.

M. H. Mari Gowda. 1974. Dry orcharding. The Lal Baugh 19(1/2):1-85.

Editor. 1960. Self-watering pot. Popular Science. 160(1):143.

Editor. 1955. A long drink. Popular Science. Oct 167(4):170.

Editor. 1939. Self-watering flowerpot. Popular Science. 134(5):137.

Editor. 1930. Lamp wick solves problem of citrus irrigation. Popular Mechanics. Nov 54(5):736.

Jeff Million, Tom Yeager and Claudia Larsen. 2007. Water use and fertilizer response of Azalea using several no-leach irrigation methods. HortTechnology. 17(1):21-24.

C. A. Neal and R. W. Henley. 1992. Use and runoff comparisons of greenhouse irrigation systems. Proceedings Florida State Horticultural Society. 105:191-194.

Matthew W. Fidelibus and David A. Bainbridge. 1994. The effect of containerless transport on desert shrubs. Treeplanter's Notes. Summer 45(2):82-85.

Porous hose irrigation

Orsel E. Robey. 1934. Porous Hose Irrigation. Extension Bulletin 133. Michigan State College. . (this is on line - interesting to see it so long ago - canvas with coating)

A. M. Akhoond-Ali and M. Golabi. 2008. Subsurface porous pipe irrigation with vertical option as a suitable irrigation method for light soils. Asian Journal of Scientific Research 1(3):180-192.

Mona Golabi and A. M. Akhoonali 2007. Subsurface leaky pipe irrigation with vertical option as a suitable irrigation method for light soils. Proceedings: Management of tropical sandy soils for sustainable agriculture A holistic approach for sustainable development of problem soils in the tropics. 27 Nov-2 Dec, 2005. Khon Kaen, Thailand. FAO Regional Office for Asia and the Pacific. 536 p. www.fao.org/docrep/010/ag125e/ag125e00.htm

M. Khoramian and S. M. Mirlatifi. 2000. Evaluation of Tarava porous pipes performance. Iranian Journal of Soil and Water Sciences. 14(2):187-197.

Alireza Janani, T. Sohrabi and H. Dehghanisanij. 2011. Pressure variation impact on discharge characteristics of porous pipes. 8th ICID International Micro-Irrigation Congress. Tehran, Iran 2011. Iranian National Committee on Irrigation & Drainage. www.irncid.org/GetFileArticles.aspx?FilePrm=8803_40860.pdf Access Feb 13, 2012

Mohd Amin Bin Mohd Soom, M. Ahmin, C. W. Lim and A. A. Zakaria. 1998. Flow characteristics of a porous pipe irrigation lateral. Pertanika Journal of Science & Technology. 6(1): 37-46.

M. Teeluck and B. G. Sutton. 1998. Discharge characteristics of porous pipe microirrigation lateral. Agricultural Water Management. 38(2):123-134.

Ronald E. Yoder and C. R. Mote. 1995. Porous pipe discharge uniformity. Microirrigation for a changing world. Conserving resources/preserving the environment. Proceedings of the Fifth International Micro Irrigation Congress, ASAE, Orlando, Florida.

Buried clay pipe irrigation

Altaf A. Siyal and Todd H. Skaggs. 2009. Measured and simulated soil wetting patterns under porous clay pipe sub-surface irrigation. *Agricultural Water Management* 96(2009):893–904.

Charles H. Batchelor, Chris Lovell and Monica Murata. 1996. Simple microirrigation techniques for improving irrigation efficiency on vegetable gardens. *Agricultural Water Management* 32(1):37-48.

Edward B. House. 1918. Irrigation by Means of Underground Porous Pipe. Agricultural Experiment Station, Colorado Agricultural College, Bulletin 240, June. 15 pages.

Kazuto Iwama, Torahiko Tanigawa, Ryoichi Kaneki and Katsuhiko Yabe. 2006. Influence of porous materials on water supply characteristic of sub-irrigation method. *Transactions of the Japanese Society of Irrigation, Drainage and Reclamation Engineering* (Oct) 245:25-30.

Monica Murata, Charles H. Batchelor, Chris J. Lovel, M. W. Brown, A. J. Semple, E. Mazhangarai, A. Haria, S. P. McGrath and R. J. Williams. 1995. Development of Small-Scale Irrigation Using Limited Groundwater Resources, 4th Interim Report, November. IH Report ODA 95/5. 104 p.

Kuda Murwira, Helen Wedgwood, Cathy Watson and Everjoice J. Win, with Clare Tawney. 2000. *Beating Hunger: The Chivi Experience. A Community-based Approach to Food Security in Zimbabwe*. Intermediate Technology Publications (now Practical Action), London.

Treeshelters

David A. Bainbridge. 2012. Use of tree shelters as deep containers. *Tree Planters' Notes*. 55(2):50-54.

David A. Bainbridge. 2007. *A Guide for Desert and Dryland Restoration*. Island Press.

David A. Bainbridge. 2001. Response of purple needlegrass transplants to tree shelters. *Ecological Restoration*. 19(4):251-252.

David A. Bainbridge. 1994. Treeshelters improve establishment on dry sites. *Treeplanters' Notes*. Winter 45(1):13-16.

Taking it to the next level

Erv Evans and Deanna Osmond. A Gardener's Guide to Soil Testing: <http://www.cals.ncsu.edu/agcomm/publications/Ag-614.pdf>

Minimizing Risks of Soil Contaminants in Urban Gardens. http://www.soil.ncsu.edu/publications/Soilfacts/AG-439-78_Urban_Soil_Contaminants.pdf

Abe Collins and Darren J. Doherty. 2009. Keyline Design Mark IV: Building Soils, Harvesting Rainwater, Storing Carbon. www.permaculturenews.org/resources_files/KeylineArticle.pdf

P. A. and Ken B. Yeomans. 2003. Water for Every Farm. Griffin Press.

Brad Lancaster. 2007. Rainwater Harvesting for Drylands and Beyond Vol. 2: Water-Harvesting Earthworks. Rainsource Press.

Will Critchley. 1991. Looking After Our Land: New approaches to Soil & Water Conservation in Dryland Africa. Practical Action Publishing (Imprint Oxfam Publications).

Beryl Turner. 1994. Small-scale irrigation in developing countries. Land Use Policy 11(4):251–261.

Robert Chambers, N. C. Saxena and T. Shah. 1989. To the Hands of the Poor: Water and Trees. Intermediate Technology Publications.

Peter Hazell, Colin Poulton, Steve Wiggins, and Andrew Dorward. 2007. The Future of Small Farms for Poverty Reduction and Growth. 2020 Discussion Paper No. 42. Washington, D.C.: International Food Policy Research Institute.

Jerry L. Hatfield, Thomas J. Sauer and John H. Prueger. 2001. Managing Soils to Achieve Greater Water Use Efficiency: A Review. Publications from USDA-ARS / UNL Faculty. Paper 1341. <http://digitalcommons.unl.edu/usdaarsfacpub/1341>

Chapter 1. Containers. The Container Tree Nursery Manual. www.rngr.net/publications/ctnm/volume-2/vol_2_chapter_1.../file

Waterwise gardening and farming

Waterwise gardening http://ucanr.edu/sites/scmg/Water-wise_Gardening/ (California)

Terry L. Pritchard. Soil moisture measurement technology. UCCE Central Sierra <http://cecentralsierra.ucanr.org/files/96233.pdf>

David A. Bainbridge, John Tiszler, Robert MacAller and Michael F. Allen 2001. Irrigation and surface mulch effects on transplant establishment. Native Plants Journal. 2(1):25-29.

David A. Bainbridge. 1996. Vertical mulch for soil improvement. Restoration and Management Notes. 14(1):72.

Bainbridge, D. A., M. Fidelibus and R. F. MacAller. 1995. Techniques for plant establishment in arid ecosystems. Restoration and Management Notes. 13(2):198-202.

Sally Wasowski with Andy Wasowski. 2000. Native Landscaping from El Paso to L.A. McGraw-Hill.

George Oxford Miller. 2006. Landscaping With Native Plants Of Texas. Voyageur Press.

- J. William Thompson and Kim Sorvig. 2000. Sustainable Landscape Construction. Island Press.
- Robert Kourik. 1986. Designing and Maintaining Your Edible Landscape—Naturally. Metamorphic Press.
- Carol Bornstein, David Fross and Bart O'Brien. 2005. California Native Plants for the Garden. Cachuma Press.
- Carol Bornstein, David Fross, Bart O'Brien, John Evarts and Marjorie Popper. 2011. Reimagining the California Lawn: Water-conserving Plants, Practices, and Designs. Cachuma Press.
- Glenn Keator, Alrie Middlebrook and Phyllis M. Faber. 2007. Designing California Native Gardens: The Plant Community Approach to Artful, Ecological Gardens. UC Press.
- John M. O'Keefe. 1992. Water-conserving Gardens and Landscapes. Storey.
- David A. Cleveland and Daniela Soleri. 2002. Food from Dryland Gardens. Center for Food, People and the Environment.
- Marjorie D. Schmidt and Katherine L. Greenberg. 2012. Growing California Native Plants, 2nd ed. University of California Press.
- Judy Mielke. 1993. Native Plants for Southwestern Landscapes. University of Texas Press
- Judith Phillips. 1987. Southwestern Landscaping with Native Plants. Museum of New Mexico Press.
- Desert Botanical Garden Staff. 1996. Xeriscape Gardens Plants for the Desert Southwest. Arizona Municipal Water Users Association.
- David Wann. 2003. The Zen Of Gardening In the High & Arid West: Tips, Tools, and Techniques. Fulcrum.
- David Owens. 2002. Extreme Gardening: How to Grow Organic in the Hostile Deserts. Poco Verde Landscape .
- Bill Mollison and Reny Mia Slay. 1997. Introduction to Permaculture. Tutorial Press.
- David Holmgren. 2002. Permaculture: Principles and Pathways Beyond Sustainability. Holmgren Design Services.
- Kathleen Norris Brenzel and Editors. 2004. Gardening in the Southwest: A Wealth of Great Ideas for Your Garden. Sunset Books.
- Scott Calhoun. 2009. The Hot Garden: Landscape Design for the Desert Southwest. Rio Nuevo Publishers.

Scott Calhoun. 2009. Hot Pots: Container Gardening in the Arid Southwest. Rio Nuevo Publishers.

Jerry L. Hatfield. 2011. Soil Management for Increasing Water Use Efficiency in Field Crops Under Changing Climates. USDA-ARS / UNL Faculty. Paper 1376. <http://digitalcommons.unl.edu/usdaarsfacpub/1376>

Ian Cooke. 2008. Waterwise Gardening. New Holland Publishers. (UK)

Thomas Christopher. 1994. Water-Wise Gardening: America's Backyard Revolution. Simon & Schuster

Allan Windust. 2003. Waterwise House and Garden: A Guide for Sustainable Living. (Australia)

Kevin Walsh. 2007. Waterwise Gardening 4th edition. New Holland Publishers. (Australia)

Waterwise software program <http://www.gardensoft.com>

Waterwise garden information <http://www.gardensoft.com/Conservation.html#>

Belinda Platts and Mark Grismer. 2014. Rainfall leaching critical for long-term use of recycled water in the Salinas Valley. California Agriculture. 68(3)75-81.

Rainwater harvesting

Brad Lancaster. Rainwater Harvesting for Drylands and Beyond. Volume 1: Guiding Principles to Welcome Rain into Your Life and Landscape. Rainsource Press.

Texas Rainwater Harvesting Manual www.twdb.state.tx.us/iwt/Rainwater.asp

Edwards, F., D. A. Bainbridge, T. A. Zink and M. F. Allen. 2000. Rainfall catchments improve survival of container transplants at Mojave Desert site. Ecological Restoration. 18(2):100-103.

Cleo Woelfle-Erskine and Apryl Uncapher. 2012. Creating Rain Gardens: Capturing the Rain for Your Own Water-Efficient Garden. Timber Press.

Art Ludwig. 2012. Create an Oasis with Greywater: Choosing, Building and Using Greywater Systems, Includes Branched Drains, 5th edition. Oasis Design.

Art Ludwig. 2005. Water Storage. Oasis Designs.

John Gould and Erik Nissen-Pedersen. 2003. Rainwater Catchment Systems for Domestic Supply. ITDG.

Percival "P. A" and Ken Yeomans. 2003. Water for Every Farm. Keyline Designs.

Will Chritchley, Chris Reij and Alain Sez nec. 1992. Water Harvesting for Plant Production, Vol. 2, Case Studies and Conclusions, Sub-Saharan Africa. World Bank Technical Paper 157.

John Gould and Erik Nissen-Petersen. 2003. Rainwater Catchment Systems for Domestic Supply. ITDG Publications, London, UK.

Martin M. Karpiscak, Glen W. France, K. James DeCook, Richard G. Brittain, Kenneth E. Foster and Susan B. Hopf. 2001. Casa Del Agua: Water Conservation Demonstration house, 1986 through 1998. Journal of the American Water Resources Association. October 37(5):1237-1248).

Brad Lancaster. 2006. Guiding Principles to Welcome Rain Into Your Life and Landscape, volume 1. Rainsource Press, Tucson, AZ.

Nancy Stoner, Christopher Kloss, and Crystal Calarusse. 2006. Rooftops to Rivers: Green Strategies for Controlling Stormwater and Combined Sewer Overflows. Natural Resources Defense Council, NY.

Practical Action. 2012. Rainwater harvesting. Practical Action, Warwickshire.

Excellent materials from India: <http://www.rainwaterharvesting.org/>, and Rainwater harvesting. <http://megphed.gov.in/knowledge/RainwaterHarvest/Chap5.pdf> accessed 4 13 2012

Our water future...

David A. Bainbridge. 2012. Restoration of arid and semi-arid lands. Chapter 10 In J. van Andel and J. Aronson, Restoration Ecology: The New Frontier. Blackwell.

David A. Bainbridge. 2007. Sustainable land use systems for arid lands: research needs for the next twenty-five years. Annals of the Arid Zone. 46(3/4):425-452.

David A. Bainbridge. 2007. A Guide for Desert and Dryland Restoration. Island Press.

David A. Bainbridge. 2002 [1986]. Self Reliant Agriculture for Arid Lands. Sierra Nature Prints.

Steve Mitchell and David A. Bainbridge 1991. Sustainable Agriculture for California: A Guide to Information. University of California Division of Agriculture and Natural Resources, Publication 3349, Oakland CA. 196 p.

Will Critchley. 2011. More People More Trees: Environmental Recovery in Africa. Practical Action.

Zhu Qiang, Li Yuanhong and John Gould. 2012. Every Last Drop. Rainwater Harvesting and Sustainable Technologies in Rural China. Practical Action.

David A. Bainbridge, John Hofacre and Judy Corbett. 1989. Village Homes Solar House Designs. Rodale Press. (www.academia.edu/4112376/Planning_for_Village_Homes_solar_subdivision)