

CV Katrin Erdlenbruch

Research Director (DR 2)

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Date of Birth: August 11 1975. Place of Birth: Munich, Germany.

Citizenship : German, French.

Research interests

Resource Economics, Water Economics, Flood and Drought management, Intertemporal choice, Discrete Choice Experiments, Dynamic Modeling, Optimal Control, Game Theory.

Education

HDR, *diploma giving authorization to supervise PhD students*, University of Montpellier I, (July 2013)

with highest distinction (« félicitation du jury à l'unanimité »).

PhD Economics, University of Montpellier I, Montpellier (March 2005)

with highest distinction (« félicitation du jury à l'unanimité »).

Master of Science in Environmental and Resource Economics (September 2001)

University College London, London, Great Britain. With distinction.

Professional Experience

01 / 2016 - 02/2021 Research Director (DR2), Irstea then Inrae, UMR G-EAU, Montpellier.

07 / 2009 - 12/2015 Senior Research Fellow (CR 1), Cemagref then Irstea, UMR G-EAU, Montpellier.

07 / 2005 - 07/2009 Junior Research Fellow (CR 2), Cemagref, UMR G-EAU, Montpellier.

09 -10 / 2003 Consultant at World Bank

01 - 02 / 2002 Consultant at OECD, Environment department (J.P. Barde, N. Johnstone)

Research projects (since 2009)

Coordination

2022-2026 Fondation de France project "Trajectories"- "Long-term horizons and progressiveness of public action in coastal territories". Interdisciplinary project UMR Cee-m, ETTIS Bordeaux, UMR ESPACE Aix-Marseille (48 months). 150 000 €.

2018-2020 MAIF project "Flood, amenities and residential choice"
Project Irstea UMR G-EAU, Inra UMR Beta (24 months). 88 800 €.

2009 - 2013 ANR Young Researcher project RISECO "Contributions of resource economics to the management of drought risk". Project Inra UMR LAMETA, UMR MOISA, Cemagref UMR G-EAU (48 mois). 150 000 €.

Participation

2022 – 2026 WaterOccitanie. Project EauCharb'Oc: "Decontamination of agricultural drainage water by Biochars" (48 mois). Coordination: A. Samuelian et J.-S. Bailly (UMR LISAH).

2021 – 2025	IRESA (Tunisie), Project IDES “Innovation and Economic and Social Development for Sustainable Oasis”, UMR G-eau, INAT, CEE-M. (48 months). Principal Investigator: F. Khamassi (INAT), coordination WP 5 : S. Farolfi (UMR G-EAU).
2021 – 2025	PRIMA. Project TALANOIA WATER. “Adoption of robust and transformative adaptation strategies for drought management” (48 months). Principal Investigator: D. Pérez-Blanco (Univ. Salamanca), coordination at INRAE: N. Graveline (UMR Innovation).
2020 - 2021	MUSE “Understanding the extraction from dynamic natural resources with experimental games. Behavioral responses to threats of regime changes”. (12 mois). Coordination: M. Davin (Univ. Montpellier).
2018 - 2022	ANR “Inondation” WP “Identify and characterize post-flooding trajectories” (36 mois). Coordination: P. Stolf (IRIT, Univ. Toulouse).
2018 - 2020	Fondation de France: Projects for coasts (24 months). Coordination: A. Brun (UPV).
2017 - 2019	RAZ 13 “Risk indicators from viability theory, optimal control theory and individual based simulation models”, AAP Risks Project Irstea (24 months). Coordination: S. Martin (Irstea).
2016 - 2019	SUDOE Interreg Soil-Take-Care WP7 “Comparative study of vulnerabilities of inhabitants in ancient industrial sites (France, Spain, Portugal)” (36 months). Coordination: J. Darrozes, J. Viers (GET, Univ. Toulouse).
2014 - 2017	MEDAD RDT, project EPI “Resilience of flood-prone territories- a preventive approach through post- event adaptation”. (36 months). Coordination: F. Grelot (Irstea).
2012 - 2016	European Cooperation in Science and Technology, COST Action IS1104. “The EU in the new complex geography of economic systems: models, tools and policy evaluation”. Coordination: P. Commendatore (Univ. di Napoli).
2009 - 2012	MEDAD project SURGE Rural-Urban Solidarity and Water Management (36 months). Coordination O. Barreteau (Cemagref).

Various projects for the French ministry in charge of the Environment

With the departments DE, DPPR and DGFAR

Teaching

2015 - today	University of Montpellier, PhD program EDEG, lecture “Water Resource Economics”, then “Games and Economic Models to analyse Common Pool Resources”. In charge of the module (20h).
2012 - 2016	University of Montpellier II, master “Water” (M1) lecture “Methods for economic valuation and microeconomics”
2003 - 2011	SupAgro Montpellier, lectures in mastère and 2 nd year.
2005 - 2007	AgroParisTech / ENGREF Montpellier (VA Eau): lectures and classes.
2004 - 2005	University of Montpellier I, Teaching Assistant Economic Calculus.

Supervision of students

Supervision of Master and Engineering students

H. Hafidi (Montpellier SupAgro 2018), S. Martin-Fernandez (AgroParisTech, Paris 2017), G. Butler (Univ. Aix-Marseille, 2017), A. Tranlé (Univ. Montpellier III, 2016), P. Besson (AgroParisTech, Paris, 2016), N. Fontecilla (Univ. Montpellier I, 2012), J. de Frutos (Univ. Montpellier II, 2010), A. Mullens (Univ. Montpellier II, 2008), S. Djebaili (Univ. Montpellier I, 2008), C. Blanc (Univ. Aix-Marseille III, 2007), V. Germano (Univ. Montpellier III, 2006), N. Angelier (ENGEES, Strasbourg 2006).

PhD students

B. D. Mbarga (Univ. Montpellier, 2018 –2023), now at UN, Geneva.

C. Richert (Univ. Montpellier I, 2013 - 2017), now at ITK, Montpellier.

J. de Frutos Cachorro (Univ. Montpellier I, 2010 - 2014), now at University of Barcelone.

C. Golden (Univ. Montpellier I, 2006 - 2007), now at « Eléphant vert », Paris.

Post-doctorants

V. Champonnois (2019-2020, contract ANR i-nondation), now at LOCEAN UPMC, Paris.

P. Levasseur (2018 -2020, contract project Soil-take-care), now Researcher CRCN INRA SAD-APT, Paris.

A. Tomini (2011-2012, contract project RISECO), now Researcher CRCN CNRS AMSE, Aix-Marseille.

S. Foudi (2008-2009, contract Cemagref / project RISECO), now Researcher at BC3, Bilbao.

Academic duties

Reviewer for the following academic Journals: *Cahiers d'économie et sociologie rurales, Ecological Economics, Environmental and Resource Economics, Environmental Modelling and Assessment, European Journal of Operational Research, European Review of Agricultural Economics, Journal of Environmental Economics and Management, Journal of Environmental Management and Planning, Journal of Flood Risk Management, Journal of Public Economic Theory, Natural Resource Modeling, Natures Sciences Sociétés, PLOSONe, Resource and Energy Economics, Review of Agricultural, Food and Environmental Studies, Revue Économique, Water Resources and Economics.*

Organisation of seminars and team management

2024-today	Team leader team “Preservation of natural resources and biodiversity” at Cee-m
2023 (Sept.)	Annual conference FAERE : organisation and scientific committee (with J. Subervie, F. Ricci, S. Roussel), about 160 participants.
2022- today	Doctoral meeting of Cee-m (annual meeting)
2021 (May)	Workshop “Water and Economics » (with A. Thomas, A. Reynaud, B. Rulleau), about 40 participants from EAUX and SAE2 departments, Inrae.
2014 - 2020	Team leader « DynEauSoc - Adaptations », UMR G-EAU, about 20 members from different disciplines.
2018 (Nov.)	Séminaire des économistes Inra et Irstea, (avec T. Rambonilaza), 125 participants des départements EAUX, SAD, SAE2, Territoires.
2017 (Nov.)	Workshop for economists at Irstea (with T. Rambonilaza).
2015 (June)	Phd Workshop « Doctoriales en Sciences Sociales de l’Eau » IM2E, scientific committee.
2006 - 2018	Monthly seminar MATHEO, UMR G-EAU (with X. Litrico then B. Bonté).
2002 - 2003	Monthly seminar SERENE, UMR LAMETA (with J.-M. Salles).

Participation in PhD and HDR committees

2024	M. Cuilleret, president of the jury, Institut Agro and University of Montpellier.
2023	F. Bastit, main examiner, Institut Agro and University of Lorraine.
2021	M. Djiguemde, president of the jury, University of Montpellier.
2020	T. France, president of the jury, Muséum National d’Histoire Naturelle, Paris.
2018	V. Champonnois, president of the jury, University of Aix-Marseille.

2018 M. Tendero, main examiner, University of Angers.
2015 A. Creach, main examiner, University of Nantes.
2014 F. Destandau, HDR jury, University of Strasbourg.

Participation in scientific advisory committees

2023 - today Member of evaluation committee n° 32 National Research Agency (ANR)
2016 - today External Member of Scientific Council of SAE2 department, Inra.
2018 Participation at ARP Risks Inra-Irstea.
2018 Member of hiring committee for Research Directors DR2, Inra, SAE2.
2016 Member of hiring committee for Junior Researchers CR2, Inra, SAE2.

International experience

Research stays

2014, 2013 Valladolid, Spain, collaboration with F. Cabo, University of Valladolid,
2011, 2010 Montréal, Canada, collaboration with G. Zaccour, GERAD, University of Montréal.

Invited conferences

2012 Bilbao, Spain, invited conference, collaboration with S. Foudi, BC3,
2009 Kiel, Germany, invited conference, collaboration with Prof. M. Quaas.

Language skills

German : mother tongue. French : fluently spoken and written.
English : very good notions, spoken and written. Spanish: good notions.

Publications

Journal articles (scientific, peer-reviewed)

- A22. Martin, S., Erdlenbruch, K., Alvarez, I., Huet, S., Smadi, C. (2022) "Viability, efficiency, resilience and equity: using very diverse indicators to deal with uncertainties of future events", *Environmental Science and Policy*, 138: 56-75. <https://doi.org/10.1016/j.envsci.2022.09.011>
- A21. Levasseur, P., Erdlenbruch, K., Gramaglia, C., Bento, S., Fernandes, L., Banos Paéz, P. (2022) "Does pollution perception lead to risk avoidance behaviour? A mixed method analysis". *Review of Social Economy*, 1-27. <https://doi.org/10.1080/00346764.2022.2030542>
- A20. Levasseur, P., Erdlenbruch, K., Gramaglia, C. (2022) "The health and socioeconomic costs of exposure to soil pollution: evidence from three polluted mining and industrial sites in Europe", *Journal of Public Health*, 30: 2533-2546. <https://doi.org/10.1007/s10389-021-01533-x>.
- A19. Levasseur, P., Erdlenbruch, K., Gramaglia, C. (2021) "Why Do People Continue to Live Near Polluted Sites? Empirical Evidence from Southwestern Europe", *Environmental Modeling & Assessment*, <https://doi.org/10.1007/s10666-021-09753-x>.
- A18. Champonnois, V., Erdlenbruch, K. (2020) "Willingness of households to reduce flood risk in southern France". *Journal of Flood Risk Management*, Vol. 14(2): 1-16. <https://doi.org/10.1111/jfr3.12696>
- A17. Farolfi, S., Erdlenbruch, K. (2020) "An experimental game to improve the understanding of Common-Pool Resource dilemmas in irrigation water management". *International Review of Economics Education*, Vol. 35, 100199, <https://doi.org/10.1016/j.iree.2020.100199>
- A16. Richert, C., Erdlenbruch, K., Grelot, F. (2019) "The impact of flood management policies on individual adaptation actions: Insights from a French case study", *Ecological Economics*, Vol. 165, 106387, <https://doi.org/10.1016/j.ecolecon.2019.106387>
- A15. De Frutos Cachorro, J., Erdlenbruch, K., Tidball, M. (2019) "Sharing a Groundwater Resource in a Context of Regime Shifts", *Environmental and Resource Economics*, Vol. 72(4), 913-940. <https://doi.org/10.1007/s10640-018-0233-0>
- A14. Erdlenbruch, K., Bonté, B. (2018) "Simulating the dynamics of individual adaptation to floods", *Environmental Science and Policy*, Vol.84: 134-148. <https://doi.org/10.1016/j.envsci.2018.03.005>
- A13. Richert, C., Erdlenbruch, K., Figuières, C. (2017) "The determinants of households' flood mitigation decisions in France", *Ecological Economics*, Vol. 131: 342-352. <https://dx.doi.org/10.1016/j.ecolecon.2016.09.014>
- A12. De Frutos Cachorro, J., Erdlenbruch, K., Tidball, M. (2015) "A dynamic model of irrigation and land-use choice: an application to the Beauce aquifer in France", *European Review of Agricultural Economics*, Vol. 44(1): 99-120. <https://dx.doi.org/10.1093/erae/jbw005>
- A11. Alvarez, Maria E., Di Marco S., Erdlenbruch, K., Tidball, M (2015) "A mixed control problem of the management of natural resources", *Natural Resource Management*, Vol. 29 (3): 353 – 373. <https://dx.doi.org/10.1111/nrm.12085>
- A10. Soubeyran, R., Tidball, M., Tomini, A., Erdlenbruch, K. (2015) "Rainwater Harvesting and Groundwater Conservation: When Endogenous Heterogeneity Matters", *Environmental and Resource Economics*, Vol. 62 (1): 19-34. <https://dx.doi.org/10.1007/s10640-014-9813-9>

- A9. Erdlenbruch, K., Tidball, M., Zaccour, G. (2014) "Quantity-Quality Management of a Groundwater Resource by a Water Agency", *Environmental Science & Policy*, Vol. 44: 201-214. <https://dx.doi.org/10.1016/j.envsci.2014.08.002>
- A8. Cabo, F., Erdlenbruch, K., Tidball, M. (2014) "Dynamic management of water transfer between two interconnected river basins", *Resource and Energy Economics*, Vol.37: 17-38. <https://dx.doi.org/10.1016/j.reseneeco.2014.03.002>
- A7. De Frutos Cachorro, J., Erdlenbruch, K., Tidball, M. (2014) "Optimal adaptation strategies to face shocks on groundwater resources", *Journal of Economic Dynamics and Control*, Vol.40: 134-153. <https://dx.doi.org/10.1016/j.jedc.2014.01.005>
- A6. Erdlenbruch, K., Jean-Marie, A., Moreaux, M. Tidball, M., (2013) "Optimality of Impulse Harvesting Policies", *Economic Theory*, Vol. 52 (2): 429-459. <https://dx.doi.org/10.1111/nrm.12085>
- A5. Foudi, S., Erdlenbruch, K. (2012) "The role of irrigation in farmer's risk management strategies in France", *European Review of Agricultural Economics*, Vol. 39(3): 439-457. <https://dx.doi.org/10.1093/erae/jbr024>
- A4. Erdlenbruch, K., Thoyer, S., Grelot, F., Kast, R., Enjolras, G. (2009) "Risk sharing policies in the context of the French Flood Prevention Action Programmes", *Journal of Environmental Management*, Vol. 91(2): 363-369. <https://dx.doi.org/10.1016/j.jenvman.2009.09.002>
- A3. Erdlenbruch, K., Tidball, M., van Soest, D. (2008) "Renewable resource management, user heterogeneity, and the scope for cooperation", *Ecological Economics*, Vol. 64 (3): 597-602. <https://dx.doi.org/10.1016/j.ecolecon.2007.04.004>
- A2. Erdlenbruch, K., Tidball, M. (2006) "A singular optimal control model of stock dependent environmental policies", *Journal of Optimization Theory and Applications*, Vol. 131(1): 69-88. <https://dx.doi.org/10.1007/s10957-006-9130-8>
- A1. Aulong, S., Erdlenbruch, K. Figuières (2005) "Un tour d'horizon des critères d'évaluation de la diversité biologique", *Revue Economie Publique*, No. 16 (2005/1): 25-68. <https://doi.org/10.4000/economiepublique.1713>

Other articles

- I10. Eckert, N., Rigolot, E., Caquet, T., Naaim, M., Allard, D., Erdlenbruch, K., Garric, J., Gohin, A., Giacona, F., Lang, M., Marette, S., Membré, J-M., Mougin, C., Reynaud, A., Sabatier, R., (2023) « Les risques environnementaux en 2020: une feuille de route pour INRAE », *Natures Sciences Sociétés*, 31 (3) : 347-358. <https://dx.doi.org/10.1051/nss/2024004>
- I9. Erdlenbruch, K. (2021) « Les habitants - responsables pour contribuer à la prévention des inondations? » publication en ligne-Cee-m, Inrae, Fondation MAIF pour la recherche. Réf. HAL : <https://hal.inrae.fr/hal-03807920>
- I8. Soubeyran, R., Tidball, M., Tomini, A., Erdlenbruch, K. (2015) "Should we subsidize alternative water sources?" *Global Water Forum*, September 2015, <http://www.globalwaterforum.org/2015/09/28/>
- I7. Erdlenbruch, K., Lefebvre, M., Loubier, S., Montginoul, M., Morardet, S. (2013) « La gestion du manque d'eau structurel et des sécheresses en France », SET, no spécial 11: pp. 78-85.
- I6. Montginoul, M., Erdlenbruch, K. (2009) « Les réserves de substitution sont-elles une solution à la pénurie d'eau ? », *Ingénieries E.A.T.*, no. 59-60, 131-136.

15. Grelot, F., Bailly, J.-S., Blanc, C., Erdlenbruch, K., Mériaux, P., Saint-Geours, N., Tourment, R. (2008) « Sensibilité d'une analyse coût-bénéfice - enseignements pour l'évaluation de projets d'atténuation des inondations », *Ingénieries E.A.T.*, no spécial 14, 95-108.
14. Erdlenbruch, K., Grelot, F., Thoyer, S., Brémond, P., Breton, C., Chastan, B., Enjolras, G., Kast, R. (2008) « Ralentissement dynamique et partage du risque - Mise en place de systèmes de compensation locaux », *Ingénieries E.A.T.*, no spécial 14, 109-119.
13. Poulard, C., Chastan, B., Royet, P., Degoutte, G., Grelot, F., Erdlenbruch, K., Nedelec, Y. (2008) « Prévention des inondations par ralentissement dynamique : principe et recommandations », *Ingénieries E.A.T.*, no spécial 14, 5-24.
12. Figuières, C. ; Erdlenbruch, K. ; Aulong, S. (2008) « Les critères d'évaluation de la biodiversité : propriétés et difficultés d'usage » Journée SAE2 : Eau et biodiversité : enjeux et méthodes pour les sciences sociales ; 2008/09/18 ; Paris (FRA). *INRA Sciences Sociales Recherches en Economie et Sociologie Rurales*. 2008, (4-5 numéro spécial : Eau et biodiversité : enjeux et méthodes pour les sciences sociales) : 1-4.
11. Erdlenbruch, K., Gilbert, E., Grelot, F., Lescoulier, C. (2008) « Une analyse coût-bénéfice spatialisée de la protection contre les inondations - application de la méthode des dommages évités à la basse vallée de l'Orb », *Ingénieries E.A.T.*, no. 53, 3-20.

Book reviews

- CR1. "Valuing climate change mitigation. Applying stated preferences in the presence of uncertainty" Sonia Akter, Jeff Bennett, Edward Elgar, 2012, 192 p. Rapport pour *Natures Sciences Sociétés*, Vol. 22, (2014), p. 394-396.

Book chapters

- CO3. "L'évaluation économique des projets de prévention des inondations" Ch. 21 in: "Inondations - la gestion du risque" F. Vinet (ed.), 2019. ISBN : 9781785482687.
- CO2. "Economic assessment of flood prevention projects" Ch. 21 in: "Floods" F. Vinet (ed.), 2019. ISBN : 9781785482687.
- CO1. "The implications of budget systems for the environmental characteristics of public procurement" (2003), Johnstone, N. (OECD), Erdlenbruch, K., Müller, K., in: *The Environmental Performance of Public Procurement - Issues of Policy Coherence*, OECD.

Dissertations

- RD4. « Économie des ressources naturelles, gestion de l'eau et gestion des risques liés à l'eau », mémoire d'habilitation à diriger des recherches, Université Montpellier I, Ecole Doctorale Economie et Gestion, mention très honorable avec félicitations du jury à l'unanimité, juillet 2013.
- RD3. « Essais en économie des ressources renouvelables », thèse de doctorat, Université Montpellier I, mention très honorable avec félicitations du jury à l'unanimité, mars 2005 (Direction : R. Lifran, M. Tidball).
- RD2. "Influencing forest exploitation via trade: The role of tropical timber trade in forest management", M.Sc. Thesis, University College London, avec "distinction", septembre 2001 (Direction: T. Swanson).
- RD1. « La méthode d'évaluation contingente dans les pays en développement » 26/30 points, juin 2000 (Direction : M. Garrabé).

Reports (since 2015)

- R11. Rapport de recherche IRIT “Towards Flash Floods Management Using Temporal Loops” Stolf, P., Berthet, J., Bosc, C., Bremond, P., Ceyte, A., Champonnois, V., Collard, A.-L., Dubois, F., da Costa, G., Erdlenbruch, K., Felts, D., Gasset, R., Grelot, F., Héral, C., Piccinini, B., Pierson, J.-M., Sayah, A. 2021. Réf. HAL : <https://hal.archives-ouvertes.fr/hal-03327977v1>
- R10. Rapport final de l’enquête ENOV-IRSTEA « Perceptions et attitudes par rapport au risque d’inondation : enquête dans les départements de l’Aude et du Var » (2015), C. Richert, K. Erdlenbruch, C. Figuières, 71 p. + *annexes*.

Expertise (since 2015)

- E11. Rapport INRAe, « Risques naturels, alimentaires et environnementaux: de l’identification à la gestion», Caquet, T., Naaim, M., Rigolot, E., Eckert, E., Allard, D., Erdlenbruch, K., Garric, J., Gohin, A., Lang, M., Marette, S., Membré, J.-M., Mougin, C., Reynaud, A., Sabatier, R. 2021, 55p. Réf. HAL : <https://hal.archives-ouvertes.fr/hal-03267088v1>
- E10. Erdlenbruch, K., Grelot, F., Rollin, D., 2017, « Avis d'expertise sur les analyses coût-bénéfice du programme d'actions pour la prévention des inondations du PAPI Côtiers des Maures », Rapport d'expertise IRSTEA, 19 octobre, Montpellier, France.

Communications at conferences (selection, since 2020)

- C30. Erdlenbruch, K., Davin, M., Dubois D., Willinger, M. (2023), “Discounting and extraction behaviour in continuous time resource experiments”, ASFEE, 25-26 May Montpellier.
- C29. Erdlenbruch, K., Davin, M., Dubois D., Willinger, M. (2023), “Discounting and extraction behaviour in continuous time resource experiments”, FAERE, 7-8 September, Montpellier.
- C28. Erdlenbruch, K., Tidball, M. (2022), “Water and surface choice in a dynamic setting”, AERNA, 1-3 September, Barcelona, Spain.
- C27. Erdlenbruch, K., de Frutos, J., Tidball, M. (2021), “Un modèle dynamique simple de choix d'assolement et d'irrigation : une application à la gestion de la nappe de Beauce”, séminaire eau (online).

Recent working papers and ongoing work

- W4. Davin, M., Dubois, D., Erdlenbruch, K., Willinger, M. (2023) “Discounting and resource extraction in continuous time”, WP Cee-m, submitted to Journal.
- W3. Tidball, M., Erdlenbruch, K. (2023) “Water and surface choice in a dynamic setting”, mimeo.
- W2. Garcia, S., Erdlenbruch, K., Mbarga B.-D. (2022), “A choice experiment to measure the impact of flood risk information on residential location choices”, WP Beta, submitted to Journal.
- W1. Champonnois, V., Erdlenbruch, K. (2020), “How strong is the signalling effect of flood zoning policies?” mimeo.

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