Nombre de la materia: Agricultura Urbana
Clave de la materia: 76973
Tipo de materia: Optativa
Créditos:
Fecha última de Revisión Curricular: Septiembre 2020
Materia y clave de la materia requisito: Ninguno

A) NOMBRE DEL CURSO: AGRICULTURA URBANA

Programa Sintético									
Agricultura Urbana									
Información general									
Tipo de propuesta curricular:	Nueva creación	x	Restructuración		Ajuste				
Tipo de materia:	Obligatorio		Optativa	x	Complementaria		Otra		
Materia compartida con otro PE o entidad académica	(x) No ( ) Sí ¿Con qué PE se comparte? _____ ¿De qué semestre? _____ ¿De qué entidad académica? _____								
Elaborado por:	Marcos Algara Siller Carolin Antoni Mariana Buendía Oliva Abraham Cardenas Tristan Lourdes Marcela López Mares Carlos Renato Ramos Palacios Madigan Martínez Parga Méndez								
Revisado por:	Gadjah Mada University, Indonesia								

Semestre	**Horas de teoría por semana**	**Horas de práctica por semana**	**Horas trabajo adicional estudiante por semana**	**Créditos**
	3	1	1	6

Programa Sintético		
Objetivo general	Conocer las estrategias básicas para diseñar, planificar y gestionar proyectos de agricultura urbana, así como para comprender las complejas relaciones entre la agricultura, las cadenas alimentarias y la producción urbana de alimentos.	
Objetivos específicos	• Aplicar sus conocimientos sobre la agricultura urbana como un instrumento para mejorar el uso de los recursos en las ciudades y abordar los problemas ambientales. • Aprender a analizar la relación entre el contexto urbano y la agricultura urbana desde un pensamiento complejo y una perspectiva transdisciplinaria.	
Competencia (s) profesional(es) específica(s) a la(s) que contribuye a desarrollar la materia	Los estudiantes • Realizarán tareas y resolverán problemas específicos relacionados con la Agricultura Urbana. • Formularán argumentos, discusiones y defenderán puntos de vista en presentaciones orales. • Podrán resolver exámenes de evaluación. • Analizarán literatura científica, académica y de divulgación. • Utilizarán la tecnología de la información y la comunicación en el proceso de aprendizaje como una herramienta para acceder al mundo globalizado. • Se darán cuenta del valor del uso y la correcta gestión del conocimiento.	
Desempeños de la competencia profesional específica a los que contribuye a desarrollar la materia	• Asumirán las responsabilidades según los criterios de calidad y relevancia para la sociedad, y contribuirán activamente a la identificación y solución de problemas urbanos, incluidas las disciplinas de sostenibilidad social, económica, política y ambiental. • Obtendrán habilidades de organización y gestión de proyectos. • Llevarán a cabo investigaciones sociales empíricas (encuestas, etc.) y realizarán mediciones de campo. • Sabrán cómo trabajar de forma independiente, pero también en equipo.	
Competencia (s) profesional(es) transversal(es) a la(s) que contribuye a desarrollar la materia	• Participarán en acciones a favor de la igualdad de oportunidades que mejoren la calidad de las situaciones urbanas. • Protegerán y utilizarán de manera responsable los recursos naturales relacionados con productos naturales y sostenibles de la agricultura urbana. • Analizarán y discutirán los factores y variables sobre todos los aspectos asociados en profundidad. Los graduados aprenderán a comunicarse en un entorno transdisciplinario.	
Objetivos específicos	**Unidades**	**Contenido**
	1. Introducción a la agricultura urbana.	Agricultura urbana y ciudades hacia la sostenibilidad. Los estudiantes podrán entender las ciudades como un subsistema social y ecológico, basado en la teoría del sistema ecológico social.

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		Además, podrán identificar el puente entre el sistema socioecológico y la agricultura urbana
	2. Dinámicas globales, regionales y locales.	Movimientos y políticas agrícolas urbanas globales Los estudiantes comprenderán la política global, regional y local y las dinámicas económicas y su conexión en el sistema alimentario global y local. Además, estarán familiarizados con los procesos agrícolas urbanos y la influencia en el desarrollo de la comunidad y la salud pública.
	3. Fundamentos ecológicos y hortícolas de los huertos urbanos.	Definición de productos ecológicos e impactos ambientales.
	4. Agricultura urbana, sociedad y recursos naturales.	Impactos sociales de la agricultura urbana. Los estudiantes podrán comprender los vínculos del nexo energía-agua-alimentos en el contexto del desarrollo económico de una ciudad; diferenciar las escalas de producción de alimentos relacionadas con la sostenibilidad; Para entender cómo la participación de la sociedad impulsa la producción de alimentos. Derivado de estos, el estudiante podrá diseñar un programa de producción de alimentos urbanos correlacionados con el nexo basado en un enfoque participativo

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Método y practica	**Método**	Presentación de temas a través de videos, presentaciones en power point y conferencias. El curso se desarrollará principalmente como un seminario-taller. El principal atractivo de este método radica en la posibilidad de una reflexión colectiva sobre cada uno de los temas analizados durante el programa. El contenido de la clase se entregará a través de lecturas y presentaciones en clase y en casa. El curso será dinámico y participativo, basado en discusiones. Cada estudiante tiene que entregar un ensayo sobre un tema auto-seleccionado sobre Agricultura Urbana. Como preparación para las clases, cada estudiante debe leer un artículo específico y desarrollar un ensayo (máximo 1 página), donde debe expresar su PROPIA opinión, experiencias, dudas y / o pensamientos. Este texto debe entregarse la noche anterior a la siguiente clase. El profesor también proporciona presentaciones teóricas e introduce nuevos temas.	
	Práctica	En la Unidad 4: La clase visitará un proyecto agrícola urbano. Luego, el grupo se dividirá en pequeños equipos (3-5 personas) para escribir un informe sobre un proyecto agrícola urbano en el área urbana. Cada grupo debe analizar los cultivos, el uso de fertilizantes, la historia del proyecto, así como el plan financiero y de manejo de las tetas. Finalmente, cada grupo presenta los resultados.	
Método de evaluación	**Examen parcial**	20%	Examen de las unidades 1 y 2
		20%	Examen de las unidades 3
		20%	Examen de las unidades 4
		40%	Trabajo de investigación
	Examen final	La calificación final ordinaria corresponderá al promedio ponderado de las tres evaluaciones parciales (20% cada una) y un trabajo de investigación (40%): 100%	
	Otras actividades	Trabajo en equipo	
Bibliografía y recursos digitales	**Bibliografía**	Abrantes, P., Rocha, J., Marques da Costa, E., Gomes, E., Morgado, P., & Costa, N. (2019). Modelling urban form: A multidimensional typology of urban occupation for spatial analysis. Environment and Planning B: Urban Analytics	

Programa Sintético		
		and City Science, 46(1), 47–65. https://doi.org/10.1177/2399808317700140 Anthopoulou, T., Nikolaidou, S., Partalidou, M., & Petrou, M. (2018). The Emergence of Municipal Allotment Gardens in Greece in Times of Crisis. Governance Challenges for New Urban Gardening Practices. 181–199. https://doi.org/10.1007/978-3-319-71037-2_11 Arizpe, N. G. (2012). Understanding Agricultural Change: Integrated analysis of societal metabolism at different scales. (September), 1–251. Retrieved from http://www.tesisenred.net/bitstream/handle/10803/117594/ngar1de1.pdf?sequence=1 Azunre, G. A., Amponsah, O., Peprah, C., Takyi, S. A., & Braimah, I. (2019). A review of the role of urban agriculture in the sustainable city discourse. Cities, 93(April), 104–119. https://doi.org/10.1016/j.cities.2019.04.006 Barajas M. G. & V.L. Barradas. 2011. Microclimate and sapling survival under organic and polyethylene mulch in a tropical deciduous forest. Bol.Soc.Bot.Méx. 88:27-34 Barthel S. 2013. Urban gardens, agriculture, and water management: Sources of resilience for long-term food security in cities. Ecological Economics, 86: 224-234 Barthel, S. et al, 2010, Social-ecological memory in urban gardens-Retaining the capacity for management of ecosystem services, 20:255-265 Basant, M., et al., The Security of Water, Food, Energy and Liveability of Cities, Springer, Dordrecht Heidelberg Bauer, M.; Mösle, P., Schwarz, M. (2010): Green Building. Berlin, Heidelberg: Springer-Verlag Berlin Heidelberg; Springer e-books.

Programa Sintético		
		Bausch, J.C., et al., 2015, Development pathways at the agriculture-urban interface: the case of Central Arizona Bizikova, L., Roy, D., Swanson, D., Venema, H. D., & McCandless, M. (2013). The Water-Energy-Food Security Nexus : Towards a practical planning and decision-support framework for landscape investment and risk management International Institute for Sustainable Development. Manitoba, Canada. Borssoi, J. A., Uribe-Opazo, M. A., & Galea Rojas, M. (2009). Diagnostic techniques applied in geostatistics for agricultural data analysis. Revista Brasileira de Ciência Do Solo, 33(6), 1561–1570. https://doi.org/10.1590/s0100-06832009000600005 Brunetta, G., & Salata, S. (2019). Mapping urban resilience for spatial planning-A first attempt to measure the vulnerability of the system. Sustainability (Switzerland), 11(8). https://doi.org/10.3390/su11082331 Burgin, S., 2018, 'Back to the future'? Urban backyards and food self-sufficiency Chakraborti, S., Das, D. N., Mondal, B., Shafizadeh-Moghadam, H., & Feng, Y. (2018). A neural network and landscape metrics to propose a flexible urban growth boundary: A case study. Ecological Indicators, 93(May), 952–965. https://doi.org/10.1016/j.ecolind.2018.05.036 Chakraborti, S., Das, D. N., Mondal, B., Shafizadeh-Moghadam, H., & Feng, Y. (2018). A neural network and landscape metrics to propose a flexible urban growth boundary: A case study. Ecological Indicators, 93(May), 952–965. https://doi.org/10.1016/j.ecolind.2018.05.036 Chapin, F.S., Kofinas, G.P. y Folke, C. 2009. Principles of Ecosystem Stewardship Resilience-Based Natural

Programa Sintético		
		Resource Management in a Changing World. Stockholm: Springer, 2009. ISBN 978-0-387-73032-5 Chen, X., Yan, J. F., Chen, Z., Luo, G. P., Song, Q., & Xu, W. Q. (2009). A spatial geostatistical analysis of impact of land use development on groundwater resources in the sangong oasis region using remote sensing imagery and data. Journal of Arid Land, 1(1), 1–8. https://doi.org/10.3724/SP.J.1227.00001 Chrysoulakis, N., et al., 2013, Sustainable urban metabolism as a link between bio-physical sciences and urban planning: The BRIDGE project, Landscape and Urban Planning, 112:100-117 Consejo Nacional de Evaluación de la Política de Desarrollo Social. Dimensiones de la seguridad alimentaria: Evaluación Estratégica de Nutrición y Abasto. México, DF. CONEVAL, 2010 Covarrubias, M. (2019). The nexus between water, energy and food in cities: towards conceptualizing socio-material interconnections. Sustainability Science, 14(2), 277–287. https://doi.org/10.1007/s11625-018-0591-0 De Wrachien, D. (2003). Land Use Planning : a Key to Sustainable Agriculture. Conservation Agricuture, 471–483. De Zeeuw, H. (2004). Introduction to urban agriculture. Nairobi Course. Leusden, Urban Harvest, UAF Domenic Vitiello, Laura Wolf-Powers; Growing food to grow cities? The potential of agriculture foreconomic and community development in the urban United States, Community Development Journal, Volume 49, Issue 4, 1 October 2014, Pages 508–523, https://doi.org/10.1093/cdj/bst087

Programa Sintético		
		Doss L.H., A. Abdulkadir, H. Amadou, S. Sangare & E. Schlecht (2012). Explrong the diversity of urban and peri-urban agricultural systems in Sudano-Sahelian West Africa: An attempt towards a regional typology. Landscape and Urban Planning, 102: 197-206 Drechsel, P., et al. 2007, Rural-Urban Food, Nutrient and Virtual Water Flows in Selected West African Cities, Research Report 115, International Water Management Institute Drescher, A. (2001). The integration of Urban Agriculture into urban planning–An analysis of the current status and constraints. Annotated Bibliography on Urban Agriculture, 554–616. Retrieved from http://areeweb.polito.it/didattica/UPWARD/dwd/agricolture/dreschler.pdf E. Duchemin, F. Wegmuller and A.-M. Legault. (2008). Urban agriculture: multi-dimensional tools for social development in poor neighbourhoods. The Journal of Field Actions Science Reports, 1, 43:52 Ebert, T.; Eßig, N.; Hauser, G. (2011): Green building certification systems. Assessing sustainability, international system comparison, economic impact of certifications. First edition. München: Edition Detail; Institut für internationale Architektur-Dokumentation (Edition Detail green books). Edwards-Jones, G. (2010). Does eating local food reduce the environmental impact of food production and enhance consumer health? Proceedings of the Nutrition Society, 69(4), 582–591. https://doi.org/10.1017/s0029665110002004 EPA. (2011). Partnership award for sustainable communities-Urban Farm Business Plan Handbook. EPA, p. 77. Retrieved from

Programa Sintético		
		http://www.sustainablecommunities.gov/community.html#FC5 Fantini, A. (2016). La agricultura urbana y periurbana como práctica de transformación territorial, económica, social y política. Universidad Autónoma de Barcelona. FAO (2004) Globalization of food systems in developing countries: impact on food security and nutrition. FAO (S/F) Food for the Cities multi-disciplinary initiative position. FAO Investment Centre. (1995). Guidelines for the design of agricultural investmet projects (Vol. 7, p. 165). Vol. 7, p. 165. https://doi.org/9251036225 FAO, 2001, Urban and Peri-urban Agriculture, 1. Edition, SPFS/DOC/27.8, Rome FAO, 2014, Growing Greener Cities in Latin America and the Caribbean, Rome FAO. (2007). Profitability and sustainability of urban and peri-urban agriculture. In FAO (Ed.), Agricultural Management, Marketing and Finance Occasional Paper. Retrieved from http://books.google.com/books?id=c7l9kmC7PZ0C%7B&%7Dpgis=1 Galli, A., Wiedmann, T., Ercin, E., Knoblauch, D., Ewing, B., & Giljum, S. (2012). Integrating Ecological, Carbon and Water footprint into a “footprint Family” of indicators: Definition and role in tracking human pressure on the planet. Ecological Indicators, 16, 100–112. https://doi.org/10.1016/j.ecolind.2011.06.017 Game, I., et al., 2015, Urban Agriculture, GSDR Brief

Programa Sintético		
		García-Llorente, et al, 2016, Social Farming in the Promotion of Social-Ecological Sustainability in Rural and Periurban Areas, Sustainability, 8 Gerda R. Wekerle. (2004). Food Justice Movements, Policy, Planning, and Networks. Journal of Planning Education and Research. Volume: 23 issue: 4, page(s): 378-386 Global panel on agriculture and food systems of nutrition (2017) Urban diets and nutrition: Trends, challenges and opportunities for policy action. Grimm, N.B., et al, 2010, Integrated Approaches to Long-Term Studies of Urban Ecological Systems, 50(7) Gutman, P. (1987). Urban agriculture : the potential and limitations of an urban self-reliance strategy. 9(2), 1–6. Hersperger, A. M., Oliveira, E., Pagliarin, S., Palka, G., Verburg, P., Bolliger, J., & Grădinaru, S. (2018). Urban land-use change: The role of strategic spatial planning. Global Environmental Change, 51(March), 32–42. https://doi.org/10.1016/j.gloenvcha.2018.05.001 Hersperger, A. M., Oliveira, E., Pagliarin, S., Palka, G., Verburg, P., Bolliger, J., & Grădinaru, S. (2018). Urban land-use change: The role of strategic spatial planning. Global Environmental Change, 51(May), 32–42. https://doi.org/10.1016/j.gloenvcha.2018.05.001 Hillier, J., Hawes, C., Squire, G., Hilton, A., Wale, S., & Smith, P. (2009). The carbon footprints of food crop production. International Journal of Agricultural Sustainability, 7(2), 107–118. https://doi.org/10.3763/ijas.2009.0419 http://www.fao.org/in-action/food-for-cities-programme/toolkit/introduction/en/

Programa Sintético		
		Hubert De Bon, Laurent Parrot, Paule Moustier. Sustainable urban agriculture in developing countries. A review. Agronomy for Sustainable Development, Springer Verlag/EDP Sciences/INRA, 2010, 30 (1). IPES-Food. 2017. What makes urban food policy happen? Insights from five case studies. International Panel of Experts on Sustainable Food Systems. www.ipes-food.org Ismail, W. A. W., & Said, I. (2015). Integrating the Community in Urban Design and Planning of Public Spaces: A Review in Malaysian Cities. Procedia - Social and Behavioral Sciences, 168, 357–364. https://doi.org/10.1016/j.sbspro.2014.10.241 Jaramillo Avila, C. (2003). Aspectos Económicos de la Agricultura Urbana. Agricultura Urbana, (7), 35. Kemmis, S., McTaggart, R., & Nixon, R. (2013). The action research planner: Doing critical participatory action research. Springer Science & Business Media. Khan, S., & Hanjra, M. A. (2009). Footprints of water and energy inputs in food production - Global perspectives. Food Policy, 34(2), 130–140. https://doi.org/10.1016/j.foodpol.2008.09.001 Khan, S., Khan, M. A., Hanjra, M. A., & Mu, J. (2009). Pathways to reduce the environmental footprints of water and energy inputs in food production. Food Policy, 34(2), 141–149. https://doi.org/10.1016/j.foodpol.2008.11.002 Korth, M., Stewart, R., Langer, L., Madinga, N., Rebelo Da Silva, N., Zaranyika, H., … De Wet, T. (2014). What are the impacts of urban agriculture programs on food security in low and middle-income countries: A systematic review. Environmental Evidence, 3(1), 1–10. https://doi.org/10.1186/2047-2382-3-21

Programa Sintético		
		Lan, T., Guo, S., Han, J., Yang, Y., Zhang, K., Yang, W., & Li, P. (2019). ur na l P re of. Urban Forestry & Urban Greening, 126430. https://doi.org/10.1016/j.ufug.2019.126430 Leck, H., Conway, D., Bradshaw, M., & Rees, J. (2015). Tracing the Water–Energy–Food Nexus: Description, Theory and Practice. Geography Compass, 9(8), 445–460. https://doi.org/10.1111/gec3.12222 Lehmann, S. (2018). Implementing the Urban Nexus approach for improved resource-efficiency of developing cities in Southeast-Asia. City, Culture and Society, 13(March 2017), 46–56. https://doi.org/10.1016/j.ccs.2017.10.003 Losada H., R. Bennett, R. Soriano, J. Vieyra & J. Cortes. (2000). Urban agriculture in Mexico City: Functions porovided by the use of space for dairy based livelihoods. Cities, 17 (6): 419-431 Lovell, S. T. (2010). Multifunctional Urban Agriculture for Sustainable Land Use Planning in the United States. Sustainability, 2(8), 2499–2522. https://doi.org/10.3390/su2082499 Lovell, S.T, 2010, Multifunctional Urban Agriculture for Sustainable Land Use Planning in the United States, Sustainability, 2(8):2499-2522, doi:10.3390/su2082499 Maheshwari, B. etal, 2014 The Security of Water, Food, Energy and Liveability of Cities, Springer Manik, S. M. N., Pengilley, G., Dean, G., Field, B., Shabala, S., & Zhou, M. (2019). Soil and Crop Management Practices to Minimize the Impact of Waterlogging on Crop Productivity. 10(February), 1–23. https://doi.org/10.3389/fpls.2019.00140 Mansfield, B., & Mendes, W. (2013). Municipal Food Strategies and Integrated Approaches to Urban Agriculture: Exploring

Programa Sintético		
		Three Cases from the Global North. International Planning Studies, 18(1), 37–60. https://doi.org/10.1080/13563475.2013.750942 McGinnins, M.D., et al. 2014, Social-ecological system framework: initial changes and continuing challenges Meghan Z. Gough & John Accordino. (2013). Public Gardens as Sustainable Community Development Partners: Motivations, Perceived Benefits, and Challenges. Urban Affairs Review, 49(6) 851–887 Mougeot, L. J. (Ed.). (2005). Agropolis: The social, political, and environmental dimensions of urban agriculture. IDRC. (case studies approached from different perspectives) Mougeot, L. J. A. (2006). Growing Better Cities: Urban Agriculture for Sustainable Development (In Focus). Mougeot, L.J.A., 2001, Urban Agriculture: Definition, Presence, Potentials and Risks, and Policy Challenges, Cities Feeding People Series Report 31 Oliveira, E. (2018). Can Strategic Spatial Planning Contribute to Land Degradation Reduction in Urban Regions ? State of the Art and Future Research. https://doi.org/10.3390/su10040949 Oliver, M. A. (2010). Geostatistical Applications for Precision Agriculture. In M. A. Oliver (Ed.), The British Journal of Psychiatry (Springer, Vol. 112). https://doi.org/10.1007/978-90-481-9133-8 Orsini, F., Kahane, R., Nono-Womdim, R., & Gianquinto, G. (2013). Urban agriculture in the developing world: A review. Agronomy for Sustainable Development, 33(4), 695–720. https://doi.org/10.1007/s13593-013-0143-z

Programa Sintético		
		Park, P. (1992). Qué es la investigación-acción participativa: perspectivas teóricas y Metodológicas. In La investigación-acción participativa: inicios y desarrollos (pp. 135-174). Editorial Popular. Pearson, L. J., Pearson, L., & Pearson, C. J. (2010). Sustainable urban agriculture: Stocktake and opportunities. International Journal of Agricultural Sustainability, 8(1–2), 7–19. https://doi.org/10.3763/ijas.2009.0468 Peña Osorio, M. Y. (2010). Participación de los SIG en la formulación de instrumentos de planificación y norma urbanística [GIS participation in planning's instruments and urbanistic norm formulation]. Ventana Informatica, (22), 55–76. https://doi.org/10.30554/ventanainform.22.209.2010 Pierce, F. J., & Frye, W. W. (1998). Advances in soil and water conservation. CRC Oress Taylor and Francis Group Pimbert, M. P. (2009). Towards Food Sovereignty. Número 141 de Gatekeeper Series, (November), 20. https://doi.org/ISSN 1357-9258 Poli, D. (2015). Sustainable Food , Spatial Planning and Agro - Urban Public Space In The Bioregional City. (October), 83–97. Pothukuchi, K., & Kaufman, J. L. (1999). Placing the food system on the urban agenda: The role of municipal institutions in food systems planning. Agriculture and Human Values, 16(2), 213–224. https://doi.org/10.1023/A:1007558805953 Pretty, J. N. (1995). Participatory learning for sustainable agriculture. World development, 23(8), 1247-1263. Quon, S., & Development, I. (1999). Planning for Urban Agriculture : A Review of Tools and Strategies for Urban

Programa Sintético		
		Planners Cities Feeding People Series Report 28 Planning for Urban Agriculture : A Review of Tools and Strategies for Urban Planners. Rasul, G. (2014). Food, water, and energy security in South Asia: A nexus perspective from the Hindu Kush Himalayan region. Environmental Science and Policy, 39, 35–48. https://doi.org/10.1016/j.envsci.2014.01.010 Santo, Raychel, Anne Palmer, and Brent Kim. 2016. Vacant Lots to Vibrant Plots: A Review of the Benefits and Limitations of Urban Agriculture. Johns Hopkins Center for a Livable Future. https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/_pdf/research/clf_reports/urban-ag-literature-review.pdf Sanz Sanz, E., Martinetti, D., & Napoléone, C. (2018). Operational modelling of peri-urban farmland for public action in Mediterranean context. Land Use Policy. https://doi.org/10.1016/j.landusepol.2018.04.003 Sarker, A., Bornman, J., & Marinova, D. (2019). A Framework for Integrating Agriculture in Urban Sustainability in Australia. Urban Science, 3(2), 15. https://doi.org/10.3390/urbansci3020050 Säumel I, I. Kotsyuk, M. Hölscher, C. Lenkereit, F. Weber, I. Kowarik. (2012). How healthy is urban horticulture in high traffic areas? Trace metal concentrations in vegetable crops from plantings within inner city neighborhoods in Berlin, Germany. Environmental Pollution, 165: 124-1332 Scheromm, P., & Mousselin, G. (2017). The Proliferation of Collective Gardens in Lisbon (Portugal) and Montpellier (France): Urban Residents Demand and Municipal Support. 201–217. https://doi.org/10.1007/978-3-319-71037-2_12

Programa Sintético		
		Schram-bijkerk, D., Otte, P., Dirven, L., & Breure, A. M. (2018). Science of the Total Environment Indicators to support healthy urban gardening in urban management. Science of the Total Environment, 621, 863–871. https://doi.org/10.1016/j.scitotenv.2017.11.160 Smidt, S. J., Tayyebi, A., Kendall, A. D., Pijanowski, B. C., & Hyndman, D. W. (2018). Agricultural implications of providing soil-based constraints on urban expansion : Land use forecasts to 2050. Journal of Environmental Management, 217, 677–689. https://doi.org/10.1016/j.jenvman.2018.03.042 Smit, J., Nasr, J., & Ratta, A. (1996). Urban agriculture: food, jobs and sustainable cities. New York, USA, 2, 35-37. http://www.jacsmit.com/book.html Chapter 6, Which Organizations Influence Urban Agriculture? Smith, V. M., Greene, R. B., & Silbernagel, J. (2013). The social and spatial dynamics of community food production: A landscape approach to policy and program development. Landscape Ecology, 28(7), 1415–1426. https://doi.org/10.1007/s10980-013-9891-z Specht, K. et al, 2014, Urban agriculture of the future: an overview of sustainability aspects of food production in and on buildings, Agric Hum Values 31:33-51 Tann, L. Von Der, Sterling, R., Zhou, Y., & Metje, N. (2019). ScienceDirect Systems approaches to urban underground space planning and management – A review. Underground Space, (xxxx). https://doi.org/10.1016/j.undsp.2019.03.003 Tilman D. et al. (2001). Forecasting Agriculturally Driven Global Environmental Change. Science 292, 281 Tornaghi, C., 2014, Critical geography of urban agriculture, 38(4):551-567, Progress in Human Geography

Programa Sintético		
		Torreggiani D., E. Dall'Ara & P. Tassinari. 2012. The urban nature of agriculture: Bidirectional trends between city and countryside. Cities, 29: 412-416 United States Department of Agriculture. (2016). Urban Agriculture Tool Kit. 18. Retrieved from https://www.usda.gov/sites/default/files/documents/urban-agriculture-toolkit.pdf Velazquez L.S. 2005. Organic greenroof architecture: Sustainable design for the new millennium. Environmental Quality Management. Wiley InterScience (online): 73-85 Walters, J. P., Archer, D. W., Sassenrath, G. F., Hendrickson, J. R., Hanson, J. D., Halloran, J. M., … Alarcon, V. J. (2016). Exploring agricultural production systems and their fundamental components with system dynamics modelling. Ecological Modelling, 333, 51–65. https://doi.org/10.1016/j.ecolmodel.2016.04.015 Withman A. & S. DeJohn (Editors of the National Gardening Association). 2009. Organic Gardening for Dummies. Wiley Publishing Inc. 2nd. Edition. Indianapolis, Indiana, U.S.A. 388 p. Zhang, C., Chen, X., Li, Y., Ding, W., & Fu, G. (2018). Water-energy-food nexus: Concepts, questions and methodologies. Journal of Cleaner Production, 195, 625–639. https://doi.org/10.1016/j.jclepro.2018.05.194
	Recursos digitales	FAO - Committee on Agriculture, Fifteenth Session. Urban and peri-urban agriculture, 25 - 29 January 1999 http://www.fao.org/unfao/bodies/coag/Coag15/X0076e.htm World Food Summit: five years later (FAO, Rome June 2002) . Feeding an increasingly urban world http://www.fao.org/worldfoodsummit/english/newsroom/focus/focus2.htm

Programa Sintético		
		World Urban Forum: http://www.un-habitat.org/categories.asp?catid=535 Third Meeting of the Support Group of Urban Agriculture (SGUA) March 18 - 19, 1996 at the International Development Research Centre, Ottawa, Canada. http://www.crdi.ca/en/ev-2442-201-1-DO_TEMA.html The Quito declaration. http://www.idrc.ca/uploads/user-S/10401380100Declaration-Ingles.pdf The La Paz Declaration. http://www.fao.org.sv/noticias/noticias.php High Level Conference on Food Security, Climate change and energy (FAO, Rome 3-5 June 2007). http://www.fao.org/foodclimate/hlc-home/en/ **Videos** Background of the Sustainable Development Goals | UNDP: http://www.undp.org/content/undp/en/home/sustainable-development-goals/background.html Four Important Lessons from Cuba's Urban Food Survival Strategy: http://blogs.worldwatch.org/four-lessons-cuba-food/ New Vision for Agriculture | World Economic Forum: https://www.weforum.org/projects/new-vision-for-agriculture

B) CONTENIDOS Y MÉTODOS POR UNIDADES Y TEMAS

Unidad 1. Introducción a la agricultura urbana	6 h
Tema 1.1 Definición e historia de la agricultura urbana y sistemas socio-ecológicos	**3h**

Subtema	1.1.1 Sistemas socio-ecológicos 1.1.2 Definición e historia de la agricultura urbana y sistemas socio-ecológicos	
Tema 1.2 Interacción entre el sistema socio-ecológico y la agricultura urbana		**3h**
Subtema	1.2.1 Flujos alimentarios en las ciudades 1.2.2 Flujos agua-energía en las ciudades 1.2.3 Agricultura urbana y sustentabilidad urbana	

Bibliografía y recursos digitales	**Bibliografía**	**1.1.1 SISTEMAS SOCIO-ECOLÓGICOS** Chapin, F.S., Kofinas, G.P. y Folke, C. 2009. Principles of Ecosystem Stewardship Resilience-Based Natural Resource Management in a Changing World. Stockholm: Springer, 2009. ISBN 978-0-387-73032-5 McGinnins, M.D., et al. 2014, Social-ecological system framework: initial changes and continuing challenges **1.1.2 DEFINICIÓN E HISTORIA DE LA AGRICULTURA URBANA Y SISTEMAS SOCIO-ECOLÓGICOS** Burgin, S., 2018, 'Back to the future'? Urban backyards and food self-sufficiency FAO, 2001, Urban and Peri-urban Agriculture, 1. Edition, SPFS/DOC/27.8, Rome FAO, 2014, Growing Greener Cities in Latin America and the Caribbean, Rome Game, I., et al., 2015, Urban Agriculture, GSDR Brief Lovell, S.T, 2010, Multifunctional Urban Agriculture for Sustainable Land Use Planning in the United States, Sustainability, 2(8):2499-2522, doi:10.3390/su2082499 Mougeot, L.J.A., 2001, Urban Agriculture: Definition, Presence, Potentials and Risks, and Policy Challenges, Cities Feeding People Series Report 31 Specht, K. et al, 2014, Urban agriculture of the future: an overview of sustainability aspects of food production in and on buildings, Agric Hum Values 31:33-51 Tornaghi, C., 2014, Critical geography of urban agriculture, 38(4):551-567, Progress in Human Geography **1.2.1 FLUJOS ALIMENTARIOS EN LAS CIUDADES**

		Drechsel, P., et al. 2007, Rural-Urban Food, Nutrient and Virtual Water Flows in Selected West African Cities, Research Report 115, International Water Management Institute **Otros**: http://www.fao.org/in-action/food-for-cities-programme/toolkit/introduction/en/ **1.2.2 FLUJOS AGUA-ENERGÍA EN LAS CIUDADES** Barthel, S. et al. 2013, Urban gardens, agriculture, and water management: Sources of resilience for long-term food security in cities, Ecological Economics 86:224-234 Chrysoulakis, N., et al., 2013, Sustainable urban metabolism as a link between bio-physical sciences and urban planning: The BRIDGE project, Landscape and Urban Planning, 112:100-117 Maheshwari, B. etal, 2014 The Security of Water, Food, Energy and Liveability of Cities, Springer **1.2.3 AGRICULTURA URBANA Y SUSTENTABILIDAD URBANA** Barthel, S. et al, 2010, Social-ecological memory in urban gardens-Retaining the capacity for management of ecosystem services, 20:255-265 Basant, M., et al., The Security of Water, Food, Energy and Liveability of Cities, Springer, Dordrecht Heidelberg Bausch, J.C., et al., 2015, Development pathways at the agriculture-urban interface: the case of Central Arizona García-Llorente, et al, 2016, Social Farming in the Promotion of Social-Ecological Sustainability in Rural and Periurban Areas, Sustainability, 8 Grimm, N.B., et al, 2010, Integrated Approaches to Long-Term Studies of Urban Ecological Systems, 50(7)

Métodos de enseñanza	El curso se establecerá principalmente como un seminario-taller. El principal atractivo de este método radica en la posibilidad de una reflexión colectiva sobre cada uno de los temas planteados en el programa, en base a ciertos conceptos clave derivados de las lecturas y presentaciones en clase. La experiencia de una lectura personal se ve reforzada por la sinergia de la reflexión colectiva.
Actividades de aprendizaje	Actividad de lectura Conferencia Discusión interactiva Presentación (individual) Avances de borrador

Unidad 2. Dinámicas globales, regionales y locales			**18h**
Tema 2.1 Introducción al sistema alimentario y seguridad alimentaria. Ejemplos globales, regionales y locales			**6h**
Subtema	2.1.1. La seguridad alimentaria en el contexto de los objetivos de desarrollo sostenible 2.1.2. Dimensiones de seguridad alimentaria 2.1.3. Disponibilidad, acceso, consumo y producción alimentaria 2.1.4. Ejemplos		
Tema 2.2 Políticas globales y dinámicas económicas en el sistema alimentario, provocando procesos agrícolas urbanos			**6h**
Subtema	2.2.1 Las regiones agrícolas urbanas y su gobernanza		
Tema 2.3 Impacto de la agricultura urbana en el desarrollo comunitario, la seguridad alimentaria y la salud pública			**6h**
Subtema	2.3.1 La agricultura urbana y su impacto en el desarrollo comunitario 2.3.2 Agricultura urbana y biodiversidad 2.3.3 Integración de la agricultura urbana en las políticas urbanas 2.3.4 La agricultura urbana como estrategia de desarrollo municipal sostenible 2.3.5 La dinámica de los agricultores urbanos		
Bibliografía y recursos digitales	**Bibliografía**	**2.1.1. LA SEGURIDAD ALIMENTARIA EN EL CONTEXTO DE LOS OBJETIVOS DE DESARROLLO SOSTENIBLE** Hubert De Bon, Laurent Parrot, Paule Moustier. Sustainable urban agriculture in developing countries. A review. Agronomy for	

Sustainable Development, Springer Verlag/EDP Sciences/INRA, 2010, 30 (1).

Santo, Raychel, Anne Palmer, and Brent Kim. 2016. Vacant Lots to Vibrant Plots: A Review of the Benefits and Limitations of Urban Agriculture. Johns Hopkins Center for a Livable Future. https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/_pdf/research/clf_reports/urban-ag-literature-review.pdf

2.1.2. DIMENSIONES DE SEGURIDAD ALIMENTARIA

Consejo Nacional de Evaluación de la Política de Desarrollo Social. Dimensiones de la seguridad alimentaria: Evaluación Estratégica de Nutrición y Abasto. México, DF. CONEVAL, 2010

2.1.3. DISPONIBILIDAD, ACCESO, CONSUMO Y PRODUCCIÓN ALIMENTARIA

FAO (S/F) Food for the Cities multi-disciplinary initiative position.

FAO (2004) Globalization of food systems in developing countries: impact on food security and nutrition.

Global panel on agriculture and food systems of nutrition (2017) Urban diets and nutrition: Trends, challenges and opportunities for policy action.

2.1.4. EJEMPLOS

IPES-Food. 2017. What makes urban food policy happen? Insights from five case studies. International Panel of Experts on Sustainable Food Systems. www.ipes-food.org

2.3.1 LA AGRICULTURA URBANA Y SU IMPACTO EN EL DESARROLLO COMUNITARIO

Domenic Vitiello, Laura Wolf-Powers; Growing food to grow cities? The potential of agriculture foreconomic and community development in the urban United States, Community Development Journal, Volume 49, Issue 4, 1 October 2014, Pages 508–523, https://doi.org/10.1093/cdj/bst087

E. Duchemin, F. Wegmuller and A.-M. Legault. (2008). Urban agriculture: multi-dimensional tools for social development in poor neighbourhoods. The Journal of Field Actions Science Reports, 1, 43:52

2.3.4 LA AGRICULTURA URBANA COMO ESTRATEGIA DE DESARROLLO MUNICIPAL SOSTENIBLE

Anthopoulou, T., Nikolaidou, S., Partalidou, M., & Petrou, M. (2018). The Emergence of Municipal Allotment Gardens in Greece in Times of Crisis. Governance Challenges for New Urban Gardening Practices. 181–199. https://doi.org/10.1007/978-3-319-71037-2_11

Mansfield, B., & Mendes, W. (2013). Municipal Food Strategies and Integrated Approaches to Urban Agriculture: Exploring Three Cases from the Global North. International Planning Studies, 18(1), 37–60. https://doi.org/10.1080/13563475.2013.750942

Mougeot, L. J. A. (2006). Growing Better Cities: Urban Agriculture for Sustainable Development (In Focus).

Mougeot, L. J. A. (2005). Agropolis. The social, political and environmental dimensions of Urban Agriculture (Earthscan). London: James and James.

Pothukuchi, K., & Kaufman, J. L. (1999). Placing the food system on the urban agenda: The role of municipal institutions in food systems planning. Agriculture and Human Values, 16(2), 213–224. https://doi.org/10.1023/A:1007558805953

Scheromm, P., & Mousselin, G. (2017). The Proliferation of Collective Gardens in Lisbon (Portugal) and Montpellier (France): Urban Residents Demand and Municipal Support. 201–217. https://doi.org/10.1007/978-3-319-71037-2_12

Smith, V. M., Greene, R. B., & Silbernagel, J. (2013). The social and spatial dynamics of community food production: A landscape approach to policy and program development.

Landscape Ecology, 28(7), 1415–1426. https://doi.org/10.1007/s10980-013-9891-z

2.3.5. LAS DINÁMICAS DE LOS AGRICULTORES URBANOS

De Zeeuw, H. (2004). Introduction to urban agriculture. Nairobi Course. Leusden, Urban Harvest, UAF

Fantini, A. (2016). La agricultura urbana y periurbana como práctica de transformación territorial, económica, social y política. Universidad Autónoma de Barcelona.

FAO. (2007). Profitability and sustainability of urban and peri-urban agriculture. In FAO (Ed.), Agricultural Management, Marketing and Finance Occasional Paper. Retrieved from http://books.google.com/books?id=c7l9kmC7PZ0C%7B&%7Dpgis=1

Jaramillo Avila, C. (2003). Aspectos Económicos de la Agricultura Urbana. Agricultura Urbana, (7), 35.

Mougeot, L. J. A. (2005). Agropolis. The social, political and environmental dimensions of Urban Agriculture (Earthscan). London: James and James.

Sanz Sanz, E., Martinetti, D., & Napoléone, C. (2018). Operational modelling of peri-urban farmland for public action in Mediterranean context. Land Use Policy. https://doi.org/10.1016/j.landusepol.2018.04.003

United States Department of Agriculture. (2016). Urban Agriculture Tool Kit. 18. Retrieved from https://www.usda.gov/sites/default/files/documents/urban-agriculture-toolkit.pdf

Walters, J. P., Archer, D. W., Sassenrath, G. F., Hendrickson, J. R., Hanson, J. D., Halloran, J. M., … Alarcon, V. J. (2016). Exploring agricultural production systems and their fundamental components with system dynamics modelling. Ecological

		Modelling, 333, 51–65. https://doi.org/10.1016/j.ecolmodel.2016.04.015
	Recursos digitales	**Sitios web** FAO - Committee on Agriculture, Fifteenth Session. Urban and peri-urban agriculture, 25 - 29 January 1999 http://www.fao.org/unfao/bodies/coag/Coag15/X0076e.htm World Food Summit: five years later (FAO, Rome June 2002) . Feeding an increasingly urban world http://www.fao.org/worldfoodsummit/english/newsroom/focus/focus2.htm World Urban Forum: http://www.un-habitat.org/categories.asp?catid=535 Third Meeting of the Support Group of Urban Agriculture (SGUA) March 18 - 19, 1996 at the International Development Research Centre, Ottawa, Canada. http://www.crdi.ca/en/ev-2442-201-1-DO_TEMA.html The Quito declaration. http://www.idrc.ca/uploads/user-S/10401380100Declaration-Ingles.pdf The La Paz Declaration. http://www.fao.org.sv/noticias/noticias.php High Level Conference on Food Security, Climate change and energy (FAO, Rome 3-5 June 2007). http://www.fao.org/foodclimate/hlc-home/en/ **Videos** Background of the Sustainable Development Goals | UNDP http://www.undp.org/content/undp/en/home/sustainable-development-goals/background.html Four Important Lessons from Cuba's Urban Food Survival Strategy http://blogs.worldwatch.org/four-lessons-cuba-food/ New Vision for Agriculture | World Economic Forum

		https://www.weforum.org/projects/new-vision-for-agriculture
Métodos de enseñanza	El curso se establecerá principalmente como un seminario-taller. El principal atractivo de este método radica en la posibilidad de una reflexión colectiva sobre cada uno de los temas planteados en el programa, en base a ciertos conceptos clave derivados de las lecturas y presentaciones en clase. La experiencia de una lectura personal se ve reforzada por la sinergia de la reflexión colectiva.	
Actividades de aprendizaje	Actividad de lectura Conferencia Discusión interactiva Presentación (individual) Avances de borrador	

Unidad 3. Fundamentos ecológicos y hortícolas de los huertos urbanos		**9h**
Tema 3.1 Principios energéticos y ecología de la agricultura urbana		**3h**
Subtema	3.1.1 Interacción planta-suelo-atmósfera y relaciones hídricas. 3.1.2 Generalidades de las propiedades del suelo y sustratos. 3.1.3 Tipos de huertos, técnicas y características económicas.	
Tema 3.2 Principios energéticos y ecología de la agricultura urbana		**3h**

Subtema	3.2.1 Cuidado de huertos y especies, y variación de resultados por temporadas. 3.2.2 Plantas tolerantes, cultivos hortícolas, y compatibilidad entre especies vegetales. 3.2.3 Environmental and landscape functions of urban crops		
Tema 3.3 Identificación cultural y nutrición			**3h**
Subtema	3.3.1 Escala de productividad (entrada y salida) y extensión del huerto urbano 3.3.2 Características culturales y usos de las plantas alimenticias locales 3.3.3 Valores nutricionales de frutas y especies vegetales, productos orgánicos		
Bibliografía y recursos digitales	**Bibliografía**	**3. Fundamentos ecológicos y hortícolas de los huertos urbanos** Barthel S. 2013. Urban gardens, agriculture, and water management: Sources of resilience for long-term food security in cities. Ecological Economics, 86: 224-234 Barajas M. G. & V.L. Barradas. 2011. Microclimate and sapling survival under organic and polyethylene mulch in a tropical deciduous forest. Bol.Soc.Bot.Méx. 88:27-34 Torreggiani D., E. Dall'Ara & P. Tassinari. 2012. The urban nature of agriculture: Bidirectional trends between city and countryside. Cities, 29: 412-416 Velazquez L.S. 2005. Organic greenroof architecture: Sustainable design for the new millennium. Environmental Quality Management. Wiley InterScience (online): 73-85 Withman A. & S. DeJohn (Editors of the National Gardening Association). 2009. Organic Gardening for Dummies. Wiley Publishing Inc. 2nd. Edition. Indianapolis, Indiana, U.S.A. 388 p.	
	Recursos digitales		
Métodos de enseñanza	El curso se establecerá principalmente como un seminario-taller. El principal atractivo de este método radica en la posibilidad de una reflexión colectiva sobre cada uno de los temas planteados en el programa, en base a ciertos conceptos clave derivados de las lecturas y presentaciones en clase. La experiencia de una lectura personal se ve reforzada por la sinergia de la reflexión colectiva.		

Actividades de aprendizaje	Actividad de lectura Conferencia Discusión interactiva Presentación (individual) Avances de borrador

Unit 4. Agricultura urbana, sociedad y recursos naturales		**15h**
Tema 4.1 Nexo alimento-agua–energía		**2h**
Subtemas	4.1.1. ¿Cuál es el nexo agua-energía-alimento? 4.1.2. Casos de estudio: integración nexo agua-energía-alimentos	
Tema 4.2 Economía, sociedad y medio ambiente relacionados con la agricultura urbana. Sostenibilidad de la producción de alimentos: prácticas industrializadas versus prácticas a pequeña escala (mercados de subsistencia y agricultura urbana)		**5h**
Subtemas	4.2.1 Escalas de producción de alimentos 4.2.2 Huellas de producción de alimentos 4.2.3 Agricultura urbana: limitaciones y ventajas	
Tema 4.3 Investigación de movimientos de jardinería urbana y acción participativa		**2h**
Subtemas	4.3.1. Agricultura urbana: actores y roles 4.3.2 Movimientos de justicia alimentaria 4.3.3 Acción participativa de investigación en jardinería urbana 4.3.4 Casos de estudio: movimientos de jardinería urbana alrededor del mundo	
Tema 4.4 Estrategias para el diseño, planificación y gestión de una agricultura urbana		**5h**
Subtemas	4.4.1 Planificación espacial estratégica para áreas urbanas agrícolas y su flexibilidad. 4.4.2 Planificación financiera 4.4.3 Gestión de una región urbana agrícola y herramientas geoestadísticas espaciales. 4.4.4 Presentaciones de proyectos finales	
Tema 4.5 Conclusión y revisión del curso		**1h**
Bibliografía y recursos digitales	**Bibliografía**	**4.1.1 ¿CUÁL ES EL NEXO AGUA-ENERGÍA-ALIMENTO?** Bizikova, L., Roy, D., Swanson, D., Venema, H. D., & McCandless, M. (2013). The Water-Energy-Food Security Nexus : Towards a practical planning and decision-support framework for landscape investment and risk management International Institute for Sustainable Development. Manitoba, Canada.

		Covarrubias, M. (2019). The nexus between water, energy and food in cities: towards conceptualizing socio-material interconnections. Sustainability Science, 14(2), 277–287. https://doi.org/10.1007/s11625-018-0591-0 Leck, H., Conway, D., Bradshaw, M., & Rees, J. (2015). Tracing the Water–Energy–Food Nexus: Description, Theory and Practice. Geography Compass, 9(8), 445–460. https://doi.org/10.1111/gec3.12222 Zhang, C., Chen, X., Li, Y., Ding, W., & Fu, G. (2018). Water-energy-food nexus: Concepts, questions and methodologies. Journal of Cleaner Production, 195, 625–639. https://doi.org/10.1016/j.jclepro.2018.05.194 **4.1.2. CASOS DE ESTUDIO: INTEGRACIÓN NEXO AGUA-ENERGÍA-ALIMENTOS** Covarrubias, M. (2019). The nexus between water, energy and food in cities: towards conceptualizing socio-material interconnections. Sustainability Science, 14(2), 277–287. https://doi.org/10.1007/s11625-018-0591-0 Lehmann, S. (2018). Implementing the Urban Nexus approach for improved resource-efficiency of developing cities in Southeast-Asia. City, Culture and Society, 13(March 2017), 46–56. https://doi.org/10.1016/j.ccs.2017.10.003 Rasul, G. (2014). Food, water, and energy security in South Asia: A nexus perspective from the Hindu Kush Himalayan region. Environmental Science and Policy, 39, 35–48. https://doi.org/10.1016/j.envsci.2014.01.010 **4.2.1 ESCALAS DE PRODUCCIÓN DE ALIMENTOS** Arizpe, N. G. (2012). Understanding Agricultural Change: Integrated analysis of societal metabolism at different scales. (September), 1–251. Retrieved from http://www.tesisenred.net/bitstream/handle/10803/117594/ngar1de1.pdf?sequence=1 Pearson, L. J., Pearson, L., & Pearson, C. J. (2010). Sustainable urban agriculture: Stocktake and opportunities. International

Journal of Agricultural Sustainability, 8(1–2), 7–19. https://doi.org/10.3763/ijas.2009.0468

Pimbert, M. P. (2009). Towards Food Sovereignty. Número 141 de Gatekeeper Series, (November), 20. https://doi.org/ISSN 1357-9258

4.2.2 HUELLAS DE PRODUCCIÓN DE ALIMENTOS

Edwards-Jones, G. (2010). Does eating local food reduce the environmental impact of food production and enhance consumer health? Proceedings of the Nutrition Society, 69(4), 582–591. https://doi.org/10.1017/s0029665110002004

Galli, A., Wiedmann, T., Ercin, E., Knoblauch, D., Ewing, B., & Giljum, S. (2012). Integrating Ecological, Carbon and Water footprint into a "footprint Family" of indicators: Definition and role in tracking human pressure on the planet. Ecological Indicators, 16, 100–112. https://doi.org/10.1016/j.ecolind.2011.06.017

Hillier, J., Hawes, C., Squire, G., Hilton, A., Wale, S., & Smith, P. (2009). The carbon footprints of food crop production. International Journal of Agricultural Sustainability, 7(2), 107–118. https://doi.org/10.3763/ijas.2009.0419

Khan, S., & Hanjra, M. A. (2009). Footprints of water and energy inputs in food production - Global perspectives. Food Policy, 34(2), 130–140. https://doi.org/10.1016/j.foodpol.2008.09.001

Khan, S., Khan, M. A., Hanjra, M. A., & Mu, J. (2009). Pathways to reduce the environmental footprints of water and energy inputs in food production. Food Policy, 34(2), 141–149. https://doi.org/10.1016/j.foodpol.2008.11.002

4.2.3 AGRICULTURA URBANA: LIMITACIONES Y VENTAJAS

Azunre, G. A., Amponsah, O., Peprah, C., Takyi, S. A., & Braimah, I. (2019). A review of the role of urban agriculture in the sustainable city discourse. Cities, 93(April), 104–119. https://doi.org/10.1016/j.cities.2019.04.006

Gutman, P. (1987). Urban agriculture : the potential and limitations of an urban self-reliance strategy. 9(2), 1–6.

Korth, M., Stewart, R., Langer, L., Madinga, N., Rebelo Da Silva, N., Zaranyika, H., … De Wet, T. (2014). What are the impacts of urban agriculture programs on food security in low and middle-income countries: A systematic review. Environmental Evidence, 3(1), 1–10. https://doi.org/10.1186/2047-2382-3-21

Orsini, F., Kahane, R., Nono-Womdim, R., & Gianquinto, G. (2013). Urban agriculture in the developing world: A review. Agronomy for Sustainable Development, 33(4), 695–720. https://doi.org/10.1007/s13593-013-0143-z

Pearson, L. J., Pearson, L., & Pearson, C. J. (2010). Sustainable urban agriculture: Stocktake and opportunities. International Journal of Agricultural Sustainability, 8(1–2), 7–19. https://doi.org/10.3763/ijas.2009.0468

4.3.1 AGRICULTURA URBANA: ACTORES Y ROLES

Smit, J., Nasr, J., & Ratta, A. (1996). Urban agriculture: food, jobs and sustainable cities. New York, USA, 2, 35-37. http://www.jacsmit.com/book.html Chapter 6, Which Organizations Influence Urban Agriculture?

Meghan Z. Gough & John Accordino. (2013). Public Gardens as Sustainable Community Development Partners: Motivations, Perceived Benefits, and Challenges. Urban Affairs Review, 49(6) 851–887

4.3.2 MOVIMIENTOS DE JUSTICIA ALIMENTARIA

Gerda R. Wekerle. (2004). Food Justice Movements, Policy, Planning, and Networks. Journal of Planning Education and Research. Volume: 23 issue: 4, page(s): 378-386

4.3.3 ACCIÓN PARTICIPATIVA DE INVESTIGACIÓN EN JARDINERÍA URBANA

Kemmis, S., McTaggart, R., & Nixon, R. (2013). The action research planner: Doing critical participatory action research. Springer Science & Business Media.

		Pretty, J. N. (1995). Participatory learning for sustainable agriculture. World development, 23(8), 1247-1263. Park, P. (1992). Qué es la investigación-acción participativa: perspectivas teóricas y Metodológicas. In La investigación-acción participativa: inicios y desarrollos (pp. 135-174). Editorial Popular. **4.3.4 CASOS DE ESTUDIO** Mougeot, L. J. (Ed.). (2005). Agropolis: The social, political, and environmental dimensions of urban agriculture. IDRC. (case studies approached from different perspectives) **4.4.1 PLANIFICACIÓN ESPACIAL ESTRATÉGICA PARA ÁREAS URBANAS AGRÍCOLAS Y SU FLEXIBILIDAD.** Chakraborti, S., Das, D. N., Mondal, B., Shafizadeh-Moghadam, H., & Feng, Y. (2018). A neural network and landscape metrics to propose a flexible urban growth boundary: A case study. Ecological Indicators, 93(May), 952–965. https://doi.org/10.1016/j.ecolind.2018.05.036 Drescher, A. (2001). The integration of Urban Agriculture into urban planning–An analysis of the current status and constraints. Annotated Bibliography on Urban Agriculture, 554–616. Retrieved from http://areeweb.polito.it/didattica/UPWARD/dwd/agricolture/drescher.pdf Hersperger, A. M., Oliveira, E., Pagliarin, S., Palka, G., Verburg, P., Bolliger, J., & Grădinaru, S. (2018). Urban land-use change: The role of strategic spatial planning. Global Environmental Change, 51(May), 32–42. https://doi.org/10.1016/j.gloenvcha.2018.05.001 Ismail, W. A. W., & Said, I. (2015). Integrating the Community in Urban Design and Planning of Public Spaces: A Review in Malaysian Cities. Procedia - Social and Behavioral Sciences, 168, 357–364. https://doi.org/10.1016/j.sbspro.2014.10.241

Lan, T., Guo, S., Han, J., Yang, Y., Zhang, K., Yang, W., & Li, P. (2019). ur na l P re of. Urban Forestry & Urban Greening, 126430. https://doi.org/10.1016/j.ufug.2019.126430

Manik, S. M. N., Pengilley, G., Dean, G., Field, B., Shabala, S., & Zhou, M. (2019). Soil and Crop Management Practices to Minimize the Impact of Waterlogging on Crop Productivity. 10(February), 1–23. https://doi.org/10.3389/fpls.2019.00140

Mougeot, L. J. A. (2006). Growing Better Cities: Urban Agriculture for Sustainable Development (In Focus).

Oliveira, E. (2018). Can Strategic Spatial Planning Contribute to Land Degradation Reduction in Urban Regions ? State of the Art and Future Research. https://doi.org/10.3390/su10040949

Pierce, F. J., & Frye, W. W. (1998). Advances in soil and water conservation. CRC Oress Taylor and Francis Group.

Poli, D. (2015). Sustainable Food , Spatial Planning and Agro - Urban Public Space In The Bioregional City. (October), 83–97.

Quon, S., & Development, I. (1999). Planning for Urban Agriculture : A Review of Tools and Strategies for Urban Planners Cities Feeding People Series Report 28 Planning for Urban Agriculture : A Review of Tools and Strategies for Urban Planners.

Schram-bijkerk, D., Otte, P., Dirven, L., & Breure, A. M. (2018). Science of the Total Environment Indicators to support healthy urban gardening in urban management. Science of the Total Environment, 621, 863–871. https://doi.org/10.1016/j.scitotenv.2017.11.160

Smidt, S. J., Tayyebi, A., Kendall, A. D., Pijanowski, B. C., & Hyndman, D. W. (2018). Agricultural implications of providing soil-based constraints on urban expansion : Land use forecasts to 2050. Journal of Environmental Management, 217, 677–689. https://doi.org/10.1016/j.jenvman.2018.03.042

Tann, L. Von Der, Sterling, R., Zhou, Y., & Metje, N. (2019). ScienceDirect Systems approaches to urban underground space planning and management – A review. Underground Space, (xxxx). https://doi.org/10.1016/j.undsp.2019.03.003

4.4.2 PLANIFICACIÓN FINANCIERA

EPA. (2011). Partnership award for sustainable communities- Urban Farm Business Plan Handbook. EPA, p. 77. Retrieved from http://www.sustainablecommunities.gov/community.html#FC5

FAO Investment Centre. (1995). Guidelines for the design of agricultural investmet projects (Vol. 7, p. 165). Vol. 7, p. 165. https://doi.org/9251036225

Lovell, S. T. (2010). Multifunctional Urban Agriculture for Sustainable Land Use Planning in the United States. Sustainability, 2(8), 2499–2522. https://doi.org/10.3390/su2082499

Sarker, A., Bornman, J., & Marinova, D. (2019). A Framework for Integrating Agriculture in Urban Sustainability in Australia. Urban Science, 3(2), 15. https://doi.org/10.3390/urbansci3020050

4.4.3 GESTIÓN DE UNA REGIÓN URBANA AGRÍCOLA Y HERRAMIENTAS GEOESTADÍSTICAS ESPACIALES.

Abrantes, P., Rocha, J., Marques da Costa, E., Gomes, E., Morgado, P., & Costa, N. (2019). Modelling urban form: A multidimensional typology of urban occupation for spatial analysis. Environment and Planning B: Urban Analytics and City Science, 46(1), 47–65. https://doi.org/10.1177/2399808317700140

Borssoi, J. A., Uribe-Opazo, M. A., & Galea Rojas, M. (2009). Diagnostic techniques applied in geostatistics for agricultural data analysis. Revista Brasileira de Ciência Do Solo, 33(6), 1561–1570. https://doi.org/10.1590/s0100-06832009000600005

Brunetta, G., & Salata, S. (2019). Mapping urban resilience for spatial planning-A first attempt to measure the vulnerability of the

		system. Sustainability (Switzerland), 11(8). https://doi.org/10.3390/su11082331 Chakraborti, S., Das, D. N., Mondal, B., Shafizadeh-Moghadam, H., & Feng, Y. (2018). A neural network and landscape metrics to propose a flexible urban growth boundary: A case study. Ecological Indicators, 93(May), 952–965. https://doi.org/10.1016/j.ecolind.2018.05.036 Chen, X., Yan, J. F., Chen, Z., Luo, G. P., Song, Q., & Xu, W. Q. (2009). A spatial geostatistical analysis of impact of land use development on groundwater resources in the sangong oasis region using remote sensing imagery and data. Journal of Arid Land, 1(1), 1–8. https://doi.org/10.3724/SP.J.1227.00001 De Wrachien, D. (2003). Land Use Planning : a Key to Sustainable Agriculture. Conservation Agricuture, 471–483. Hersperger, A. M., Oliveira, E., Pagliarin, S., Palka, G., Verburg, P., Bolliger, J., & Grădinaru, S. (2018). Urban land-use change: The role of strategic spatial planning. Global Environmental Change, 51(March), 32–42. https://doi.org/10.1016/j.gloenvcha.2018.05.001 Oliver, M. A. (2010). Geostatistical Applications for Precision Agriculture. In M. A. Oliver (Ed.), The British Journal of Psychiatry (Springer, Vol. 112). https://doi.org/10.1007/978-90-481-9133-8 Peña Osorio, M. Y. (2010). Participación de los SIG en la formulación de instrumentos de planificación y norma urbanística [GIS participation in planning's instruments and urbanistic norm formulation]. Ventana Informatica, (22), 55–76. https://doi.org/10.30554/ventanainform.22.209.2010
	Recursos digitales	

Métodos de enseñanza	El curso se establecerá principalmente como un seminario-taller. El principal atractivo de este método radica en la posibilidad de una reflexión colectiva sobre cada uno de los temas planteados en el programa, en base a ciertos conceptos clave derivados de las lecturas y presentaciones en clase. La experiencia de una lectura personal se ve reforzada por la sinergia de la reflexión colectiva.
Actividades de aprendizaje	Actividad de lectura Conferencia Discusión interactiva Presentación (individual) Avances de borrador

C) ESTRATEGIAS DE ENSEÑANZA Y APRENDIZAJE

El curso se desarrollará principalmente como un seminario-taller. El principal atractivo de este método radica en la posibilidad de una reflexión colectiva sobre cada uno de los temas que se resumen en el programa, basados en ciertos conceptos clave derivados de las lecturas y presentaciones en clase. El curso será dinámico y participativo, basado en discusiones.

Cada estudiante tiene que entregar un ensayo sobre un tema auto-seleccionado de Agricultura Urbana.

Para algunas clases teóricas, cada estudiante debe realizar lecturas asignadas y preparar un ensayo (máx. 1 página). Este ensayo debe expresar su PROPIA opinión, experiencias, dudas y / o pensamientos. Este texto debe entregarse la noche anterior a la siguiente clase.

El profesor también proporciona presentaciones teóricas e introduce el nuevo tema.

En la Unidad 4 los alumnos visitarán un proyecto de agricultura urbana. También en esta unidad, los estudiantes se organizarán en equipos de 3 a 5 personas para trabajar en un proyecto de agricultura urbana en el área urbana. Al final de la unidad, los estudiantes escribirán y conducirán un proyecto de investigación. Los resultados se resumirán en forma de un artículo científico breve y se presentarán en clase.

La experiencia de una lectura personal se ve reforzada por la sinergia de la reflexión colectiva.

Las principales actividades a realizar en el curso son:

- ✓ Pre-lecturas para cada sesión, incluyendo el desarrollo de ensayos, mapas conceptuales;
- ✓ Participación en actividades específicas durante las sesiones del curso y en el sitio web.
- ✓ Actividades individuales o de trabajo en equipo (incluidas las actividades de trabajo de campo).

- ✓ Formulación de un proyecto (un proyecto integrado con otros cursos básicos) al final del curso.

Se espera una gran participación activa de los alumnos en las discusiones en grupo, en el campo y / o en el sitio web (publique comentarios en foros de discusión o enlaces, mantenga la comunicación, responda encuestas, etc.). Esta participación debe guiarse por los siguientes criterios:

- ✓ Contenido y argumentacion
- ✓ Tolerancia y franqueza.
- ✓ Cooperación
- ✓ Centrarse en los problemas planteados
- ✓ Continuidad

D) EVALUACIÓN Y ACREDITACIÓN

Elaboración y/o presentación de:	**Periodicidad**	**Abarca**	**Ponderación de cada parcial con relación al ordinario**
Primer examen parcial: Presentación oral de ensayo	Al término de la Unidad 2	Unidades 1 y 2	20%
Segundo examen parcial: Presentación escrita de ensayo	Al término de la Unidad 3	Unidad 3	20%
Tercer examen parcial: Presentación final de ensayo	Al término de la Unidad 4	Unidad 4	20%
Ensayo final	-	-	40%
		TOTAL	100%
Examen ordinario	La calificación final ordinaria se compondrá por las 3 calificaciones parciales (60%) y la calificación del ensayo (40%).		
Otras actividades académicas requeridas	Las actividades especiales no obligatorias no tendrán un para la evaluación de cada ordinario. Esta consiste en la asistencia a eventos especiales sobre el tema o participación como organizadores en eventos de la disciplina, ya sean de la Facultad o fuera de esta como actividades de difusión y capacitación		

E) BIBLIOGRAFÍA Y RECURSOS INFORMÁTICOS

Textos básicos

Abrantes, P., Rocha, J., Marques da Costa, E., Gomes, E., Morgado, P., & Costa, N. (2019). Modelling urban form: A multidimensional typology of urban occupation for spatial analysis. Environment and

Planning B: Urban Analytics and City Science, 46(1), 47–65. https://doi.org/10.1177/2399808317700140

Anthopoulou, T., Nikolaidou, S., Partalidou, M., & Petrou, M. (2018). The Emergence of Municipal Allotment Gardens in Greece in Times of Crisis. Governance Challenges for New Urban Gardening Practices. 181–199. https://doi.org/10.1007/978-3-319-71037-2_11

Arizpe, N. G. (2012). Understanding Agricultural Change: Integrated analysis of societal metabolism at different scales. (September), 1–251. Retrieved from http://www.tesisenred.net/bitstream/handle/10803/117594/ngar1de1.pdf?sequence=1

Azunre, G. A., Amponsah, O., Peprah, C., Takyi, S. A., & Braimah, I. (2019). A review of the role of urban agriculture in the sustainable city discourse. Cities, 93(April), 104–119. https://doi.org/10.1016/j.cities.2019.04.006

Barajas M. G. & V.L. Barradas. 2011. Microclimate and sapling survival under organic and polyethylene mulch in a tropical deciduous forest. Bol.Soc.Bot.Méx. 88:27-34

Barthel S. 2013. Urban gardens, agriculture, and water management: Sources of resilience for long-term food security in cities. Ecological Economics, 86: 224-234

Barthel, S. et al, 2010, Social-ecological memory in urban gardens-Retaining the capacity for management of ecosystem services, 20:255-265

Basant, M., et al., The Security of Water, Food, Energy and Liveability of Cities, Springer, Dordrecht Heidelberg

Bauer, M.; Mösle, P., Schwarz, M. (2010): Green Building. Berlin, Heidelberg: Springer-Verlag Berlin Heidelberg; Springer e-books.

Bausch, J.C., et al., 2015, Development pathways at the agriculture-urban interface: the case of Central Arizona

Bizikova, L., Roy, D., Swanson, D., Venema, H. D., & McCandless, M. (2013). The Water-Energy-Food Security Nexus : Towards a practical planning and decision-support framework for landscape investment and risk management International Institute for Sustainable Development. Manitoba, Canada.

Borssoi, J. A., Uribe-Opazo, M. A., & Galea Rojas, M. (2009). Diagnostic techniques applied in geostatistics for agricultural data analysis. Revista Brasileira de Ciência Do Solo, 33(6), 1561–1570. https://doi.org/10.1590/s0100-06832009000600005

Brunetta, G., & Salata, S. (2019). Mapping urban resilience for spatial planning-A first attempt to measure the vulnerability of the system. Sustainability (Switzerland), 11(8). https://doi.org/10.3390/su11082331

Burgin, S., 2018, 'Back to the future'? Urban backyards and food self-sufficiency

Chakraborti, S., Das, D. N., Mondal, B., Shafizadeh-Moghadam, H., & Feng, Y. (2018). A neural network and landscape metrics to propose a flexible urban growth boundary: A case study. Ecological Indicators, 93(May), 952–965. https://doi.org/10.1016/j.ecolind.2018.05.036

Chakraborti, S., Das, D. N., Mondal, B., Shafizadeh-Moghadam, H., & Feng, Y. (2018). A neural network and landscape metrics to propose a flexible urban growth boundary: A case study. Ecological Indicators, 93(May), 952–965. https://doi.org/10.1016/j.ecolind.2018.05.036

Chapin, F.S., Kofinas, G.P. y Folke, C. 2009. Principles of Ecosystem Stewardship Resilience-Based Natural Resource Management in a Changing World. Stockholm: Springer, 2009. ISBN 978-0-387-73032-5

Chen, X., Yan, J. F., Chen, Z., Luo, G. P., Song, Q., & Xu, W. Q. (2009). A spatial geostatistical analysis of impact of land use development on groundwater resources in the sangong oasis region using remote sensing imagery and data. Journal of Arid Land, 1(1), 1–8. https://doi.org/10.3724/SP.J.1227.00001

Chrysoulakis, N., et al., 2013, Sustainable urban metabolism as a link between bio-physical sciences and urban planning: The BRIDGE project, Landscape and Urban Planning, 112:100-117

Consejo Nacional de Evaluación de la Política de Desarrollo Social. Dimensiones de la seguridad alimentaria: Evaluación Estratégica de Nutrición y Abasto. México, DF. CONEVAL, 2010

Covarrubias, M. (2019). The nexus between water, energy and food in cities: towards conceptualizing socio-material interconnections. Sustainability Science, 14(2), 277–287. https://doi.org/10.1007/s11625-018-0591-0

De Wrachien, D. (2003). Land Use Planning : a Key to Sustainable Agriculture. Conservation Agricuture, 471–483.

De Zeeuw, H. (2004). Introduction to urban agriculture. Nairobi Course. Leusden, Urban Harvest, UAF

Domenic Vitiello, Laura Wolf-Powers; Growing food to grow cities? The potential of agriculture foreconomic and community development in the urban United States, Community Development Journal, Volume 49, Issue 4, 1 October 2014, Pages 508–523, https://doi.org/10.1093/cdj/bst087

Doss L.H., A. Abdulkadir, H. Amadou, S. Sangare & E. Schlecht (2012). Explrong the diversity of urban and peri-urban agricultural systems in Sudano-Sahelian West Africa: An attempt towards a regional typology. Landscape and Urban Planning, 102: 197-206

Drechsel, P., et al. 2007, Rural-Urban Food, Nutrient and Virtual Water Flows in Selected West African Cities, Research Report 115, International Water Management Institute

Drescher, A. (2001). The integration of Urban Agriculture into urban planning–An analysis of the current status and constraints. Annotated Bibliography on Urban Agriculture, 554–616. Retrieved from http://areeweb.polito.it/didattica/UPWARD/dwd/agricolture/dreschler.pdf

E. Duchemin, F. Wegmuller and A.-M. Legault. (2008). Urban agriculture: multi-dimensional tools for social development in poor neighbourhoods. The Journal of Field Actions Science Reports, 1, 43:52

Ebert, T.; Eßig, N.; Hauser, G. (2011): Green building certification systems. Assessing sustainability, international system comparison, economic impact of certifications. First edition. München: Edition Detail; Institut für internationale Architektur-Dokumentation (Edition Detail green books).

Edwards-Jones, G. (2010). Does eating local food reduce the environmental impact of food production and enhance consumer health? Proceedings of the Nutrition Society, 69(4), 582–591. https://doi.org/10.1017/s0029665110002004

EPA. (2011). Partnership award for sustainable communities- Urban Farm Business Plan Handbook. EPA, p. 77. Retrieved from http://www.sustainablecommunities.gov/community.html#FC5

Fantini, A. (2016). La agricultura urbana y periurbana como práctica de transformación territorial, económica, social y política. Universidad Autónoma de Barcelona.

FAO (2004) Globalization of food systems in developing countries: impact on food security and nutrition.

FAO (S/F) Food for the Cities multi-disciplinary initiative position.

FAO Investment Centre. (1995). Guidelines for the design of agricultural investmet projects (Vol. 7, p. 165). Vol. 7, p. 165. https://doi.org/9251036225

FAO, 2001, Urban and Peri-urban Agriculture, 1. Edition, SPFS/DOC/27.8, Rome

FAO, 2014, Growing Greener Cities in Latin America and the Caribbean, Rome

FAO. (2007). Profitability and sustainability of urban and peri-urban agriculture. In FAO (Ed.), Agricultural Management, Marketing and Finance Occasional Paper. Retrieved from http://books.google.com/books?id=c7l9kmC7PZ0C%7B&%7Dpgis=1

Galli, A., Wiedmann, T., Ercin, E., Knoblauch, D., Ewing, B., & Giljum, S. (2012). Integrating Ecological, Carbon and Water footprint into a "footprint Family" of indicators: Definition and role in tracking human pressure on the planet. Ecological Indicators, 16, 100–112. https://doi.org/10.1016/j.ecolind.2011.06.017

Game, I., et al., 2015, Urban Agriculture, GSDR Brief

García-Llorente, et al, 2016, Social Farming in the Promotion of Social-Ecological Sustainability in Rural and Periurban Areas, Sustainability, 8

Gerda R. Wekerle. (2004). Food Justice Movements, Policy, Planning, and Networks. Journal of Planning Education and Research. Volume: 23 issue: 4, page(s): 378-386

Global panel on agriculture and food systems of nutrition (2017) Urban diets and nutrition: Trends, challenges and opportunities for policy action.

Grimm, N.B., et al, 2010, Integrated Approaches to Long-Term Studies of Urban Ecological Systems, 50(7)

Gutman, P. (1987). Urban agriculture : the potential and limitations of an urban self-reliance strategy. 9(2), 1–6.

Hersperger, A. M., Oliveira, E., Pagliarin, S., Palka, G., Verburg, P., Bolliger, J., & Grădinaru, S. (2018). Urban land-use change: The role of strategic spatial planning. Global Environmental Change, 51(March), 32–42. https://doi.org/10.1016/j.gloenvcha.2018.05.001

Hersperger, A. M., Oliveira, E., Pagliarin, S., Palka, G., Verburg, P., Bolliger, J., & Grădinaru, S. (2018). Urban land-use change: The role of strategic spatial planning. Global Environmental Change, 51(May), 32–42. https://doi.org/10.1016/j.gloenvcha.2018.05.001

Hillier, J., Hawes, C., Squire, G., Hilton, A., Wale, S., & Smith, P. (2009). The carbon footprints of food crop production. International Journal of Agricultural Sustainability, 7(2), 107–118. https://doi.org/10.3763/ijas.2009.0419

http://www.fao.org/in-action/food-for-cities-programme/toolkit/introduction/en/

Hubert De Bon, Laurent Parrot, Paule Moustier. Sustainable urban agriculture in developing countries. A review. Agronomy for Sustainable Development, Springer Verlag/EDP Sciences/INRA, 2010, 30 (1).

IPES-Food. 2017. What makes urban food policy happen? Insights from five case studies. International Panel of Experts on Sustainable Food Systems. www.ipes-food.org

Ismail, W. A. W., & Said, I. (2015). Integrating the Community in Urban Design and Planning of Public Spaces: A Review in Malaysian Cities. Procedia - Social and Behavioral Sciences, 168, 357–364. https://doi.org/10.1016/j.sbspro.2014.10.241

Jaramillo Avila, C. (2003). Aspectos Económicos de la Agricultura Urbana. Agricultura Urbana, (7), 35.

Kemmis, S., McTaggart, R., & Nixon, R. (2013). The action research planner: Doing critical participatory action research. Springer Science & Business Media.

Khan, S., & Hanjra, M. A. (2009). Footprints of water and energy inputs in food production - Global perspectives. Food Policy, 34(2), 130–140. https://doi.org/10.1016/j.foodpol.2008.09.001

Khan, S., Khan, M. A., Hanjra, M. A., & Mu, J. (2009). Pathways to reduce the environmental footprints of water and energy inputs in food production. Food Policy, 34(2), 141–149. https://doi.org/10.1016/j.foodpol.2008.11.002

Korth, M., Stewart, R., Langer, L., Madinga, N., Rebelo Da Silva, N., Zaranyika, H., … De Wet, T. (2014). What are the impacts of urban agriculture programs on food security in low and middle-income countries: A systematic review. Environmental Evidence, 3(1), 1–10. https://doi.org/10.1186/2047-2382-3-21

Lan, T., Guo, S., Han, J., Yang, Y., Zhang, K., Yang, W., & Li, P. (2019). ur na l P re of. Urban Forestry & Urban Greening, 126430. https://doi.org/10.1016/j.ufug.2019.126430

Leck, H., Conway, D., Bradshaw, M., & Rees, J. (2015). Tracing the Water–Energy–Food Nexus: Description, Theory and Practice. Geography Compass, 9(8), 445–460. https://doi.org/10.1111/gec3.12222

Lehmann, S. (2018). Implementing the Urban Nexus approach for improved resource-efficiency of developing cities in Southeast-Asia. City, Culture and Society, 13(March 2017), 46–56. https://doi.org/10.1016/j.ccs.2017.10.003

Losada H., R. Bennett, R. Soriano, J. Vieyra & J. Cortes. (2000). Urban agriculture in Mexico City: Functions porovided by the use of space for dairy based livelihoods. Cities, 17 (6): 419-431

Lovell, S. T. (2010). Multifunctional Urban Agriculture for Sustainable Land Use Planning in the United States. Sustainability, 2(8), 2499–2522. https://doi.org/10.3390/su2082499

Lovell, S.T, 2010, Multifunctional Urban Agriculture for Sustainable Land Use Planning in the United States, Sustainability, 2(8):2499-2522, doi:10.3390/su2082499

Maheshwari, B. etal, 2014 The Security of Water, Food, Energy and Liveability of Cities, Springer

Manik, S. M. N., Pengilley, G., Dean, G., Field, B., Shabala, S., & Zhou, M. (2019). Soil and Crop Management Practices to Minimize the Impact of Waterlogging on Crop Productivity. 10(February), 1–23. https://doi.org/10.3389/fpls.2019.00140

Mansfield, B., & Mendes, W. (2013). Municipal Food Strategies and Integrated Approaches to Urban Agriculture: Exploring Three Cases from the Global North. International Planning Studies, 18(1), 37–60. https://doi.org/10.1080/13563475.2013.750942

McGinnins, M.D., et al. 2014, Social-ecological system framework: initial changes and continuing challenges

Meghan Z. Gough & John Accordino. (2013). Public Gardens as Sustainable Community Development Partners: Motivations, Perceived Benefits, and Challenges. Urban Affairs Review, 49(6) 851–887

Mougeot, L. J. (Ed.). (2005). Agropolis: The social, political, and environmental dimensions of urban agriculture. IDRC. (case studies approached from different perspectives)

Mougeot, L. J. A. (2006). Growing Better Cities: Urban Agriculture for Sustainable Development (In Focus).

Mougeot, L.J.A., 2001, Urban Agriculture: Definition, Presence, Potentials and Risks, and Policy Challenges, Cities Feeding People Series Report 31

Oliveira, E. (2018). Can Strategic Spatial Planning Contribute to Land Degradation Reduction in Urban Regions ? State of the Art and Future Research. https://doi.org/10.3390/su10040949

Oliver, M. A. (2010). Geostatistical Applications for Precision Agriculture. In M. A. Oliver (Ed.), The British Journal of Psychiatry (Springer, Vol. 112). https://doi.org/10.1007/978-90-481-9133-8

Orsini, F., Kahane, R., Nono-Womdim, R., & Gianquinto, G. (2013). Urban agriculture in the developing world: A review. Agronomy for Sustainable Development, 33(4), 695–720. https://doi.org/10.1007/s13593-013-0143-z

Park, P. (1992). Qué es la investigación-acción participativa: perspectivas teóricas y Metodológicas. In La investigación-acción participativa: inicios y desarrollos (pp. 135-174). Editorial Popular.

Pearson, L. J., Pearson, L., & Pearson, C. J. (2010). Sustainable urban agriculture: Stocktake and opportunities. International Journal of Agricultural Sustainability, 8(1–2), 7–19. https://doi.org/10.3763/ijas.2009.0468

Peña Osorio, M. Y. (2010). Participación de los SIG en la formulación de instrumentos de planificación y norma urbanística [GIS participation in planning's instruments and urbanistic norm formulation]. Ventana Informatica, (22), 55–76. https://doi.org/10.30554/ventanainform.22.209.2010

Pierce, F. J., & Frye, W. W. (1998). Advances in soil and water conservation. CRC Oress Taylor and Francis Group

Pimbert, M. P. (2009). Towards Food Sovereignty. Número 141 de Gatekeeper Series, (November), 20. https://doi.org/ISSN 1357-9258

Poli, D. (2015). Sustainable Food , Spatial Planning and Agro - Urban Public Space In The Bioregional City. (October), 83–97.

Pothukuchi, K., & Kaufman, J. L. (1999). Placing the food system on the urban agenda: The role of municipal institutions in food systems planning. Agriculture and Human Values, 16(2), 213–224. https://doi.org/10.1023/A:1007558805953

Pretty, J. N. (1995). Participatory learning for sustainable agriculture. World development, 23(8), 1247-1263.

Quon, S., & Development, I. (1999). Planning for Urban Agriculture : A Review of Tools and Strategies for Urban Planners Cities Feeding People Series Report 28 Planning for Urban Agriculture : A Review of Tools and Strategies for Urban Planners.

Rasul, G. (2014). Food, water, and energy security in South Asia: A nexus perspective from the Hindu Kush Himalayan region. Environmental Science and Policy, 39, 35–48. https://doi.org/10.1016/j.envsci.2014.01.010

Santo, Raychel, Anne Palmer, and Brent Kim. 2016. Vacant Lots to Vibrant Plots: A Review of the Benefits and Limitations of Urban Agriculture. Johns Hopkins Center for a Livable Future. https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/_pdf/research/clf_reports/urban-ag-literature-review.pdf

Sanz Sanz, E., Martinetti, D., & Napoléone, C. (2018). Operational modelling of peri-urban farmland for public action in Mediterranean context. Land Use Policy. https://doi.org/10.1016/j.landusepol.2018.04.003

Sarker, A., Bornman, J., & Marinova, D. (2019). A Framework for Integrating Agriculture in Urban Sustainability in Australia. Urban Science, 3(2), 15. https://doi.org/10.3390/urbansci3020050

Säumel I, I. Kotsyuk, M. Hölscher, C. Lenkereit, F. Weber, I. Kowarik. (2012). How healthy is urban horticulture in high traffic areas? Trace metal concentrations in vegetable crops from plantings within inner city neighborhoods in Berlin, Germany. Environmental Pollution, 165: 124-1332

Scheromm, P., & Mousselin, G. (2017). The Proliferation of Collective Gardens in Lisbon (Portugal) and Montpellier (France): Urban Residents Demand and Municipal Support. 201–217. https://doi.org/10.1007/978-3-319-71037-2_12

Schram-bijkerk, D., Otte, P., Dirven, L., & Breure, A. M. (2018). Science of the Total Environment Indicators to support healthy urban gardening in urban management. Science of the Total Environment, 621, 863–871. https://doi.org/10.1016/j.scitotenv.2017.11.160

Smidt, S. J., Tayyebi, A., Kendall, A. D., Pijanowski, B. C., & Hyndman, D. W. (2018). Agricultural implications of providing soil-based constraints on urban expansion : Land use forecasts to 2050. Journal of Environmental Management, 217, 677–689. https://doi.org/10.1016/j.jenvman.2018.03.042

Smit, J., Nasr, J., & Ratta, A. (1996). Urban agriculture: food, jobs and sustainable cities. New York, USA, 2, 35-37. http://www.jacsmit.com/book.html Chapter 6, Which Organizations Influence Urban Agriculture?

Smith, V. M., Greene, R. B., & Silbernagel, J. (2013). The social and spatial dynamics of community food production: A landscape approach to policy and program development. Landscape Ecology, 28(7), 1415–1426. https://doi.org/10.1007/s10980-013-9891-z

Specht, K. et al, 2014, Urban agriculture of the future: an overview of sustainability aspects of food production in and on buildings, Agric Hum Values 31:33-51

Tann, L. Von Der, Sterling, R., Zhou, Y., & Metje, N. (2019). ScienceDirect Systems approaches to urban underground space planning and management – A review. Underground Space, (xxxx). https://doi.org/10.1016/j.undsp.2019.03.003

Tilman D. et al. (2001). Forecasting Agriculturally Driven Global Environmental Change. Science 292, 281

Tornaghi, C., 2014, Critical geography of urban agriculture, 38(4):551-567, Progress in Human Geography

Torreggiani D., E. Dall'Ara & P. Tassinari. 2012. The urban nature of agriculture: Bidirectional trends between city and countryside. Cities, 29: 412-416

United States Department of Agriculture. (2016). Urban Agriculture Tool Kit. 18. Retrieved from https://www.usda.gov/sites/default/files/documents/urban-agriculture-toolkit.pdf

Velazquez L.S. 2005. Organic greenroof architecture: Sustainable design for the new millennium. Environmental Quality Management. Wiley InterScience (online): 73-85

Walters, J. P., Archer, D. W., Sassenrath, G. F., Hendrickson, J. R., Hanson, J. D., Halloran, J. M., … Alarcon, V. J. (2016). Exploring agricultural production systems and their fundamental components

with system dynamics modelling. Ecological Modelling, 333, 51–65. https://doi.org/10.1016/j.ecolmodel.2016.04.015

Withman A. & S. DeJohn (Editors of the National Gardening Association). 2009. Organic Gardening for Dummies. Wiley Publishing Inc. 2nd. Edition. Indianapolis, Indiana, U.S.A. 388 p.

Zhang, C., Chen, X., Li, Y., Ding, W., & Fu, G. (2018). Water-energy-food nexus: Concepts, questions and methodologies. Journal of Cleaner Production, 195, 625–639. https://doi.org/10.1016/j.jclepro.2018.05.194

Sitios web

FAO - Committee on Agriculture, Fifteenth Session. Urban and peri-urban agriculture, 25 - 29 January 1999 http://www.fao.org/unfao/bodies/coag/Coag15/X0076e.htm

World Food Summit: five years later (FAO, Rome June 2002) . Feeding an increasingly urban world http://www.fao.org/worldfoodsummit/english/newsroom/focus/focus2.htm

World Urban Forum: http://www.un-habitat.org/categories.asp?catid=535

Third Meeting of the Support Group of Urban Agriculture (SGUA)

March 18 - 19, 1996 at the International Development Research Centre, Ottawa, Canada. http://www.crdi.ca/en/ev-2442-201-1-DO_TEMA.html

The Quito declaration. http://www.idrc.ca/uploads/user-S/10401380100Declaration-Ingles.pdf

The La Paz Declaration. http://www.fao.org.sv/noticias/noticias.php

High Level Conference on Food Security, Climate change and energy (FAO, Rome 3-5 June 2007). http://www.fao.org/foodclimate/hlc-home/en/

Videos

Background of the Sustainable Development Goals | UNDP: http://www.undp.org/content/undp/en/home/sustainable-development-goals/background.html

Four Important Lessons from Cuba's Urban Food Survival Strategy: http://blogs.worldwatch.org/four-lessons-cuba-food/

New Vision for Agriculture | World Economic Forum: https://www.weforum.org/projects/new-vision-for-agriculture