

# Fuentes

## Capítulo 1: El desafío

1. FAO. 2004. *La ética de la intensificación sostenible de la agricultura*. Estudio FAO: Cuestiones de ética, n.º 3. pp. 3-5. Roma.

2. Kassam, A. y Hodgkin, T. 2009. *Rethinking agriculture: Agrobiodiversity for sustainable production intensification*. Platform for Agrobiodiversity Research (<http://agrobiodiversityplatform.org/climatechange/2009/05/14/rethinking-agriculture-agrobiodiversity-for-sustainable-production-intensification/>).

3. Royal Society. 2009. *Reaping the benefits: Science and the sustainable intensification of global agriculture*. RS Policy document 11/09. Londres.

4. Hazell, P.B.R. 2008. *An assessment of the impact of agricultural research in South Asia since the green revolution*. Roma, Secretaría del Consejo Científico.

5. Gollin, D., Morris, M. y Byerlee, D. 2005. Technology adoption in intensive post-green revolution systems. *Amer. J. Agr. Econ.*, 87(5): 1310-1316.

6. Tilman, D. 1998. The greening of the green revolution. *Nature*, 396: 211-212. DOI: 10.1038/24254

7. Banco Mundial. 2007. *Informe sobre el desarrollo mundial 2008*. Washington, DC, Banco Internacional de Reconstrucción y Fomento y Banco Mundial.

8. FAO. 2011. Base de datos estadísticos FAOSTAT (<http://faostat.fao.org/>).

9. FAO. 2009. *El estado de la inseguridad alimentaria en el mundo: Crisis económicas: Repercusiones y enseñanzas extraídas*. Roma.

10. Bruinsma, J. 2009. *The resource outlook to 2050: By how much do land, water and crop yields need to increase by 2050?* Documento presentado en el Foro de Expertos de Alto Nivel de la FAO sobre como alimentar al mundo en 2050, 24-26 de junio de 2009. Roma, FAO.

11. Tilman, D., Cassman, K.G., Matson, P.A., Naylor, R. y Polasky, S. 2002. Agricultural sustainability and intensive production practices. *Nature*, 418: 671-677.

12. FAO. 2010. *El estado de la inseguridad alimentaria en el mundo: La inseguridad alimentaria en crisis prolongadas*. Roma.

13. FAO. 2009. *Food security and agricultural mitigation in developing countries: Options for capturing synergies*. Roma.

14. FIDA. 2010. *Informe sobre la pobreza rural 2011. Nuevas realidades, nuevos desafíos: Nuevas oportunidades para la generación del mañana*. Roma.

15. Naciones Unidas. *World urbanization prospects, the 2009 revision population database* (<http://esa.un.org/wup2009/unup/index.asp>).

16. Rosegrant, M.W., Ringler, C. y Msangi, S. 2008. *International model for policy analysis of agricultural commodities and trade (IMPACT): Model description*. Washington, DC, IFPRI.

17. FAO. 2003. *Agricultura mundial: Hacia los años 2015/2030*, por J. Bruinsma, ed. Reino Unido, Earthscan Publications Ltd y Roma, FAO.

18. FAO. 2009. *Alimentar al mundo, erradicar el hambre*. Documento de antecedentes de la Cumbre Mundial sobre la Seguridad Alimentaria, Roma, Noviembre 2009. Roma.

19. Nellemann, C., MacDevette, M., Manders, T., Eickhout, B., Svihus, B., Prins, A.G. y Kaltenborn, B.P., eds. 2009. *The environmental food crisis – The environment's role in averting future food crises. A UNEP rapid response assessment*. Noruega, Programa de las Naciones Unidas para el Medio Ambiente y GRID-Arendal.

20. IPCC. 2001. *Climate Change 2001: Synthesis report. A contribution of working groups I, II, and III to the Third Assessment Report of the Intergovernmental Panel on Climate Change*, por R.T. Watson and the Core Writing Team, eds. Reino Unido, Cambridge, y Nueva York, NY, EE.UU., Cambridge University Press.

21. IPCC. 2007. *Cambio Climático 2007: Informe de Síntesis. Una evaluación del Grupo Intergubernamental de Expertos sobre el Cambio Climático*. Ginebra, Suiza.

22. Rosenzweig, C. y Tubiello, F.N. 2006. Adaptation and mitigation strategies in agriculture: An analysis of potential synergies. *Mitigation and adaptation strategies for global change*, 12: 855-873.

23. Jones, P. y Thornton, P. 2008. Croppers to livestock keepers: Livelihood transitions to 2050 in Africa due to climate change. *Environmental Science & Policy*, 12(4): 427-437.

24. Burney, J.A., Davis, S.J. y Lobell, D.B. 2010. Greenhouse gas mitigation by agricultural intensification. *Proc. Natl. Acad. Sci.*, 107(26): 12052-12057.

25. FAO. 2010. *La volatilidad de precios en los mercados agrícolas: Evidencia, efectos en la seguridad alimentaria y respuestas normativas*. Perspectivas Económicas y Sociales Informes de Política n.º 12. Roma.

26. Nelson, G.C., Rosegrant, M.W., Palazzo, A., Gray, I., Ingersoll, C., Robertson, R., Tokgoz, S., Zhu, T., Sulser, T.B., Ringler, C., Msangi, S. y You, L. 2010. *Food security, farming, and climate change to 2050: Scenarios, results, policy options*. Washington, DC, IFPRI.

27. FAO. 2006. *World agriculture: Towards 2030/2050. An FAO perspective*. Roma.

28. CE. 2007. *Food security thematic programme: Thematic strategy paper and multiannual indicative programme 2007-2010*. Bruselas.

29. Godfray, C., Beddington, J.R., Crute, I.R., Haddad, L., Lawrence, D., Muir, J.F., Pretty, J., Robinson, S., Thomas, S.M. y Toulmin, C. 2010. Food security: The challenge of feeding 9 billion people. *Science*, 327: 812-818.
30. FAO. 2010. *Informe del 22.º período de sesiones del Comité de Agricultura, Roma, 29 de noviembre – 3 de diciembre 2010*. Roma.
31. FAO. 2010. *Intensificación sostenible de la producción agrícola mediante un enfoque ecosistémico y un entorno favorable: mejora de la eficiencia a través de la gestión y servicios ecosistémicos*. Roma.
32. Foresight. 2011. *The future of food and farming: Challenges and choices for global sustainability*. Informe final del proyecto. Londres, the Government Office for Science.
33. IAASTD. 2009. *Agriculture at the crossroads*, por B.D. McIntyre, H.R. Herren, J. Wakhungu y R.T. Watson, eds. Washington, DC.
34. Pretty, J.N., Noble, A.D., Bossio, D., Dixon, J., Hine, R.E., de Vries, F. y Morison, J.I.L. 2006. Resource-conserving agriculture increases yields in developing countries. *Environ. Sci. Technol.*, 40: 1114-1119.
35. Badgley, C., Moghtader, J., Quintero, E., Zakem, E., Chappell, M., Aviles-Vazquez, K., Samulon, A. y Perfecto, I. 2007. Organic agriculture and the global food supply. *Renew. Agric. Food Syst.*, 22, 86-108.
36. Power, A.G. 2010. Ecosystem services and agriculture: Tradeoffs and synergies. *Phil. Trans. R. Soc. B.*, 365(1554): 2959-2971.
37. Warner, K.D. 2006. Extending agroecology: Grower participation in partnerships is key to social learning. *Renewable Food Agric. Syst.*, 21(2): 84-94.
38. Swanson, B.E. y Rajalahti, R. 2010. *Strengthening agricultural extension and advisory systems: Procedures for assessing, transforming, and evaluating extension systems*. Agricultura y Desarrollo Rural Documento de debate 45. Washington, DC, Banco Internacional de Reconstrucción y Fomento y Banco Mundial.
39. FAO. 2011. *El Estado Mundial de la Agricultura y la Alimentación: Las mujeres en la agricultura – Cerrar la brecha de género en aras del desarrollo*. Roma.
- ## Capítulo 2: Sistemas de explotación agrícola
1. Doran, J.W. y Zeiss, M.R. 2000. Soil health and sustainability: Managing the biotic component of soil quality. *Applied Soil Ecology*, 15: 3-11.
2. Pretty, J. 2008. Agricultural sustainability: Concepts, principles and evidence. *Phil Trans Royal Society of London*, B 363(1491): 447-466.
3. Kassam, A.H., Friedrich, T., Shaxson, F. y Pretty, J. 2009. The spread of Conservation Agriculture: Justification, sustainability and uptake. *Int. Journal of Agric. Sust.*, 7(4): 292-320.
4. Godfray, C., Beddington, J.R., Crute, I.R., Haddad, L., Lawrence, D., Muir, J.F., Pretty, J., Robinson, S., Thomas, S.M. y Toulmin, C. 2010. Food security: The challenge of feeding 9 billion people. *Science*, 327: 812-818.
5. Pretty, J., Toulmin, C. y Williams, S. 2011. Sustainable intensification in African agriculture. *Int. Journal of Agric. Sust.*, 9.1. (En prensa)
6. Shaxson, F., Kassam, A., Friedrich, T., Boddey, R. y Adekunle, A. 2008. *Underpinning the benefits conservation agriculture: Sustaining the fundamental of soil health and function*. Main document for the Workshop on Investing in Sustainable Crop Intensification: The case of soil health, 24-27 de julio. Roma, FAO.
7. Uphoff, N., Ball, A.S., Fernandes, E., Herren, H., Husson, O., Laing, M., Palm, C., Pretty, J., Sanchez, P., Sanginga, N. y Thies, J., eds. 2006. *Biological approaches to sustainable soil systems*. Boca Ratón, Florida, EE.UU., CRC Press, Taylor & Francis Group.
8. Montgomery, D. 2007. *Dirt, the erosion of civilizations*. Berkeley y Los Angeles, EE.UU., University California Press.
9. FAO. 2003. *World agriculture: Towards 2015/2030*, por J. Bruinsma, ed. Reino Unido, Earthscan Publications Ltd y Roma, FAO.
10. Mrema, G.C. 1996. *Agricultural development and the environment in Sub-Saharan Africa: An engineer's perspective*. Documento principal presentado en la Primera Conferencia Internacional de SEASAE, 2-4 de octubre, 1996, Arusha, Tanzania.
11. Legg, B.J., Sutton, D.H. y Field, E.M. 1993. *Feeding the world: Can engineering help?* Fourth Erasmus Darwin Memorial Lecture, 17 de noviembre de 1993, Silsoe.
12. Baig, M.N. y Gamache, P.M. 2009. *The economic, agronomic and environmental impact of no-till on the Canadian prairies*. Canadá, Alberta Reduced Tillage Linkages.
13. Lindwall, C.W. y Sonntag, B., eds. 2010. *Landscape transformed: The history of conservation tillage and direct seeding*. Saskatoon, Canadá, Knowledge Impact in Society.
14. Friedrich, T. y Kienzle, J. 2007. *Conservation agriculture: Impact on farmers' livelihoods, labour, mechanization and equipment*. Roma, FAO.
15. Giller, K.E., Murmiwa, M.S., Dhlhwayo, D.K.C., Mafongoya, P.L. y Mpepereki, S. 2011. Soyabean and sustainable agriculture in Southern Africa. *Int. Journal of Agric. Sust.*, 9(1). (En prensa)
16. Knuutila, O., Hautala, M., Palojarvi, A. y Alakukku, L. 2010. Instrumentation of automatic measurement and modelling of temperature in zero tilled soil during whole year. En: *Proceedings of the International Conference on Agricultural Engineering AgEng 2010, Towards Environmental Technologies, Clermont Ferrand, Francia, 6-8 de septiembre*. Francia, Cemagref.
17. Owenya, M.Z., Mariki, W.L., Kienzle, J., Friedrich, T. y Kassam, A. 2011. Conservation agriculture (CA) in Tanzania: The case of Mwangaza B CA farmer field school (FFS), Rhotia Village, Karatu District, Arusha. *Int. Journal of Agric. Sust.*, 9.1. (En prensa)

18. Bruce, S.E., Howden, S.M., Graham, S., Seis, C., Ash, J. y Nicholls, A.O. 2005. Pasture cropping: Effect on biomass, total cover, soil water & nitrogen. *Farming Ahead*.
19. Landers, J. 2007. Tropical crop-livestock systems in Conservation Agriculture: The Brazilian experience. *Integrated Crop Management*, 5. Roma, FAO.
20. Joshi, P.K., Challa, J. y Virmani, S.M., eds. 2010. *Conservation agriculture: Innovations for improving efficiency, equity and environment*. Nueva Delhi, New Delhi National Academy of Agricultural Sciences.
21. IFPRI. 2010. Zero tillage in the rice-wheat systems of the Indo-Gangetic Plains: A review of impacts and sustainability implications, by O. Erenstein. En D.J. Spielman y R. Pandya-Lorch, eds. *Proven successes in agricultural development: A technical compendium to millions fed*. Washington, DC.
22. Sims, B., Friedrich, T., Kassam, A.H. y Kienzle, J. 2009. *Agroforestry and conservation agriculture: Complementary practices for sustainable agriculture*. Documento presentado en el Segundo Congreso Mundial de Agrosilvicultura, Nairobi, agosto 2009. Roma.
23. Kassam, A., Stoop, W. y Uphoff, N. 2011. Review of SRI modifications in rice crop and water management and research issues for making further improvements in agricultural and water productivity. *Paddy and water environment*, 9.
- ### Capítulo 3: La salud del suelo
1. Hettelingh, J.P., Slootweg, J. y Posch, M., eds. 2008. *Critical load, dynamic modeling and impact assessment in Europe: CCE Status Report 2008*. Los Países Bajos, Netherlands Environmental Assessment Agency.
2. Cassman, K.G., Olk, D.C. y Dobermann, A., eds. 1997. Scientific evidence of yield and productivity declines in irrigated rice systems of tropical Asia. *International Rice Commission Newsletter*, 46. Roma, FAO.
3. de Ridder, N., Breman, H., van Keulen, H. y Stomph, T.J. 2004. Revisiting a "cure against land hunger": Soil fertility management and farming systems dynamics in the West Africa Sahel. *Agric. Syst.*, 80(2): 109-131.
4. Fermont, A.M., van Asten, P.J.A., Tittonell, P., van Wijk, M.T. y Giller, K.E. 2009. Closing the cassava yield gap: An analysis from smallholder farms in East Africa. *Field Crops Research*, 112: 24-36.
5. Howeler, R.H. 2002. Cassava mineral nutrition and fertilization. En R.J. Hillocks, M.J. Thresh y A.C. Bellotti, eds. *Cassava: Biology, production and utilization*, pp. 115-147. Wallingford, Reino Unido, CABI Publishing.
6. Allen, R.C. 2008. The nitrogen hypothesis and the English agricultural revolution: A biological analysis. *The Journal of Economic History*, 68: 182-210.
7. FAO. 2011. Base de datos estadísticos FAOSTAT (<http://faostat.fao.org/>).
8. Jenkinson, D.S. Department of Soil Science, Rothamsted Research. Interview with BBC World. 6 de noviembre de 2010.
9. Miao, Y., Stewart, B.A. y Zhang, F.S. 2011. Long-term experiments for sustainable nutrient management in China. A review. *Agron. Sustain. Dev.* (En prensa)
10. Bot, A. y Benites, J. 2005. *The importance of soil organic matter: Key to drought-resistant soil and sustained food and production*. Boletín de Suelos de la FAO n.º 80. Roma.
11. Dudal, R. y Roy, R.N. 1995. *Integrated plant nutrition systems*. FAO Fertilizer and Plant Nutrition Bulletin n.º 12. Roma.
12. Roy, R.N., Finck, A., Blair, G.J. y Tandon, H.L.S. 2006. *Plant nutrition for food security A guide for integrated nutrient management*. FAO Fertilizer and Plant Nutrition Bulletin 16. Roma.
13. Karlen, D.L., Mausbach, M.J., Doran, J.W., Cline, R.G., Harris, R.F. y Schuman, G.E. 1997. Soil quality: A concept, definition and framework for evaluation. *Soil Sci. Soc. Am. J.*, 61: 4-10.
14. USDA-NRCS. 2010. *Soil quality - Improving how your soil works* (<http://soils.usda.gov/sqi/>).
15. EU-JRC. 2006. *Bio-Bio project: Biodiversity-Bioindication to evaluate soil health*, por R.M. Cenci y F. Sena, eds. Institute for Environment and Sustainability. EUR, 22245.
16. Kinyangi, J. 2007. *Soil health and soil quality: A review*. Ithaca, EE.UU., Universidad de Cornell. (mimeo)
17. Vanlauwe, B., Bationo, A., Chianu, J., Giller, K.E., Merckx, R., Mokwunye, U., Ohiokpehai, O., Pypers, P., Tabo, R., Shepherd, K.D., Smaling, E.M.A., Woomer, P.L. y Sanginga, N. 2010. Integrated soil fertility management - Operational definition and consequences for implementation and dissemination. *Outlook on Agriculture*, 39:17-24.
18. Bationo, A. 2009. Soil fertility - Paradigm shift through collective action. *Knowledge for development - Observatory on science and technology* (<http://knowledge.cta.int/en/Dossiers/Demanding-Innovation/Soil-health/Articles/Soil-Fertility-Paradigm-shift-through-collective-action>).
19. IFDC. 2011. *Integrated soil fertility management* ([www.ifdc.org/getdoc/1644daf2-5b36-4191-9a88-ca8a4a2b93cb/ISFM](http://www.ifdc.org/getdoc/1644daf2-5b36-4191-9a88-ca8a4a2b93cb/ISFM)).
20. Rodale Institute. *Soils* (<http://rodaleinstitute.org/course/M2/1>).
21. FAO. 2008. An international technical workshop Investing in sustainable crop intensification: The case for improving soil health, FAO, Roma: 22-24 de julio de 2008. *Integrated Crop Management*, 6(2008). Roma.
22. Weber, G. 1996. Legume-based technologies for African savannas: Challenges for research and development. *Biological Agriculture and Horticulture*, 13: 309-333.
23. Chabi-Olaye, A., Nolte, C., Schulthess, F. y Borgemeister, C. 2006. Relationships of soil fertility and stem borers damage to yield in maize-based cropping system in Cameroon. *Ann. Soc. Entomol. (N.S.)*, 42(3-4): 471-479.

24. Giller, K.E., Beare, M.H., Lavelle, P., Izac, A. y Swift, M.J. 1997. Agricultural intensification, soil biodiversity and agroecosystem function. *Applied Soil Ecology*, 6: 3-16.
25. Sanchez, P.A., Shepherd, K.D., Soule, M.J., Place, F.M., Buresh, R.J., Izac, A.-M.N., Mokwunye, A.U., Kwesiga, F.R., Ndiritu, C.G. y Woomer, P.L. 1997. Soil fertility replenishment in Africa: An investment. *En* R.J. Buresh, P.A. Sanchez y F. Calhoun, eds. *Replenishing soil fertility in Africa: Proceedings of an international symposium, 6 November 1996*, pp. 1-46. Madison y Indianapolis, EE.UU., Soil Science Society of America Inc.
26. Sanginga, N. y Woomer, P.L. 2009. *Integrated soil fertility management in Africa: Principles, practices, and developmental processes*. Nairobi, TSBF-CIAT.
27. Sanginga, N., Dashiell, K.E., Diels, J., Vanlauwe, B., Lyasse, O., Carsky, R.J., Tarawali, S., Asafo-Adjei, B., Menkir, A., Schulz, S., Singh, B.B., Chikoye, D., Keatinge, D. y Ortiz, R. 2003. Sustainable resource management coupled to resilient germplasm to provide new intensive cereal-grain-legume-livestock systems in the dry savanna. *Agriculture, Ecosystems and Environment*, 100: 305-314.
28. Sanchez, P.A. 2000. Linking climate change research with food security and poverty reduction in the topics. *Agriculture, Ecosystems and Environment*, 82: 371-383.
29. Garrity, D.P., Akinnifesi, F.K., Ajayi, O.C., Weldesemayat, S.G., Mowo, J.G., Kalinganire, A., Larwanou, M. y Bayala, J. 2010. Evergreen agriculture: A robust approach to sustainable food security in Africa. *Food Security*, 2: 197-214.
30. Dobermann, A. 2000. Future intensification of irrigated rice systems. *En* J.E. Sheehy, P.L. Mitchel, y B. Hardy, eds. *Re-designing rice photosynthesis to increase yield*, pp. 229-247. Makati, Filipinas y Amsterdam, IRRI / Elsevier.
31. Byrnes, B.H., Vlek, P.L.C. y Craswell, E.T. 1979. The promise and problems of super granules for rice fertilization. *En* S. Ahmed, H.P.M. Gunasena y Y.H. Yang, eds. *Proceedings: Final inputs review meeting, Honolulu, Hawaii, 20-24 August 1979*. Hawaii, East-West Center.
32. Craswell, E.T., De Datta, S.K., Obcemea, W.N. y Hartantyo, M. 1981. Time and mode of nitrogen fertilizer application. *Fertilizer Research*, 2: 247-259.
33. Rong-Ye, C. y Zhu Zhao Liang. 1982. Characteristics of the fate and efficiency of nitrogen in supergranules of urea. *Fertilizer Research*, 3: 63-71.
34. Roy, R.N. y Misra, R.V. 2003. Economic and environmental impact of improved nitrogen management in Asian rice. *En* FAO. *Sustainable rice production for food security. Proceedings of the 20th Session of the International Rice Commission. Bangkok, 23-26 de julio de 2002*. Roma.
35. Thomas, J. y Prasad, R. 1982. On the nature of mechanism responsible for the higher efficiency for urea super granules for rice. *Plant and Soil*, 69: 127-130.
36. Visocky, M. 2010. Fertilizer system revolutionizes rice farming in Bangladesh. *Frontlines*, 12(2010).
37. Peng, S., Buresh, R.J., Huang, J., Zhong, X., Zou, Y., Yang, J., Wang, G., Liu, Y., Hu, R., Tang, Q., Cui, K., Zhang, F.S. y Dobermann, A. 2010. Improving nitrogen fertilization in rice by site-specific N management. A review. *Agron. Sustain. Dev.*, 30(2010): 649-656.
38. Sachs, J., Remans, R., Smukler, S., Winowiecki, L., Sandy, J., Andelman, S.J., Cassman, K.G., Castle, L.D., DeFries, R., Denning, G., Fanzo, J., Jackson, L.E., Leemans, R., Lehmann, J., Milder, J.C., Naem, S., Nziguheba, G., Palm, C.A., Pingali, P.L., Reganold, J.P., Richter, D.D., Scherr, S.J., Sircely, J., Sullivan, C., Tomich, T.P. y Sanchez, P.A. 2010. Monitoring the world's agriculture. *Nature*, 466: 558-560.
39. Steiner, K., Herweg, K. y Dumanski, J. 2000. Practical and cost-effective indicators and procedures for monitoring the impacts of rural development projects on land quality and sustainable land management. *Agriculture, Ecosystems and Environment*, 81: 147-154.
40. FAO. 2010. *Agricultura "climáticamente inteligente": Políticas, prácticas y financiación para la seguridad alimentaria, adaptación y mitigación*. Roma.
41. Dumanski, J. y Pieri, C. 2000. Land quality indicators: Research plan. *Agriculture, Ecosystems & Environment*, 81: 93-102.
42. Mutsaers, H.J.W. 2007. *Peasants, farmers and scientists*. Nueva York, EE.UU., Springer Verlag.

## Capítulo 4: Cultivos y variedades

1. Fowler, C. y Hodgkin, T. 2004. Plant genetic resources for food and agriculture: Assessing global availability. *Annu. Rev. Environ. Resour.*, 29: 143-79.
2. FAO. 2010. *The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture*. Roma.
3. Alexandrova, N. y Atanassov, A. 2010. *Agricultural biotechnologies in developing countries: Options and opportunities in crops, forestry, livestock, fisheries and agro-industry to face the challenges of food insecurity and climate change (ABDC-10)*. Issue paper for the Regional session for Europe and Central Asia – Agricultural biotechnologies in Europe and Central Asia: New challenges and opportunities in a view of recent crises and climate change, Guadalajara, México, 1-4 de marzo de 2010.
4. FAO. 2009. *Declaración de la Cumbre Mundial sobre la Seguridad Alimentaria, 16-18 de noviembre de 2009*. Roma.
5. FAO. 2009. *Tratado internacional sobre los recursos fitogenéticos para la alimentación y la agricultura: Un tratado mundial para la seguridad alimentaria y la agricultura sostenible*. Roma.
6. CDB. 2006. *Perspectiva mundial sobre la diversidad biológica 2*. Montreal, Canadá.



7. Moore, G. y Tymowski, W. 2005. *Explanatory guide to the International Treaty for Plant Genetic Resources for Food and Agriculture*. Gland, Suiza, Cambridge, Reino Unido y Bonn, Alemania, IUCN.
8. Jarvis, D., Hodgkin, T., Bhuwon, S., Fadda, C. y Lopez Noriega, I. 2011. *A heuristic framework for identifying multiple ways of supporting the conservation and use of traditional crop varieties within the agricultural production systems. Critical reviews in plant sciences*. (En prensa)
9. Hunter, D. y Heywood, V., eds. 2011. *Crop wild relatives. A manual of in situ conservation*. Londres, Bioversity International, Earthscan.
10. Street, K., Mackay, M., Zeuv, E., Kaul, N., El Bouhssine, M., Konopka, J. y Mitrofanova, O. 2008. *Swimming in the gene pool – A rational approach to exploiting large genetic resource collections. Proceedings 11th International Wheat Genetics Symposium, Brisbane*. Sídney, Sydney University Press.
11. Ceccarelli, S., Grando, S., Shevtsov, V., Vivar, H., Yayaoui, A., El-Bhoussini, M., y Baum, M. 2001. *The ICARDA strategy for global barley improvement*. Aleppo, Siria, ICARDA.
12. Lipper, L., Anderson, C.L. y Dalton, T.J., eds. 2010. *Seed trade in rural markets: Implications for crop diversity and agricultural development*. Roma, FAO y Londres, Earthscan.
- Capítulo 5: Gestión del agua**
1. IIASA/FAO. 2010. *Global agro-ecological zones (GAEZ v3.0)*. Laxenburg, Austria, IIASA y Roma, FAO.
2. French, R.J. y Schultz, J.E. 1984. Water use efficiency of wheat in a Mediterranean type environment. I: The relation between yield, water use and climate. *Australian Journal of Agricultural Research*, 35(6): 743–764.
3. Sadras, V.O. y Angus, J.F., 2006. Benchmarking water use efficiency of rainfed wheat in dry environments. *Australian Journal of Agricultural Research*, 57: 847–856.
4. PNUD. 2006. *Informe de desarrollo humano 2006*. Nueva York, EE.UU.
5. Wani, S.P., Rockstrom, J. y Oweis, T., eds. 2009. Rainfed agriculture: Unlocking the potential. *Comprehensive Assessment of Water Management in Agriculture* 7. Wallingford, Reino Unido, CABI Publishing.
6. FAO. 2011. Base de datos estadísticos AQUASTAT ([www.fao.org/nr/water/aquastat/main/index.stm](http://www.fao.org/nr/water/aquastat/main/index.stm)).
7. Perry, C., Steduto, P., Allen, R. y Burt, C. 2009. Increasing productivity in irrigated agriculture: Agronomic constraints and hydrological realities. *Agricultural Water Management*, 96(2009): 1517–1524.
8. Batchelor, C., Singh, A., Rama Rao, M.S. y Butterworth, J. 2005. *Mitigating the potential unintended impacts of water harvesting*. Reino Unido, Department for International Development.
9. Liniger, H.P., Mekdaschi Studer, R., Hauer, C. y Gurtner, M. 2011. *Sustainable land management in practice – Guidelines and best practices for Sub-Saharan Africa*. Roma, TerrAfrica, WOCAT y FAO.
10. FAO. 2002. *Deficit irrigation practices*. Water reports No. 32, 51: 87–92.
11. Oweis, T., Hachum, A. y Kijne, J. 1999. *Water harvesting and supplemental irrigation for improved water use efficiency in dry areas*. SWIM Paper 7. Colombo, Sri Lanka, ICARDA/IMWI.
12. ICARDA. 2010. *ICARDA Annual Report 2009*. Aleppo, Siria.
13. FAO. 2010. *Mapping systems and service for multiple uses in Fenhe irrigation district, Shanxi Province, China*. Roma.
- Capítulo 6: Protección fitosanitaria**
1. Rana, S. 2010. *Global agrochemical market back in growth mode in 2010*. Agrow ([www.agrow.com](http://www.agrow.com)).
2. Lewis, W.J., van Lenteren, J.C., Phatak, S.C. y Tumlinson, J.H. 1997. A total system approach to sustainable pest management. *Proc. Natl. Acad. Sci.*, 94(1997): 12243–12248.
3. Wood, B.J. 2002. Pest control in Malaysia's perennial crops: A half century perspective tracking the pathway to integrated pest management. *Integrated Pest Management Reviews*, 7: 173–190.
4. Pimentel, D. y Levitan, L. 1986. Pesticides: Amounts applied and amounts reaching pests. *BioScience*, 36(2): 86–91.
5. Stern, V.M., Smith, R.F., van den Bosch, R. y Hagen, K.S. 1959. The integrated control concept. *Hilgardia*, 29: 81–101.
6. FAO. 1966. *Actas del Simposio de la FAO sobre la lucha integrada contra las plagas, Roma, 1965*. Roma, FAO.
7. Smith, R.F. y Douth, R.L. 1971. The pesticide syndrome—diagnosis and suggested prophylaxis. *En C.B. Huffaker, ed. Biological Control. AAAS Symposium Proceedings on Biological Control, Boston, December 1969*, pp. 331–345. Nueva York, Plenum Press.
8. IAASTD. 2009. *Agriculture at the crossroads*, por B.D. McIntyre, H.R. Herren, J. Wakhungu y R.T. Watson, eds. Washington, DC.
9. Way, M.J. y Heong, K.L. 1994. The role of biodiversity in the dynamics and management of insect pests of tropical irrigated rice: A review. *Bulletin of Entomological Research*, 84: 567–587.
10. Gallagher, K., Ooi, P., Mew, T., Borromeo, E., Kenmore, P.E. y Ketelaar, J. 2005. Ecological basis for low-toxicity: Integrated pest management (IPM) in rice and vegetables. *En J. Pretty, ed. The Pesticide Detox*, pp. 116–134. Londres, Earthscan.
11. Catindig, J.L.A., Arida, G.S., Baehaki, S.E., Bentur, J.S., Cuong, L.Q., Norowi, M., Rattanarak, W., Sriratanasak, W., Xia, J. y Lu, Z. 2009. *En K.L. Heong y B. Hardy, eds. Planthoppers: New threats to the sustainability of intensive rice production systems in Asia*, pp.191–220, 221–231. Los Baños, Filipinas, IRRI.
12. Neuenschwander, P. 2001. Biological control of the cassava mealybug in Africa: A review. *Biological Control*, 21(3): 214–229.

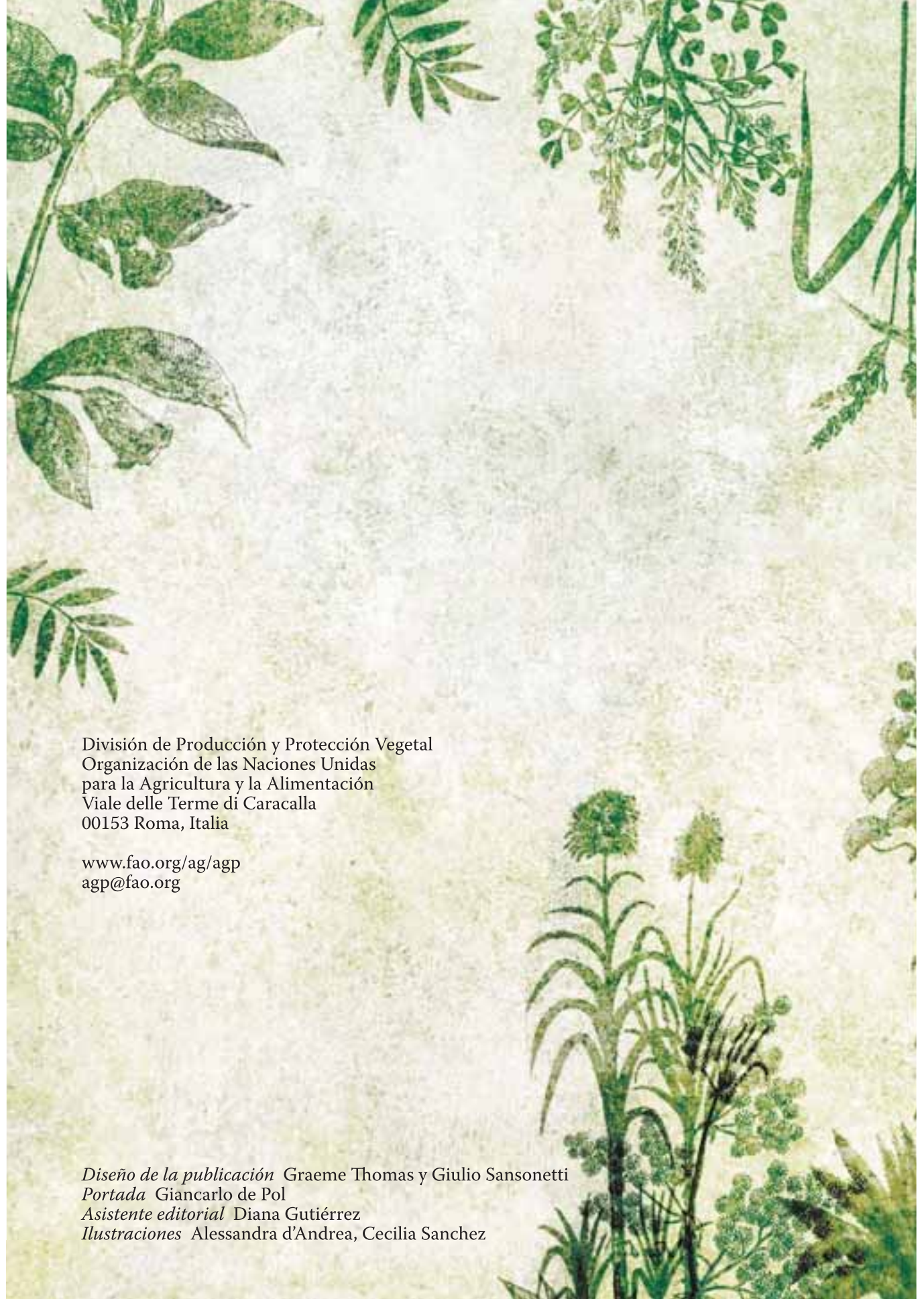
13. Bellotti, A.C., Braun, A.R., Arias, B., Castillo, J.A. y Guerrero, J.M. 1994. Origin and management of neotropical cassava arthropod pests. *African Crop Science Journal*, 2(4): 407-417.
14. Luttrell, R.G., Fitt, G.P., Ramalho, F.S. y Sugonyaev, E.S. 1994. Cotton pest management: Part 1. A worldwide perspective. *Annual Review of Entomology*, 39: 517-526.
15. Bove, J.M. 2006. Huanglongbing: A destructive, newly-emerging, century-old disease of citrus. *Journal of Plant Pathology*, 88(1): 7-37.
16. Gottwald, T.R. 2010. Current epidemiological understanding of Citrus Huanglongbing. *Annual Review of Phytopathology*, 48: 119-139.
17. Gilbertson, R.L. 2006. *Integrated pest management of tomato virus diseases in West Africa* ([www.intpdn.org/files/IPM\\_Tomato\\_Bob\\_Gilbertson\\_UC\\_Davis.pdf](http://www.intpdn.org/files/IPM_Tomato_Bob_Gilbertson_UC_Davis.pdf)).
18. Guillon, M. 2004. *Current world situation on acceptance and marketing of biological control agents (BCAS)*. Pau, Francia, International Biocontrol Manufacturer's Association.
- Capítulo 7: Políticas e instituciones**
1. Pingali, P. y Raney, T. 2005. *Entre la revolución verde y la revolución genética: ¿cómo será la evolución para los pobres?* ESA Documento de trabajo n.º 05-09. Roma, FAO.
2. Pingali, P. y Traxler, G. 2002. *Changing locus of agricultural research: Will the poor benefit from biotechnology and privatization trends?* Food Policy, 27: 223-238.
3. Beintema, N.M. y Stads, G.J. 2010. *Public agricultural R&D investments and capacities in developing countries: Recent evidence for 2000 and beyond*. Nota elaborada para GCARD 2010.
4. Crawford, E., Kelley, V., Jayne, T. y Howard, J. 2003. *Input use and market development in Sub-Saharan Africa: An overview*. Food Policy, 28(4): 277-292.
5. Banco Mundial. 2007. *Informe sobre el desarrollo mundial 2008*. Washington, DC, Banco Internacional de Reconstrucción y Fomento y Banco Mundial.
6. De Schutter, O. 2010. *Addressing concentration in food supply chains: The role of competition law in tackling the abuse of buyer power*. UN Special Rapporteur on the right to food, Briefing note 03. Nueva York, EE.UU.
7. Humphrey, J. y Memedovic, O. 2006. *Global value chains in the agrifood sector*. Vienna, ONUDI.
8. IAASTD. 2009. *Agriculture at the crossroads*, por B.D. McIntyre, H.R. Herren, J. Wakhungu y R.T. Watson, eds. Washington, DC.
9. Alexandratos, N. 2010. *Expert meeting on "Feeding the World in 2050". Critical evaluation of selected projections*. Roma, FAO. (mimeo)
10. IFPRI. 2010. *Éxitos demostrados en desarrollo agrícola: Una mirada al Proyecto Millions Fed*, por D.J. Spielman y R. Pandya-Lorch, eds. Washington, DC.
11. Fischer, R.A., Byerlee, D. y Edmeades, G.O. 2009. *Can technology deliver on the yield challenge to 2050?* Documento presentado en el Foro de Expertos de Alto Nivel de la FAO sobre como alimentar al mundo en 2050, 24-26 de junio de 2009. Roma, FAO.
12. FAO. 2010. *Agricultura "climáticamente inteligente": Políticas, prácticas y financiación para la seguridad alimentaria, adaptación y mitigación*. Roma.
13. FAO. 2009. *Food security and agricultural mitigation in developing countries: Options for capturing synergies*. Roma.
14. Hazell, P. y Fan, S. 2003. *Agricultural growth, poverty reduction and agro-ecological zones in India: An ecological fallacy?* Food Policy, 28(5-6): 433-436.
15. CDB. 2010. *Perverse incentives and their removal or mitigation* ([www.cbd.int/incentives/perverse.shtml](http://www.cbd.int/incentives/perverse.shtml)).
16. PNUMA/IIDS. 2000. *Environment and trade: A handbook*. Canadá, IIDS.
17. OCDE. 2003. *Perverse incentives in biodiversity loss*. Documento presentado en la Novena Reunión del Organismo Subsidiario de Asesoramiento Científico, Técnico y Tecnológico (SBSTTA 9). París.
18. Rhodes, D. y Novis, J. 2002. *The impact of incentives on the development of plantation forest resources in New Zealand*. Documento de información n.º 45. Ministerio de Agricultura y Silvicultura de Nueva Zelanda.
19. DNR. 2008. *Environmental harmful subsidies - A threat to biodiversity*. Múnich, Alemania.
20. FAO. 2010. *La volatilidad de precios en los mercados agrícolas: Evidencia, efectos en la seguridad alimentaria y respuestas normativas*. Perspectivas Económicas y Sociales Informes de Política n.º 12. Roma.
21. FAO. 2009. *Alimentar al mundo, erradicar el hambre*. Documento de antecedentes de la Cumbre Mundial sobre la Seguridad Alimentaria, Roma, Noviembre 2009. Roma.
22. Ceccarelli, S. 1989. Wide adaptation. How wide? *Euphytica*, 40: 197-205.
23. Lipper, L., Anderson, C.L. y Dalton, T.J. 2009. *Seed trade in rural markets: Implications for crop diversity and agricultural development*. Roma, FAO y Londres, Earthscan.
24. TEEB. 2010. *The economics of ecosystems and biodiversity: Mainstreaming the economics of nature: A synthesis of the approach, conclusions and recommendations of TEEB*. Malta, Progress Press.
25. Wunder, S., Engel, S.Y. y Pagiola, S. 2008. Payments for environmental services in developing and developed countries. *Ecological economics*, 65(4): 663-852.
26. FAO. 2007. *El Estado Mundial de la Agricultura y la Alimentación 2007: Pagos a los agricultores por servicios ambientales*. Roma.
27. FAO. 2010. *El estado de la inseguridad alimentaria en el mundo: La inseguridad alimentaria en crisis prolongadas*. Roma.

28. GNHC. 2009. *10th five year plan 2008-2013*. Documento principal, vol. I. El Reino de Bután.
29. Wilkes, A., Tan, J. y Mandula. 2010. The myth of community and sustainable grassland management in China. *Frontiers of Earth Science in China*, 4(1): 59–66.
30. Lipper, L. y Neves, B. 2011. Pagos por servicios ambientales: ¿qué papel ocupan en el desarrollo agrícola sostenible? *Revista Española de Estudios Agropecuarios y Pesqueros*, 228(7-8): 55-86.
31. Donnelly, T. 2010. *A literature review on the relationship between property rights and investment incentives*. Roma, FAO. (mimeo)
32. Fitzpatrick, D. 2005. Best practice: Options for the legal recognition of customary tenure. *Development and Change*, 36(3): 449-475. DOI: 10.1111/j.0012-155X.2005.00419.x
33. FAO. 2010. *The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture*. Roma.
34. Piesse, J. y Thirtle, C. 2010. Agricultural R&D, technology and productivity. *Phil. Trans. R. Soc. B.*, 365(1554): 3035-3047.
35. Pardey, P.G., Beintema, N., Dehmer, S. y Wood, S. 2006. *Agricultural research: A growing global divide?* IFPRI Food Policy Report. Washington, DC, IFPRI.
36. Naciones Unidas. 2009. *Promoción y protección de los derechos humanos: Cuestiones de derechos humanos, incluidos otros medios de mejorar el goce efectivo de los derechos humanos y las libertades fundamentales*. (UN GA Doc A/64/170). Nueva York, EE.UU.
37. Wright, B.D., Pardey, P.G., Nottenberg, C. y Koo, B. 2007. Agricultural innovation: Investments and incentives. En R.E. Evenson y P. Pingali, eds. *Handbook of agricultural economics*, vol. 3. Amsterdam, Elsevier Science.
38. Helfer, L.H. 2004. *Intellectual property rights in plant varieties*. Roma, FAO.
39. GAT. 2010. *Transforming agricultural research for development*. Documento comicionado por el Foro Global de Investigación Agropecuaria (FGIA) como aporte para la Conferencia mundial sobre investigación agrícola para el desarrollo (GCARD), Montpellier, 28 – 31 de marzo de 2010.
40. Hazell, P., Poulton, C., Wiggins, S. y Dorward, A. 2007. *The future of small farms for poverty reduction and growth*. 2020 Documento de debate n.º 42. Washington, DC, IFPRI.
41. FIDA. 2010. *Informe sobre la pobreza rural 2011. Nuevas realidades, nuevos desafíos: Nuevas oportunidades para la generación del mañana*. Roma.
42. Scoones, I. y Thompson, J. 2009. *Farmer first revisited: Innovation for agricultural research and development*. Oxford, ITDG Publishing.
43. Shepherd, A.W. 2000. *Interpretación y Uso de la Información de Mercados*. Guías de extensión en comercialización, n.º 2. Roma, FAO.
44. FIDA/PMA. 2010. *The potential for scale and sustainability in weather index insurance for agriculture and rural livelihoods*, por P. Hazell, J. Anderson, N. Balzer, A. Hastrup Clemmensen, U. Hess y F. Rispoli. Roma.
45. Devereux, S. 2002. Can social safety nets reduce chronic poverty? *Development Policy Review*, 20(5): 657-675.
46. Ravallion, M. 2009. *Do poorer countries have less capacity for redistribution?* Policy Research Documento de trabajo n.º 5046. Washington, DC, Banco Mundial.
47. FAO. 2006. *Las directrices sobre el derecho a la alimentación: Documentos informativos y estudios de casos*. Roma.
48. Shepherd, A.W. 2007. *Approaches to linking producers to markets*. Agricultural Management, Marketing and Finance Occasional Paper, n.º 13. Roma, FAO.
49. Winters, P., Simmons, P. y Patrick, I. 2005. Evaluation of a hybrid seed contract between smallholders and a multinational company in East Java, Indonesia. *The Journal of Development Studies*, 41(1): 62–89.
50. Little, P.D. y Watts, M.J., eds. 1994. *Living under contract: Contract farming and agrarian transformation in Sub-Saharan Africa*. Madison, EE.UU., University of Wisconsin Press.
51. Berdegué, J., Balsevich, F., Flores, L. y Reardon, T. 2003. *Supermarkets and private standards for produce quality and safety in Central America: Development implications*. Informe para USAID bajo el proyecto RAISE/SPS, Universidad del Estado de Michigan y RIMISP.
52. Reardon, T., Timmer, C.P., Barrett, C.B. y Berdegué, J. 2003. The rise of supermarkets in Africa, Asia, and Latin America. *American Journal of Agricultural Economics*, 85(5): 1140-1146.
53. Johnson, N. y Berdegué, J.A. 2004. *Collective action and property rights for sustainable development: Property rights, collective action, and agribusiness*. IFPRI Informe de Política, 2004. Washington, DC.
54. Cavatassi, R., Gonzalez, M., Winters, P.C., Andrade-Piedra, J., Thiele, G. y Espinosa, P. 2010. *Linking smallholders to the new agricultural economy: The case of the Plataformas de Concertación in Ecuador*. ESA Documento de trabajo, n.º 09-06. Roma, FAO.
55. McCulloch, E.B., Pingali, P.L. y Stamoulis, K.G., eds. 2008. *The transformation of agri-food systems: Globalization, supply chains and smallholder farmers*. Roma, FAO y Londres, Earthscan.
56. Singh, S. 2002. Multi-national corporations and agricultural development: A study of contract farming in the Indian Punjab. *Journal of International Development*, 14: 181–194.
57. Dietrich, M. 1994. *Transaction cost economics and beyond: Towards a new economics of the firm*. Londres, Routledge.

## Abreviaturas

<b>CDB</b> Convenio sobre la Diversidad Biológica	<b>ISPA</b> intensificación sostenible de la producción agrícola
<b>CE</b> Comisión Europea	<b>MIP</b> manejo integrado de plagas
<b>CMNUCC</b> Convención Marco de las Naciones Unidas sobre el Cambio Climático	<b>N</b> nitrógeno
<b>DNR</b> Deutscher Naturschutzring	<b>N<sub>2</sub>O</b> óxido nitroso
<b>DPI</b> derechos de propiedad intelectual	<b>OCDE</b> Organización para la Cooperación y el Desarrollo Económicos
<b>FAO</b> Organización de las Naciones Unidas para la Agricultura y la Alimentación	<b>OIEA</b> Organismo Internacional de Energía Atómica
<b>FIDA</b> Fondo Internacional de Desarrollo Agrícola	<b>OMC</b> Organización Mundial del Comercio
<b>GAT</b> Global Authors' Team	<b>ONG</b> organización no gubernamental
<b>GCAIA</b> Grupo Consultivo sobre Investigación Agrícola Internacional	<b>P</b> fósforo
<b>GNFU</b> gestión de nutrientes en función de la ubicación	<b>PMA</b> Programa Mundial de Alimentos
<b>GNHC</b> Gross National Happiness Commission	<b>PNUD</b> Programa de las Naciones Unidas para el Desarrollo
<b>ha</b> hectárea	<b>PNUMA</b> Programa de las Naciones Unidas para el Medio Ambiente
<b>I+D</b> investigación y desarrollo	<b>PSA</b> pago por servicios ambientales
<b>IAASTD</b> Evaluación internacional del conocimiento, ciencia y tecnología en el desarrollo agrícola	<b>RFAA</b> recursos fitogenéticos para la alimentación y la agricultura
<b>ICARDA</b> Centro internacional de investigación agrícola en las zonas secas	<b>RDR</b> riego deficitario regulado
<b>ICRAF</b> Centro Mundial de Agrosilvicultura	<b>SGU</b> supergránulos de urea
<b>IFDC</b> Centro internacional de promoción de los fertilizantes	<b>t</b> toneladas
<b>IFPRI</b> Instituto Internacional de Investigación sobre Políticas Alimentarias	<b>TEEB</b> The Economics of Ecosystems and Biodiversity
<b>IITA</b> Instituto Internacional de Agricultura Tropical	<b>TIRFAA</b> Tratado Internacional sobre los Recursos Fitogenéticos para la Alimentación y la Agricultura
<b>IPCC</b> Grupo Intergubernamental de Expertos sobre el Cambio Climático	<b>UPOV</b> Unión Internacional para la Protección de las Obtenciones Vegetales
<b>IRRI</b> Instituto Internacional de Investigaciones sobre el Arroz	



The background of the page is a detailed botanical illustration. It features various green plants and leaves. In the top left, there are large, broad leaves with prominent veins. In the top right, there are smaller, more delicate leaves and clusters of small flowers. In the bottom right, there is a tall, slender plant with several large, round, green flower heads. The overall style is that of a classic botanical illustration, with fine lines and a naturalistic color palette of greens and yellows.

División de Producción y Protección Vegetal  
Organización de las Naciones Unidas  
para la Agricultura y la Alimentación  
Viale delle Terme di Caracalla  
00153 Roma, Italia

[www.fao.org/ag/agp](http://www.fao.org/ag/agp)  
[agp@fao.org](mailto:agp@fao.org)

*Diseño de la publicación* Graeme Thomas y Giulio Sansonetti  
*Portada* Giancarlo de Pol  
*Asistente editorial* Diana Gutiérrez  
*Ilustraciones* Alessandra d'Andrea, Cecilia Sanchez





ISBN 978-92-5-306871-5



9 789254 068714

I2215S/3/11.12