



**3rd International Symposium on
Work in Agriculture – ISWA**
at BFH-HAFL, Zollikofen

**Addressing Current and Future Challenges of
Work in Agriculture:
Research, Policy and Practice**

**In collaboration with
Fachausschuss für Arbeitswissenschaften im Landbau
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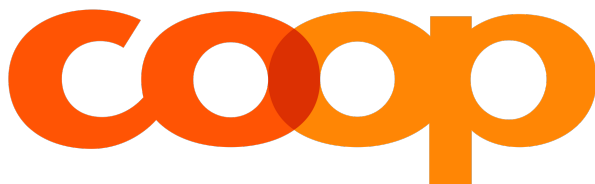
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WORKING GROUP 1: THE IMPACT OF DIGITALIZATION ON AGRI-FOOD LABOUR AND PRODUCTION SYSTEMS 20

Employment platforms in the French agricultural sector: towards a digitalised labor market?	21
Eléa GOLLIET-MERCIER.....	21

WORKPLACE TRANSITIONS AND IMPACTS ON DAIRY FARMS ADOPTING PRECISION LIVESTOCK FARMING TECHNOLOGIES IN THE UK AND NEW ZEALAND.....22

Joanne Sharpe ¹ , Gemma Charlton ¹ , Lucy Hall ² , Brian Dela Rue ² , Callum Eastwood ² , David Rose ¹	22
--	----

GenAI to overcome the data-action gap on poultry farms: opportunities and risks	23
Laura Palczynski, Holly Vickery, David Rose	23

Transforming Agriculture through the Digital Agricultural Innovation Systems (DAIS) in India?

Exploring Public Policies and Private Entrepreneurship	24
Soutrik Basu ¹ , Anupam Kumar ²	24

Work organisation and transformation through virtual fencing - insights from 20 New Zealand dairy farms	25
Callum Eastwood, Brian Dela Rue, Lucy Hall	25

WORKING GROUP 2: CRITICAL PERSPECTIVES ON AGRICULTURAL ROBOTIZATION.... 26

Workflow of the operator when supervising multiple field robots under different operating conditions	27
Ines Mühlbachler ¹ , Franz Handler ²	27

Integrating uses and users into the design of digital agricultural technologies: an activity-centered approach	28
Emma ALLIX ¹ , Adeline Masson ² , Alain Garrigou ² , Maude Quinio ³ , Adelaide Nascimento ¹	28

Emerging technology narratives of agricultural robotics in UK media, and their implications for responsible innovation	29
Kirsten Ayris ¹ , David Rose ² , Alice Mauchline ¹ , Anna Jackman ¹	29

Articulating technocentric and anthropocentric approaches in the design and adoption of weeding robots in agroecology	30
Adeline Masson ¹ , Alain Garrigou ² , Ouidad Labbani-Igbida ³ , Olivier Ly ⁴	30

Robotics and Automation for Small-Scale Horticulture: A Systematic Review with a Focus on Disability Inclusion.....	31
Maria Cecilia Perroni, Elisabeth Quendler	31

Cyborg Terraces? On automating mowing and maintaining cultural heritage in the Lavaux vineyards	32
Olivier Ejderyan	32

An ethnographic study of Drone technology, embodied labour and Farmer's knowledge in agrarian India	33
Bharti Varun	33

The Aspects of Open Source Robotic Systems for Farming Applications: Democratisation of Food Production or Utopia?	34
Dejan Šeatović	34
 WORKING GROUP 3: WORK DYNAMICS WITHIN AND BEYOND THE FARM GATE	35
 What does research say about work in livestock farms providing on-farm services?	36
Priscila Malanski, Nathalie Hostiou	36
 Combining services and livestock : evidence of farmers' activities diversification in Auvergne-Rhône-Alpes region, France	37
Priscila Duarte Malanski, François Johany Mirabal	37
 New diversification of livestock marketing methods: What adjustments for work organisation and technical management on farms?	38
Hélène RAPEY ¹ , Sylvie MUGNIER ² , Catherine HUSSON ²	38
 Input Subsidies, Market Access, and Fertilizer Use in Indian Agriculture	39
Enakshi Bera	39
 Short Food Supply Chains beyond the farm: Organizing the processing and marketing of animal products in territorialized agri-food chains	40
Philippine Dupé ^{1,2} , Romain Cocagne ¹ , Benoît Dedieu ² , Pierre Gasselin ¹	40
 How Short Food Supply Chains reshape livestock farmers' work organization over time	41
Philippine Dupé ^{1,2} , Benoît Dedieu ² , Pierre Gasselin ¹	41
 Reconfiguring work and labor within and between farm and off-farm activities	42
Marine Chaillard	42
 Labor in mountain agriculture: developing niche markets between income generation, protection of natural resources and self-sufficiency	43
Andreas Mandler, Giovanni Carabin, Francesco Fabio Nicolosi, Fabrizio Mazzetto	43
 Timing conflicts between agricultural work and downstream activities on farms involved in short supply chains	44
Léo Perrette	44
 Networks for agroecological farm work: a relational-practice approach	45
Júlia Tena Mensa	45
 Temporal Changes in Administrative Burden in Swiss Agriculture	46
Sarina Altermatt ^{1,2} , Stefan Mann ¹ , Sabine Liebenehm ¹ , Jochen Kantelhardt ²	46
 Adaptation trajectories and work dynamics in dairy farming systems in medium-mountain areas ...	47
Julio Cesar Damasceno ^{1,2} , Benoît Dedieu ³ , Chantal Chassaing ⁴ , Priscila Malanski ² , Julie Duval ² ..	47
 Work Dynamics and Diversification in Mediterranean Olive Farming Socio-Technical Networks (case study of olive farms in Sardinia and Provence).	48
FRANCA CORRIAS	48

New generation farmers and farm diversification: rethinking gender relations. A case study in Quercy region, France.	49
Chloé LE BRUN, Alexis Annès	49

WORKING GROUP 4: MAPPING THE TERRITORY OF YOUTH CAREERS IN AGRICULTURE AND FOOD..... 50

How could smart farming technologies attract and retain young people in the agri-food sector in Australia?.....	51
Yuchen Miao, Ruth Nettle, Catherine Waite	51

Young people's pathways into agriculture jobs and careers: an expansive perspective to inform strategic interventions	52
Catherine Waite, Ruth Nettle, Michael Santhanam-Martin, Hernan Cuervo, Margaret Ayre	52

Agricultural interest, experience, and food system behaviors in two Indigenous Communities in the U.S.: Comparisons of three age groups 18-25; 26-35 and >35	53
Jane Kolodinsky	53

'Triple A' - Awareness, Attractiveness and Access: Advancing Understanding of Young Peoples' Relationships with Agricultural Work.....	54
Fiona Williams, David Rose, Laura Palczynski	54

Careers and work aspirations of livestock farmers with a degree in higher education in France	55
Anne-Lise Jacquot ¹ , Marine Jacquemin ¹ , Julie Duval ²	55

Generational Perspectives: Investigating the factors that influence the attractiveness of dairy farming	56
Padraig Lacey, Tomás Russell, Brian Leonard, Conor Hogan	56

Exploring Pathways and Roots: How Middle and High School Students Develop Agricultural Career Interests	57
Kellie Claflin	57

Perceived Career-Related Supports and Barriers Among First-Year Students in University Agriculture Programs	58
Ashley Thompson, Kellie Claflin	58

Mapping free labor in young farmers' pathways.....	59
Marie Barisoux ² , Lucette Laurens ¹ , Pierre Gasselin ³	59

Engaging Female Students in Agricultural Technology Driven Careers in Agriculture and Food	60
Jaime Manning, Amy Cosby	60

From Campus to Career: what university agriculture students look for in job ads	61
Amy Cosby, Nicole McDonald, Pat Colusso, Danielle Every, Jaime Manning.....	61

Why Is It Hard to Hire and Retain Agricultural Workers? Insights from Farmers and Agribusiness Owners	62
Suzanna Windon, Ellen Zelinsky	62

Sustainable Employability: A Capability Framework for Digital Agri-Food Youth Careers	63
Erika Quendler ¹ , Alexander Plaikner ²	63
Entering, staying, leaving: professional trajectories in agriculture.....	64
Nicolas Loodts, Julie Hermesse	64
Using choice modelling to understand factors influencing retention of youth in New Zealand dairy farming workplaces	65
Phoebe Gill ¹ , Sam Cormack ¹ , Adam Barker ¹ , Callum Eastwood ² , Brian Dela Rue ²	65
WORKING GROUP 5: SEEDS OF SUCCESSION	66
An Exploration of the Relationship Between Farm Succession, Stress, and Support Systems on Irish Dairy Farms.....	67
Diarmuid Delaney ^{1,2} , Tomás Russell ¹ , Conor Hogan ² , Brian Leonard ¹	67
The role of emotions during farm intergenerational transfer.....	68
Ludivine Cartelle	68
WORKING GROUP 6: ENHANCING THE ATTRACTIVENESS OF WORK IN THE AGRI-FOOD SECTOR	69
Defining the concept of job quality in the agricultural sector: evidence from Australia	70
Xinyue Tang	70
Making Agro-Food Work Attractive for Rural Youth: A Field-Based Case Study from the Democratic Republic of Congo	71
Bienvendu Bolamba	71
Climate Change as a Driver of Working Conditions and Farming Attractiveness.....	72
Laura Girdžiūtė, Anastasija Novikova	72
Collaborative farming as a pathway to attract the next generation of farmers	73
Ruth Fennell ¹ , Conor Hogan ²	73
From Undocumented Labor to Guest Work? H-2A Visas, Legal Status, and Agricultural Work in the United States	74
Lisa Meierotto, Rebecca Som Castellano	74
Identifying benchmarks for attractive and productive workplaces on pasture-based dairy farms in Ireland	75
Valerie Guiney ^{1,2} , Prof. Mary O' Shaughnessy ² , Dr. Lana Repar ² , Prof. Joe Bogue ² , Dr. Conor Hogan ¹	75
Mechanisms for Matching Agricultural Supply and Demand: Insights from Italy	76
Lucia Tudini, Maria Carmela Macrì	76
WORKING GROUP 7: INNOVATIVE APPROACHES TO ENHANCING THE ATTRACTIVENESS OF AGRICULTURAL WORK IN RURAL AFRICA	77

Work and employment in agriculture in Africa: a review.....	78
Teatske Bakker ² , Geraldine Enderli ¹ , Mamadou Bobo Barry ³ , Ibrahima Diallo ³ , Bilal Diakate ³ , Pierre Girard ² , Eveline Compaore-Sawadogo ⁴ , Dominique Fournier ¹ , Guillaume Soullier ² , Nathalie Hostiou ¹ , Mohammed Taher Srairi ⁵ , Benoit Dedieu ¹	78
Labor Shortages and the Attractiveness of Agricultural Work in Algeria: Evidence from a Major Vegetable-Producing Region	79
Marouane Chaami ¹ , Amina Raggas ¹ , Slimane Bedrani ¹ , Abdelwahab Bessaad ² , Fatima Lambarraa-Lehnhardt ³	79
Capitalization of experience in improving working conditions for agricultural workers and laborers 80	
David AFFODJOU, Komi FIODENDJI, Bruno ESSIG, Nicole BOLLIGER	80
WORKING GROUP 8: HOW EFFECTIVELY CAN PRODUCTION SYSTEMS ATTRACT WORKERS AND SUPPORT DECENT WORK?	81
Australian farmers' people management practices and progress toward 'employers of choice'	82
Ruth Nettle ¹ , Sally Murfett ² , Danielle England ³ , Claudia Mitchell ⁴	82
Does nobody want to work in the countryside? Know-how, working conditions, and consent in 21st-century Argentine livestock farming.	83
Bruno Capdevielle	83
The Craft of Alpine Farming: A New Typology for Workers on Alpine Farms	84
Alexander Rösli, Sandra Contzen	84
Calf Care Labour Allocation on Pasture-Based Dairy Farms in Ireland	85
Cornelius O'Leary ^{1,2} , Monica Gorman ² , Marion Beecher ³ , Conor Hogan ¹	85
In search of an ideal model for collective work organisation on collective farms: dream or reality? .86	
Nathalie Hostiou ¹ , Christine Léger-Bosch ¹ , Laurant Delphine ²	86
When data comes to the sheepfold: uses of digital tools in sheep farming	87
Nouria Compaoré, Philippe Jeanneaux, Nathalie Hostiou	87
Transforming the agricultural workscape – learning from forms of Community Supported Agriculture in Germany?.....	88
Anna Zimmer.....	88
Analyse comparative de la qualité du travail et de l'emploi dans les systèmes rizi- agroécologiques et conventionnels du lac de Guiers.....	89
EL HADJI KABE GAYE ¹ , Aida Mbaye DEME ² , Pape Bilal Diakhate ¹ , Mor NGOM ¹	89
Working conditions along installation trajectories of itinerant sheep farmers : 2 case studies.....	90
Valentin Clerget ¹ , Philippe Lescoat ¹ , Lorène Prost ² , Solène Pissonnier ¹	90
WORKING GROUP 9: DECENT WORK IN FAMILY FARMING AND THE AGRI-FOOD SECTOR	91

A Triangulated Perspective on Labor Conditions in Certified vs Non-Certified Coffee Farms in Rwanda: Farmer Reports, Worker Narratives, and Gender Dimensions	92
Francoise Umarishavu, Meike Wollni.....	92
Universities as Drivers of Decent Work in Family Farming: An Institutional Evaluation Perspective..	93
Marco Felipe Zanchetta Moreno Guidio Biondo, Dimas de Oliveira Estevam, Thiago Rocha Fabris, Thiago Henrique Almino Francisco, Caroline da Graça Jacques.....	93
Small Processors, Big Risks: Why Decentralization Doesn't Guarantee Decent Work in the Agrifood System.....	94
Michaela Hoffelmeyer.....	94
Can free labor be decent work? Representations of free labor and access to decent work among new farmers	95
Marie Barisau ¹ , Pierre Gasselin ² , Lucette Laurens ¹	95
Family Farming and Decent Work in Brazil: Analyzing PRONAF Credit Access and Structural Bottlenecks.....	96
Marcelo Vargas de Souza, Caroline da Graça Jacques, Dimas de Oliveira Estevam, Chantele Cerqueira de Lima Barzan.....	96
Decent Work and Cooperativism in Brazil: Pathways to Social Protection for Family Farmers.....	97
Caroline Jacques, Dimas Estevam, Daniele Souza, Bianca Batti, Marcelo Souza, Chantele Barzan	97
Productivity memory, macroeconomic shocks, and institutional constraints in Brazilian agricultural exports	98
Thiago Rocha Fabris, Marco Felipe Zanchetta Moreno Guidio Biondo, Dimas De Oliveira Estevam, Caroline da Graça Jacques	98
Rural Credit and Decent Work in Brazil: Structural Inequalities Between Agribusiness and Family Farming.....	99
Gilberto Zeling, Dimas Estevam	99
WORKING GROUP 10: RETHINKING LABOUR IN AGRI-FOOD MODELS IN AFRICA	100
Climate Change, Global Economics, and Security Labor: A Study of the Vanilla Farmers Militias of Madagascar	101
Isaac Castellano.....	101
Innovating in research approaches to support sustainable mechanization in Africa.....	102
Teatske BAKKER, Pauline PUGEAUX.....	102
Behind the Promises of Youth Agricultural Entrepreneurship: Evidence from Côte d'Ivoire.....	103
Jean François Xavier Kessy	103
Large-scale agricultural investments, jobs, and land relations: what does it tell us for regional development perspective. The case of the maize sector, Bono East region, Ghana	104
Sara Mercandalli ¹ , Pierre Girard ¹ , Dzifa Torvikey ² , Kofi Asante ² , Charline Sempere ¹	104
Agricultural Production Collectivities and Youth Employment in Northern Ghana.....	105

Gertrude Aputiik	105
Histories of technologies: Labour, Work and Agricultural Revolution in Ghana's Rice Sector	106
Gertrude Dzifa Torvikey ¹ , Kofi Takyi Asante ²	106
Balancing Sustainability and Inclusion: The EUDR and Ghana's Cocoa Smallholders.....	107
Hedvig Lagercrantz ¹ , Lisa Guerra ² , Harald Grethe ¹ , Dagmar Mithöfer ¹	107
Drivers of the labour content in agricultural production systems. Insights from Ghana	108
Pierre Girard ¹ , Cédric Gaillard ² , Sandrine Michel ³ , Fred Dzanku ⁴ , Emmanuel Sasu ⁴ , Guillaume Soullier ¹	108
Trading as a Major Source of Employment in Food Value Chains: Evidence from Ghana's Maize Sector	109
Guillaume Soullier ¹ , Ninon Sirdey ³ , Samuel Ahoudjo ³ , Grace Wilson ² , Pierre Girard ¹	109
From Family Labor to Permanent Wage Work: Farm Workload and Social Sustainability in Algerian Agriculture	110
Amina Raggas ¹ , Marouane CHAAMI ¹ , Fatima Lambarraa-Lehnhardt ²	110
Drivers of decent jobs in mango and cashew processing SMEs in West Africa.....	111
WORKING GROUP 11: COPING WITH WORK CONSTRAINTS WITHIN COMPLEX CROP / LIVESTOCK SYSTEMS IN THE AFRICAN FARMING SECTOR	112
Assessing workload and its remuneration in various family based smallholder complex crop/livestock systems in Morocco.....	113
Mohamed Taher Sraïri, Hakim Amartini, Meryem Bazay, Loubna Ouidat.....	113
Studying farmers' practices and work organization in plantain farms in West Africa.....	114
Teatske Bakker ^{1,2,3} , Nazaire Worou Espérance Biaou ³ , Pauline Pugeaux ^{4,5} , Natson Eyram Amengor ⁶ , Anicet Gbèblonoudo Dassou ⁷ , Déless Edmond Fulgence Thiémélé ⁸	114
Work organization in complex crop-livestock systems : the case of rice-fish farming in Africa	115
Teatske Bakker ¹ , Anne Périnelle ² , Amboaraso Razafindratsima ³ , Manuella Randrianandrasana ⁴ , Lucas Fertin ¹	115
Work organization related to intensification practices on rice farming systems in Ghana	116
Nathalie Hostiou ¹ , Pierre Girard ² , Guillaume Soullier ² , Dzifa Torvikey ³ , Yaa Osei-Mensah ³ , B Dedieu ¹	116
The effect of sickness on family labor supply and crop productivity in Africa: Panel data evidence from Ethiopia.....	117
Mekonnen Bekele Wakeyo	117
Impact de la mécanisation sur l'emploi et les conditions de travail dans les exploitations rizicoles en transition agroécologique : le cas du lac de Guiers.....	118
Aida Mbaye DEME ¹ , Pape Bilal DIAKHATE ² , Mor NGOM ² , EL HADJI Kabe GAYE ² , Moussa SALL ²	118

WORKING GROUP 12: SOZIALE DYNAMIKEN UND NACHHALTIGKEIT ALS MOTOR NEUER ARBEITSPROZESSE 119

Co-Farming - Agricultural Incubator	120
Carmen Kummer ¹ , Adèle Garret ² , Bernadette Oehen ³	120

Farm visit groups and farm kindergartens as an educational model: the legal, institutional, and safety barriers for preschool children in Austria	121
Pamina Adamer, Elisabeth Quendler	121

Einfluss der Wiedervernässung auf Trittsicherheit und Befahrbarkeit von Moorweideflächen	122
Juliana Mačuhová, Stefan Thurner	122

Herausforderungen auf dem Weg zur Digitalisierung in der Broilerhaltung in Deutschland	123
Christina Umstätter ¹ , Martin Kraft ¹ , Anne-Kathrin Schwab ² , Andrii Besieda ¹	123

WORKING GROUP 13: ASSESSING AND INTERPRETING FARM WORKLOAD: PATHWAYS, PRACTICES AND PERSPECTIVES 124

Complementarity of the Work Assessment Method and Aptimiz app to tackle the labour organisation issues in dairy cattle farms	125
Jocelyn FAGON, Emmanuel BEGUIN, Laure BRUN-LAFLEUR	125

A farmer-focused survey instrument for exploring workload on farms	126
Conor Hogan, John McCabe	126

Modelling the future human capital requirements of Irish dairy farms	127
Bridget Craig ^{1,2} , Marion Beecher ² , Conor Hogan ¹	127

A pilot study on the Work Assessment Method (WAM) applied on Irish dairy farms	128
Bernadette O'Brien ¹ , Patrick O'Dwyer ^{1,2} , James Kinsella ² , Marion Beecher ³	128

How Working Time and Perceived Workload Relate to Farmers' Perceived Burden	129
Rita Saleh, Katja Heitkämper, Sarina Altermatt, Nadja El Benni, Sabine Liebenehm	129

Modelling agricultural labour time – experiences from Switzerland	130
Katja Heitkämper, Stefan Mann	130

Work, productivity and structural transformation in world agricultures (1960-2023). Using statistics as tools of evidence and government	131
Bruno Dorin ^{1,2}	131

Workload assessment of dairy farmers and dairy farmers-cheesemakers in France	132
Lynda Allouche ^{1,2} , Mohamed Hamadouche ^{3,4} , Jean François Tourrand ⁵	132

WORKING GROUP 14: CLIMATE SHOCKS AND LABOUR MARKET TRANSITIONS IN AGRICULTURE 133

Livelihood Vulnerability of Agrarian Tribal Households in Rural India: Assessment and Determinants	134
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Kumari Ankita	134
Climate Shocks, Employer Stratification, and Contract Labor in U.S. Agriculture	135
Anita Alves Pena ^{1,2,3,4}	135
Intergenerational Labor Market Transitions in MENA: Exploring the Impact of Climate Shocks	136
Shireen Alazzawi, Yasmine Abdelfattah, Vladimir Hlasny	136
WORKING GROUP 16: CLIMATE CHANGE AND TRANSFORMATION OF WORK IN ANIMAL HUSBANDRY	137
Bees and beekeepers facing climate change: reconfiguration of beekeeping work.....	138
Lucie Dupré ¹ , Floriane Derbez ²	138
Climate change impacts in mixed pigs-beef cattle systems in grasslands areas: workload and mental load of farmers.....	139
Sylvie Mugnier ^{1,2} , Léa Valéro ¹ , Catherine Husson ^{1,2} , Bruno Dounies ³ , Christelle Philippeau ¹	139
Laundering and Evasion in Response to Sustainable Sourcing Policies: Evidence from Brazil's Cattle Sector	140
Tara Mittelberg ¹ , Marin E. Skidmore ² , Juliana L.S.C. Brandão ¹ , Lisa L. Rausch ¹ , Holly K. Gibbs ¹	140
WORKING GROUP 17: IMPACT OF ANIMAL WELFARE IMPROVEMENT ON WORKING CONDITIONS	141
Impact of implementation of minimal confinement of lactating sows on pig husbandry and working conditions of stockpeople	142
Ashley Jane Norval ^{1,2} , Renate Wesselink ² , Perry den Brok ² , Vivi Aarestrup Moustsen ³	142
Study of the impacts of animal welfare practices on the wellbeing of dairy and pig farmers	143
Estelle Leroux ¹ , Morgane Leroux ¹ , Coralie Cocherel ¹ , Céline Lemignier ² , Le Guenic Marylise ³ , Caroline Oulhen ⁴ , Vanessa Lollivier ⁵	143
Exploring Relational Practices between farmers and Limousin cattle to support One Welfare approaches in suckler systems.	144
Gaël Barbier ^{1,2} , Elsa Delanoue ³ , Romain Lardy ² , Xavier Boivin ²	144
Evolution of Work Perceptions in a Group of Women Livestock Farmers Committed to One Welfare	145
Marylise LE GUENIC ¹ , Pascale GUILLERMIC ¹ , Laurence ANNIC ² , Estelle LEROUX ³ , Christophe TACHEZ ^{1,2}	145
WORKING GROUP 18: DOCUMENTING STRATEGIES OF PRESERVATION IN AGRICULTURAL WORK	146
A Gender-Informed Perspective on the Work Challenges of New Entrants to Organic Farming	147
Emna Khémiri ¹ , Leïla Boudra ² , Adelaide Nascimento ¹	147

Sustainable work in diversified agricultural systems: the case of mixed fruit tree-vegetable system	148
Marine Chaillard, Aurélie Cardona, Guillaume Ollivier	148
Detecting difficulties experienced by farmers at an earlier stage : a key for work prevention	149
Xavier Coquil, Jean-Yves Pailleux	149
Exploring risk pathways and safety measures during the high-risk bovine periparturient period: A survivor informed study.	150
Kirsty Sweet ¹ , Sinéad Flannery ¹ , John McNamara ² , Francis Bligh ²	150
The role of trees and hedgerows in agricultural practices. An ethnographical approach of environmental preservation practices in the Belgian agricultural landscape	151
Gianni Malica	151
WORKING GROUP 19: GENDERED WORK AND WORKING GENDER	152
Global patterns of intra-household and gender data gaps in national agriculture census	153
Martina Occelli	153
TERRITORY, WORK, AND HEALTH IN AGROECOLOGY: GENDER ISSUES IN THE CHALLENGES OF SUSTAINABILITY FOR BRAZIL AND PORTUGAL	154
Sandra Gemma ¹ , Liliana Cunha ²	154
Invisible but Essential: A Phenomenological Analysis of Women's Embodied Labour in Accra's Informal Food Service Sector Using Photovoice	155
Patrick Illien	155
Latina Farmworkers Navigating Childcare: Exploring Challenges and Resources	156
Rebecca Som Castellano ¹ , Lisa Meierotto ¹ , Natalie Garner ²	156
Hard-to-Reach Workers, Hard-to-Fill Data Gaps: Lessons from Web-Based Respondent-Driven Sampling in Swiss Horticulture	157
Celestina Heepen, Eva-Marie Meemken	157
The gender of the researchers as a prism for accessing data in agricultural fieldwork	158
Paule Yacoubé ¹ , Edgar Perrin ²	158
The (Non)Performativity of Social Sustainability: Queer Farmworkers in Switzerland	159
Prisca Pfammatter, Susan Thieme	159
« Force autant que t'es con, ça ne marchera pas » (“The harder you push, the stupider you look—it won't work”) : The Making of Agricultural Masculinities in Sciences and Techniques of Agro-equipment	160
Manon CAUDRON FOURNIER	160
Women's wine, women of the vineyards: reconfiguring femininity by working on wine farms in the Loire Valley.	161
Camille Hochedez	161
A driving masculinity : the commitment of outsourced workers in arable farming	162

Paule Yacoub	162
Invisibility and Recognition of Women's Agricultural Work in the Bengal Delta: Between Empowerment and Constraint	163
Emilie CREMIN ¹ , Jinat HOSSAIN ²	163
Prioritising business success over the financial security of women in agriculture	164
Anna Kröplin, Sandra Contzen	164
Gender-Gaps in German Agriculture - what we know regarding female labour, income and participation	165
JULIANE ZAZIE VON DAVIER	165
Working Beyond the Field: Gender, Social Reproduction and Seasonal Farm Labour in Spain	166
Nora Komposch	166
Gender and labour management strategies in field crops: Evidence from Belgium	167
Sophie Henrotte, Goedele Van den Broeck	167
Caring for Nature by Caring for People – The Invisible Relational Sustainability Labour of Landfrauen	168
Johanna Jacobi, Jasmin Schmid	168
Legitimation in a “contested territory”: an intersectional approach to vegetable crop association knowledge	169
Maya Rastouil	169
The Invisible Hours: Gendered Time Use and the ‘Double Burden’ in India’s Agri-Food Systems	170
Rumbidzai Ngoro, Valentina Costa, Erdgin Mane, Clara Park	170
WORKING GROUP 20: THE HUMAN ELEMENT OF SUSTAINABLE FARMING	171
Comparison of farmers' real protective practices with protection standards in apple growing in Quebec	172
Caroline JOLLY ¹ , Anouk Aubert-Simard ¹ , Louis Galet ² , Ludovic Tuduri ²	172
Community-Based Participatory Research to Improve Farm Labor Health and Safety in the U.S. South	173
Kim Niewolny ¹ , David Smilnak ¹ , Ana Marie Camargo Palomino ¹ , Beth Sastre-Flores ² , Tonya Osinkosky ³ , Roberto Franco ⁴	173
Does the New EU CAP Social Conditionality Align with Current Social Issues in Farming? A Multi-Level Assessment Using the MLSAT Methodology	174
Prathamesh Bachche ¹ , Mikkael Santa ² , Dushica Santa ³ , Martina Jakob ⁴	174
Digital and Robotic Farming in Europe: Implications for Occupational Safety and Health from a Regulatory and Labour Perspective	175
Dushica Santa ¹ , Prathamesh Bachche ² , Martina Carola Jakob ²	175
WORKING GROUP 22: HEALTH AND SAFETY IN FARMING	176

Evaluation of User Satisfaction with Respiratory Protective Masks in Poultry and Pig Farming.....	177
Marion Ruch ¹ , Solène Lagadec ¹ , Dominique Bellanger ² , Lise Leroux ² , Laurine Gabriel ² , Nadine Guingand ⁵ , Pauline Lecorguille ³ , Véronique Le Gall ⁴ , Carole Delaqueze ⁴	177
Assessment of Physical Workload in Viticultural Tasks for the Development of an Evaluation Framework for the Socially Sustainable Selection of Exoskeletons in Viticulture	178
Anna Sophie Hertwig, Elisabeth Quendler	178
From practice to design: rethinking orchard sprayers for risk prevention in apple growing beyond pesticide spraying	179
Anouk Aubert-Simard ¹ , Élise Dion-Provencher ¹ , Frédérique Cantin ² , Isabelle Feillou ² , Caroline Jolly ¹	179
Everyday work and use of assistive technologies among farmers with physical disabilities in Austria: a qualitative study	180
Magdalena Wagner, Elisabeth Quendler.....	180
Considerations for Supporting Farmer and Rancher Mental Health	181
Rebecca Mott ¹ , Kim Keller ¹ , John Tummons ¹ , Josie Rudolphi ² , Courtney Cuthbertson ² , Abby Loesing ¹ , Megan Schneider ¹ , Meg Shively ¹	181
Understanding and managing fatigue risk in Australian agriculture sectors	182
Madeline Sprajcer ¹ , Amy Cosby ² , Matthew Thomas ¹ , Nicole McDonald ² , Kerri-Lynn Peachey ³ , Tony Lower ³ , Carlos Mesa-Castrillon ³ , Drew Dawson ¹ , Jamie Manning ² , Sally Ferguson ¹	182
Psychological Safety as One Key Constant in Providing Motivation and Engagement in a Storm of Change for Farming Enterprises	183
Chantal Corish ¹ , Amy Cosby ¹ , Matthew Thomas ² , Nicole McDonald ¹	183
Farming Mental Health: Co-produced Approaches to Promoting Wellbeing in Irish Agricultural Communities	184
Finola Colgan	184
Mental Health among Farmers in Rural Germany: A Mixed-Methods Approach to Assess Symptom Prevalence, Risk Factors, and Implications for Occupational Health.....	185
Linda Hoffmeister	185
Mental illness as an occupational hazard: Neurotoxicity and psychosocial risks in agriculture	186
Bruna Teixeira ¹ , Sandra Gemma ¹ , Ana Oda ¹ , Iracimara Messias ² , Adelaide Nascimento ³	186
Pesticide use practices among farmers in a region of Eastern Algeria.....	187
Nesrine MAHDI ¹ , Amira KHELLOUT ¹ , Alia BAKIR ¹ , Sawsen AZIZI ¹ , Mohamed HAMADOUCHE ^{1,2}	187
Health as determinant of farm injury risk: evidence and implications	188
Diana van Doorn, David Meredith.....	188
WORKING GROUP 24: LANDSCAPES AND LIFESCAPES OF SUPPORT	189
Dairy Consolidation, Identity, and Mental Health: Landscapes and Lifescapes of Support in Rural New York.....	190

Conor Hammersley, Julie Sorensen, Destiny Trombley.....	190
Supporting the Supporters; Lived Experiences of the ‘Accidental Counsellor’	191
David Rose ¹ , Jennifer Howse ² , Katharina Watson ² , Damian Maye ³ , Lisa Morgans ²	191
Toward better support for mental workload: comparing dairy and poultry farmers’ definitions and perceptions.....	192
Anne-Lise Jacquot ¹ , Nabila Gain Nachi ² , Nelly Glochon ² , Marion Ruch ²	192
Talking Futures: Supporting Farmer and Advisor Wellbeing Through Future-Oriented Conversations	193
Aimee Graville	193
Informal support for mental health in farming: Understanding the experiences of ‘accidental counsellors’	194
Rebecca Wheeler, Matt Lobley, Lucy Szaboova	194
Overview of potential stress measures applicable in the agricultural context.....	195
Linda Reissig	195
Putting the Farmer First: Collaborating to support the physical and behavioral health of people working in agriculture	196
Clinton Wilson	196
Expanding Rural Community Mental Health Systems in Farming Communities: A Case Study in Intergroup Dialogue among Faith Leaders and Behavioral Health Providers.....	197
Morgan Valley ¹ , Adrienne Keeney ² , Cheryl Beseler ³ , Lorann Stallones ¹	197
The Mental Health of Farm Wives	198
Sharon May	198
Addressing Suicide In Agriculture. Supporting and Preventing the biggest hidden danger today.....	199
Lucia Slack.....	199
Mental Health in Agricultural Contexts: Does the issue lie with farmers or farming?	200
Barbara Moore ^{1,2} , Noel Richardson ¹ , Tomás Russell ² , Louise McHugh ²	200
Expanding access to professional behavioral health services: Lessons learned and recommendations from the U.S.....	201
Josie Rudolphi, Cheyanne Dierickx	201
Thinking Landscapes of Support through the Interpretative Frameworks of Wellbeings and Moral Economy	202
Mateja Slovenc Grasselli	202
WORKING GROUP 25: LIVING AND WORKING IN AGRICULTURE	203
Health and Healthcare Access Issues: Disturbing Trends in our Nation’s Producer Communities ..	204
Julie Sorensen, John May	204

“Psychological Support Only Puts Out Fires”: Farmers’ Accounts of Health, Responsibility, and Well-Being in Post-1991 Slovenia	205
Duska Knezevic Hocevar	205
The health and wellbeing of women in farming: Initial results from a survey in England and Wales	206
Sarah Nyczaj Kyle ¹ , Rebecca Wheeler ¹ , Catherine Broomfield ¹ , Matt Lobley ¹ , Caroline Nye ¹ , Alex Phillimore ² , Linda Jones ²	206
Enhancing farmers’ well-being and the social sustainability of farming through good practices: translating Agricall in Slovenia	207
Majda Černič Istenič	207
Farming under Pressure: A Scoping Review of Stress–Coping–Well-Being Pathways Among European Farmers Using the Stress Process Model (2000–2025)	208
Elahe Vafaei ¹ , David Meredith ² , Sinéad Flannery ¹	208
Conceptualising the burden of farm injury beyond individual occupational hazard	209
Sherin Maria Saji ¹ , David Meredith ² , Sinéad Flannery ¹	209
The role of foreign workers in a segmented labour market, the case of Italian Agriculture and Fisheries	210
Maria Carmela Macrì, Lucia Tudini	210
Identifying Farmer Engagement Preferences for Occupational Safety and Health Information: A Cross-National Cluster Analysis of 1,078 European Farmers	211
Joseph Firnhaber, David Meredith, John McNamara, Sharon Sweeney	211
Living and Working with Volunteers on Alpine Farms: Moral Economies and Social Sustainability in Mountain Agriculture	212
Maria Anna Bertolino, Viviane Cretton, Marie Eich	212
Supporting the development of decent work on family farms	213
Xavier COQUIL ¹ , Angèle SATCHE ³ , Romain DIEULOT ² , Maÿlis CARRE ²	213
Stress And Mental Wellbeing in International Farming Communities: Introducing A New Measurement Approach	214
Emma Barkus ¹ , Sarah Kyle ¹ , Andria Jones ² , Stephen Dunne ¹	214
Impact of adopting agroecological practices on household food security around Lake Guiers in Senegal	215
MOR NGOM ¹ , JEAN PIERRE ADIOUMA NDIAYE ² , Pape Bilal DIAKHATE ³ , KABE GAYE ⁴ , AHMADOU TANOU DIALLO ⁵	215
Advancing living and working in agriculture by addressing psychological sustainability.	216
Nicole McDonald ¹ , Amy Cosby ¹ , Chantal Corish ¹ , Rebecca Black ² , Jennifer Luke ² , Peter McIlveen ²	216
Seasonal Debt, Cash-Flow Insecurity, and Social Sustainability in Rice Farming: Lived Realities and Support Pathways in Indonesia	217
Fatjri Nur Tajuddin ¹ , Fatjri Nur Tajuddin ²	217

How Farmers Perceive Their Work: Comparing Working Conditions at CSA-Farms with other Farming Contexts	218
Kristina Steinmar ¹ , Katharina Beyerl ^{1,2}	218
Strategies used by farmers when facing financial and mental challenges	219
Florence Becot ¹ , Sarah Ruskowski ¹ , Akanimo Udoekong ¹ , Andrea Bjornestad ² , Carrie Henning-Smith ³	219
Living and working through ecological transition in family farming	220
Julie Hermesse ¹ , Corentin Hecquet ² , Nicolas Loodts ³ , Gianni Malica ⁴	220

Working Group 1: The Impact of Digitalization on Agri-Food Labour and Production Systems

Convenors: Katja Heitkämper (Agroscope, Switzerland), Marianne Cockburn (Agroscope, Switzerland)

This working group focuses on the double-edged impact of digitalization on agricultural and food systems and looks for holistic approaches to address the changing landscape of work and production in the agri-food economy. It acknowledges that these technologies can improve productivity, resource efficiency and traceability, but also pose significant challenges especially for labour dynamics. The group aims i) to share current research results on technological advances and digitalization in agriculture, ii) to promote dialogue between scientists, practitioners, and policy makers, iii) to develop recommendations for action such as best practices and policy recommendations for improving working conditions, and iv) to identify research gaps and opportunities for future collaboration.

Employment platforms in the French agricultural sector: towards a digitalised labor market?

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Since the 2010s, digital employment platforms have emerged in French agriculture, amid increasing salaried labour (Forget et al., 2019) and significant recruitment difficulties perceived by employers. These platforms are diverse, ranging from job boards created by start-ups to those developed by institutions such as farmers' unions, as well as social media used directly by farmers for labour exchange. They operate alongside non-digital professional intermediaries, including recruitment or temporary work firms, shared-employment organizations, but also informal intermediaries. Despite their diversity, employment platforms share a common promise (Daugareilh, 2025): to facilitate and accelerate the matching of labour supply and demand through digitalisation. By digitising work exchanges, platforms also might make them more visible and detach them from their social embeddedness. It raises questions given the significance of personal networks and informality in work exchanges and the frequency of work on the fringes of legality (Delaporte, 2018) in French agriculture.

Then, how do these platforms integrate with other labour intermediaries' action ? How do they develop in a sector in which social networks are prevalent and where informal work is widespread?

Theoretically, this Ph.D. is situated between institutional economics and economic sociology, combining the frameworks of wage relations and market embedding. The fieldwork will be subdivided in three surveys, respectively dedicated to intermediaries, farmers, and salaried workers, to take a comprehensive approach on recruitment practices. This communication focuses on the first survey, consisting of 34 semi-structured interviews with platforms, recruitment agencies, temporary labour firms, and job-sharing associations, carried out between spring 2024 and January 2026.

Three main findings of the survey are highlighted. First, I describe the different platforms and propose a typology: specialised job boards, institutional ones and generalist job-boards or social media. I point out that small specialised agricultural job platforms experience much more economic failure compared to large generalist platforms. Then, I analyse how these platforms integrate with the practices of non-digital intermediaries. I show that intermediaries and platforms used for recruitment differ depending on the level of remuneration and responsibility. Exchanges for temporary and low-paid work tend to take place on Facebook, Indeed is used for more intermediate jobs (e.g. agricultural machinery operator), while LinkedIn is used by headhunters for positions with a high level of responsibility and remuneration. Finally, I discuss the idea of digitalisation itself, since platforms seem not to replace other intermediaries' action but to extend and instrument it. I present the hypothesis that the success of large generalist platforms like Facebook and LinkedIn lies in their ability to integrate or replicate personal networks.

Keywords: Digital employment platforms, agri-food labour market, intermediation, segmentation, embeddedness.

WORKPLACE TRANSITIONS AND IMPACTS ON DAIRY FARMS ADOPTING PRECISION LIVESTOCK FARMING TECHNOLOGIES IN THE UK AND NEW ZEALAND

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Dairy farmers are managing more cows than ever before, with the associated challenge of managing and maintaining good animal health and welfare. Digital aids, such as precision livestock farming (PLF) tools that monitor individual dairy cows 24/7 could support cow management. Many studies have reviewed digital technologies and their uptake by dairy farmers, however there is less research exploring how technologies are used practically, and how they change work and life on the farm post-adoption.

The objective of this study was to better understand the extent of PLF technology use and its impact on farm management, farm workers and the cows. To facilitate this, a framework was used to assess the **purpose**, on-farm **practicality** and **effects** of digital technology. An on-line survey was conducted from April to November 2025 which generated 306 responses from UK dairy farmers. Respondents represented a wide range of herd sizes; from less than 100 to over 1,000 cows. Only 8% of respondents had no digital technology and 68% were using PLF technologies. When PLF technologies were discontinued, almost all (98.5%) were replaced, indicating that once adopted it becomes integral to dairy farm operations, even following negative experiences. The main **purposes** driving the adopting of PLF technology were both animal centric; to improve heat detection (55%) and animal health (47%) and human orientated; to save time, reduce labour, or address labour issues (52%). For those not presently using PLF technologies, 43% expressed they would likely install a technology in the next 5 years, indicating that usage will continue to grow, and this is across all herd sizes.

Technology adoption and use is not linear, so gaining an in-depth knowledge of individual user experiences is critical to better understand how technologies can and have changed working practices. Follow-up qualitative interviews are underway with participants from the UK survey and have been completed with 12 dairy farms in New Zealand. Considering the **practicalities**, preliminary results highlight the benefits of PLF technology, including aiding farm management decisions, reorganising work and increased time for other tasks or family. The data is also giving farm staff confidence to make decisions, helping upskill workers and improve animal health. However, farmers are clear that technology will not and should not replace good stockmanship skills. The research also highlights potential 'unintended consequences' of relying on digital PLF technology, including difficulties taking a break from the technology, an increasing reliance on technology that over time reduces human observations and perceptions that technology may expose human errors or failures. Once the qualitative data has been analysed (early 2026), the conference paper will reflect on the double-edged nature of the **effects** technology has on farm and how its impacts are distributed differently across humans and non-humans.

Keywords: Precision Livestock Farming, Dairy Farm Labour, Socio-Technical Transition, Responsible Innovation

GenAI to overcome the data-action gap on poultry farms: opportunities and risks

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Through the application of technologies designed to monitor animals 24/7, precision livestock technologies theoretically offer the potential to improve animal health, welfare, and productivity. For benefits to result in practice, however, data needs to be interpretable and lead to the implementation of corrective management practices on-farm. Generative AI (GenAI) through the application of Large Language Models (LLMs) could be a solution to cut through data collected on-farm, translating it into actionable decisions for the farmer, advisor, and workforce. However, as with other precision livestock technologies, initial research on the opportunities and risks associated with the use of GenAI in farming illustrates its potential to be a double-edged sword. Our work makes an empirical contribution to emergent social science literature that has begun to investigate the use of LLMs in agricultural extension (e.g., Tzachor et al., 2023; de Clercq et al., 2024; Marinoudi et al., 2024). We enhance critical interrogations of the role of GenAI, if any, in overcoming data-action gaps on-farm. We report on an exploratory investigation of how LLMs are being used in a UK poultry system to improve farm decision-making. We collaborated with a company which has developed an AI model that predicts water intake deviations on poultry farms (c.8 farms with the technology) and identifies the possible cause, using a LLM to communicate statements to the farm workforce about the corrective action/s to take. Initial work involved performing animal welfare validations of the system, illustrating that water intake anomalies generally correlate with poor welfare outcomes at slaughter. This indicated that the system does identify crucial problems, which the LLM-produced statements encourage the farm manager/workforce to take remedial action on. Through six interviews with technology developers, area managers, and poultry farmers, we uncovered how genAI was being used in a distributed system of labour, involving farm area managers, as well as on-site farm managers and advisory staff. Area managers and farm managers used the LLM to inform work prioritization and to identify farms in need of advisory support, and various opportunities were highlighted: the ability of the LLM to concisely communicate data-based insights, avoiding information overload, as well as its potential to help in the remote monitoring of numerous farms. However, risks of genAI use were raised by some of our interviewees, including the risk of misinformation, trust/privacy, digital divides, and a growing 'always-on' culture. Whilst some issues like the ability to use the LLM to communicate in culturally acceptable ways and to act as a 'Big Brother' for monitoring of multiple farms were generally raised in positive ways, critical analysis also raises questions over the potential reinforcement of societal inequalities and surveillance capitalism.

Keywords: GenAI, LLMs, data-action gap

Transforming Agriculture through the Digital Agricultural Innovation Systems (DAIS) in India? Exploring Public Policies and Private Entrepreneurship

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Agri-digitalization refers to applying digital technologies to leverage computational advantages in processing and converting data into actionable insights for agriculture. The Indian government has been promoting agri-digitalization for a while, often termed Digital Public Infrastructure (DPI). DPI in agriculture essentially entails the creation of an Agri Stack, a comprehensive farmer database with details on land, crops, cropping patterns, livestock, and other related information. The Stack will be a consolidated platform for AgTech startups, agri-value chain enterprises, government programs, and banks to access farmer's data. The objective of this research is to study agri-digitalization by analyzing public policies through which agri-digitalization is conceived in India as well as private entrepreneurship, mainly the AgTech startup that develops Smart Farming App (SFAs), which also constituted a significant share in the agri-digitalization process in India. This research applied a qualitative case study methodology comprising two interrelated explorations: first, an exploration of the wider context of digital governance in India from which agri-digitalization has emerged, and second, a narrower exploration of a SFA vis-à-vis farmers as end users of SFAs, illustrated through Krishify app. Our research shows that agri-digitalization that emerged in the Indian context is techno-optimist and deeply entrenched in the commoditized corporate paradigm, totally disconnected from the rural realities of small and marginal farmers of India. The techno-optimism and commoditized paradigm are borne out of public policies and programs long pursued by the Indian government under its digital governance framework. Therefore, our research concludes by implying how farmers can be brought to the agri-digitalization process.

Keywords: Agri-Digitalization, Smart Farming App, Public Policy, India

Work organisation and transformation through virtual fencing - insights from 20 New Zealand dairy farms

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Digital technologies are offering increased promise for agricultural workplace transformation. In grazed livestock systems, one transformative technology that has become commercially available in the past decade is virtual fencing (VF). While the focus is on the virtual fencing/herding capability, the technology can also include sensors to provide herd and farm management data. VF has potentially important implications for how work is structured, experienced and managed on farms. The aim of this research was to understand the workplace implications associated with the use of VF in pasture-based dairy systems.

Semi-structured interviews were conducted in 2023 with 20 New Zealand (NZ) dairy farmers who were early users of VF in grazed dairy systems, with between 1 to 3 years of use. The interviews explored topics including farm system description, use of VF for operational management, the impact of VF on workplace practices and organisation, and changes to skills and workloads. Interviews were voice-recorded, transcribed, and analysed using inductive content analysis methodology with Atlas.ti software. The findings below represent the insights and perceptions of the farmers interviewed, rather than quantified results.

Findings highlight that farmer adoption was motivated less by financial return and more by innovativeness, enhanced job satisfaction, and improved work–life balance. VF reduced or eliminated labour-intensive tasks such as early-morning herding and daily break fencing, enabling some farmers to reduce total hours worked, reallocate tasks, or operate with fewer employees.

Workplace roles and skillsets shifted with VF use in some cases. Some staff unfamiliar with smartphones initially experienced increased stress and exclusion, but many adapted with training and became more engaged. VF also had implications for cognitive load: although physical tasks decreased, some farmers reported increases in mental load and “constant connection” due to app-based monitoring and decision-making. These effects resembled those observed with other sensor technologies, raising questions about digital fatigue and the need for clear boundaries between work and personal time in a digital agriculture future.

Successful integration required farm-system and infrastructure adaptations due to changes in grazing management, such as additional water troughs, modified laneways, reconfigured paddock layouts, initially impacting workload and investment decisions. Despite these challenges, nearly all study participants intended to continue using VF, citing strong non-financial workplace benefits such as reduced fatigue, more flexible schedules, improved staff retention, and a more attractive employment environment. This research demonstrates that VF can reshape dairy workplaces in ways that support sustainability, employee wellbeing, and the future attractiveness of dairy careers, provided that training, support, and thoughtful farm-system design accompany adoption.

Keywords: work organisation, digital agriculture, cognitive load, task allocation

Working Group 2: Critical Perspectives on Agricultural Robotization

Convenors: Olivier Ejderyan (FiBL, Switzerland)

This working group will interrogate the relationships between agricultural workers/farmers and robots and the meanings of robotised agricultural work. It considers emancipatory perspectives, political ecologies of robotisation and robotisation in the broader context of digitalisation. The working group aims to contribute to critical agricultural research on digitalisation and automation by i) compiling empirical and theoretical contributions examining labour, meaning, inclusion, and political ecologies of robotisation in agri-food systems; ii) fostering dialogue across disciplines including agrarian studies, STS, political ecology, labour studies, and responsible innovation research; iii) mapping competing narratives and imaginaries of agricultural robotisation, and iv) exploring how agricultural robotics can be understood not only as technical artefacts but also as socio-political projects with implications for justice, sustainability, cultural heritage, and the transformation of agri-food systems.

Workflow of the operator when supervising multiple field robots under different operating conditions

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The agricultural sector is facing increasing challenges, including rising operational costs, labour shortages and growing demands for sustainable and efficient production. Autonomous field machines are gaining relevance as a potential response, as they enable a temporal decoupling of machine operation from continuous human presence while maintaining precise field operations. Building on empirically derived operational time data, this study analyses how the time structure of autonomous field operations influences operator involvement and creates the basis for extended deployment concepts, including the coordinated operation of multiple autonomous machines.

Based on a process analysis, work sub-processes of both the operator and the autonomous machine were defined and recorded. Time measurements were carried out through structured work observations, while irregular downtimes were documented using robot error messages and supplementary operator notes. Using statistically derived working time requirements, a simulation model was developed to analyse the influence of field size, field length and distance between farm and field on area performance, field efficiency and operator working time. Beyond single-machine operation, the simulation was extended to identify conditions allowing coordinated supervision of multiple autonomous machines by one operator. The time studies were carried out using a 115 kW autonomous field robot and conventional tractors across different power classes and working widths, reflecting medium-scale and larger farming operations.

The results indicate that structural field parameters such as field size, field length and distance between farm and field have a substantial influence on operational time allocation. Longer fields reduce turning frequency and increase productive working time, whereas increasing distances raise transfer-related time requirements. In contrast to conventional tractors that can be driven directly to the field, autonomous robots often require low-loader transport, resulting in additional loading and unloading time and a delayed start of field operations. Once deployed, the autonomous robot operates independently and benefits from high manoeuvrability, particularly in small or irregularly shaped fields. These characteristics affect operator availability and the feasibility of supervising additional machines.

A key outcome concerns operator working time: while tractor-based systems require continuous presence, autonomous robots create time windows with reduced operator engagement. Under favourable field and distance conditions, this temporal decoupling can provide capacity for supervising more than one machine. At the same time, logistical constraints and the timing of required interventions limit this potential. By combining field trials with extended simulation scenarios, the study provides a data-driven basis for assessing boundary conditions for coordinated multi-robot operation in agricultural practice.

Keywords: Autonomous field robots, Multi-robot supervision, Operator workload, Deployment strategies

Integrating uses and users into the design of digital agricultural technologies: an activity-centered approach

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The digitalization of agriculture is often presented as a major lever for improving productivity, traceability, and sustainability in agri-food systems (Bournigal et al., 2015). However, numerous studies point out that the introduction of digital and robotic technologies profoundly transforms work situations and may generate tensions, or even deteriorations in working conditions, when actual uses and user needs are insufficiently considered during the design phase. This paper builds on this observation and aims to analyze how integrating uses and users can constitute a central lever for the sustainable digitalization of agricultural work.

The study draws on an interdisciplinary research project, AgriFutur, bringing together agronomists, modelers, roboticists, and ergonomists to design digital technologies for agriculture. The project aims to support the agroecological transition by integrating sensors, robots, and digital tools into farming practices, while taking into account working conditions, socio-economic issues, and ecosystem dynamics. In this context, we argue that activity and use analysis plays a structuring role in the approach (Barcellini & al. 2014): it seeks to analyze needs, constraints, and existing uses in order to anticipate and simulate future uses, and to support dialogue between disciplines.

The method is based on the analysis of a use case involving the introduction of a robot in a greenhouse-based, soilless strawberry farm. The methodological framework combines semi-structured interviews with the farmer and employees, as well as observations of work in real situations during different phases of the technical itinerary. This use case represents a first attempt at co-design with the farmer, as well as with the designers and researchers involved in the project (Béguin, Cerf & Prost, 2012).

Initial observations show that technology design does not stop at deployment but continues through use, via a process of instrumental genesis (Folcher 2003), in which users develop patterns of use that were not initially anticipated. This is illustrated by the adaptation of the robot through the creation of a platform to meet specific farm needs. This design-in-use reveals key functional expectations and criteria for appropriation (Béguin, Cerf & Prost, 2012).

However, the robot was not used during the harvesting phase, which is central to strawberry production. A new need therefore emerged for a robotic solution dedicated to harvesting as well. The farmer built a mock-up himself, which currently feeds collective discussions around the design of an innovative solution. To enrich the specifications, one perspective is to carry out a Diagnostic of Usage Situations (DSU) (Cerf et al., 2025) in several soilless strawberry farms. This work aims to contribute to reflections on the transformations of agricultural work linked to digitalization, with a view to developing recommendations for sustainable work.

Keywords: Activity-centered design, Sustainable agricultural work, Co-design, Technology appropriation

Emerging technology narratives of agricultural robotics in UK media, and their implications for responsible innovation

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While robotics has been identified by some institutions as potentially transformative for agriculture, scholars have argued that the technology could have negative impacts. The impact of agricultural robotics on agricultural labour is likely to lead to both the alleviation of labour shortages in some contexts, and the displacement of critical roles in others, while further significantly changing the relationship of farmers and farm workers to the tasks undertaken on farm. Many agricultural robots are in the early stages of development, commercialisation and adoption – it is therefore important to anticipate the potential impacts of these technologies and substantively engage stakeholders for responsible innovation. However, where substantive inclusion of stakeholders includes lay citizens unfamiliar with the food sector, their understanding of agricultural robotics may be partly informed by narratives encountered elsewhere. In this study, we examine one potential source of these narratives, via a discourse analysis of UK media publications, and compare the presentation of agricultural robotics to commonly identified narratives and arguments for other emerging technologies. We identify common ‘problem scripts’ used to justify agricultural robotics – the labour problem script, the population expansion problem script, and the environmental problem script - and highlight a tendency towards promissory narratives of the technology. We also discuss a common inevitability framing of agricultural robotics, which closes down pathways that pursue the non-adoption of the technology. We reflect on the implications of such narratives for the responsible innovation of agricultural robotics, and their impact on substantive stakeholder inclusion that empowers under-represented agricultural stakeholders to influence the future of the sector. Finally, we highlight the need to consider media narratives when undertaking inclusive responsible innovation, to avoid directing innovation in a linear fashion towards “inevitable” technological fixes, and instead open up broader agricultural futures.

Keywords: responsible innovation, discourse analysis, agricultural robotics, emerging technologies, narratives

Articulating technocentric and anthropocentric approaches in the design and adoption of weeding robots in agroecology

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The transition to agroecological ecosystems poses significant challenges necessitating sustainable technological solutions for precise and efficient cultivation. Although a few robotic solutions for weed control exist, they are not yet suitable for widespread adoption. The GORT project aims to create generic and cost-effective robotic solutions based on open-source developments and field-collected data for monitoring and management, integrating an interdisciplinary, ergonomic and anthropocentric approach for evaluation in agriculture and agroecological contexts.

A critical analysis of technological development in agriculture shows that it is often driven by a technocentric and expert-oriented perspective (Larbaigt, 2020). Technological leaps do not allow users to develop their skills or to gradually appropriate the tools and technologies. More broadly, design processes do not sufficiently rely on the analysis of the specific, situated needs of agricultural activities and their variability. Many innovation projects emerge from needs formulated by intermediary actors or engineers and do not directly involve the farmers concerned (due to issues of access to the field, availability, capacity to analyse activity, etc.).

Within the GORT project, the shared objective among the various stakeholders - supported and structured by ergonomists (Béguin, Cerf & Prost, 2012) - is to involve farmers at the different stages of the design process of the weeding robot: from understanding current practices and needs, to defining design criteria, and finally to design and experimentation.

For this presentation, we will focus on the first stage of the survey methodology implemented to identify the variability and evolution of needs, uses, and representations related to weeding techniques.

Using a multidisciplinary approach (agronomy, ergonomics, engineering, IT), we designed interview and observation protocols that combine different entry points into farmers' practices and how they are changing (based on their technical itineraries and on the technologies) as well as different types of technology use :

1. with farmers with a variety of weeding practices, excluding robotics, seeking to address issues such as alternatives to pesticides, work arduousness, labour turnover, soil depletion and compaction...
2. with farmers who use innovative or precision technologies (electric motorization, automation, modular structures incorporating a variety of tools...) with a gradual technological leap
3. With farmers who use or are experimenting with weeding robots.

We will present the current or expected results and how we imagine they will feed into the project in terms of design choices and dialogue and/or controversies between the perspectives brought by the different actors involved in design and use.

Keywords: weeding robot, participatory design, anthropocentric design, interdisciplinary, ergonomics

Robotics and Automation for Small-Scale Horticulture: A Systematic Review with a Focus on Disability Inclusion

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In Austria, 17.5 % of people want to work on the first market but cannot. Not because there are no jobs, but because the environment and infrastructure do not make it possible. But what if we could use and adapt current technology to allow them to work? People with disabilities (PWD) account for 25 % of the population, 17.5 % of them would be able to work (Schuller et al., n.d.). At the same time, an issue challenging the small-scale horticulture sector is the shortage of labour (Statista 2024). The aim of this work is to survey and evaluate the use of robotic and automated systems on the small-scale horticulture area, as well as analyse the use of these systems to allow PWD to work on the first market in small-scale horticulture.

Given the highly interdisciplinary nature of this research and our aim to view the broader landscape of prior applications and work across the various fields it encompasses, we adopted a systematic literature review to ensure a structured, transparent, and reproducible approach. This method also enables us to identify connections between research and development areas that might otherwise be overlooked.

By focusing on small-scale horticulture, this review points to a gap in Agriculture 4.0 research and outlines potential pathways to support inclusive workforce participation, address labour shortages, and align with the Sustainable Development Goals via responsible robotics.

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Keywords: robotics, automation, small-scale horticulture, inclusion

Cyborg Terraces? On automating mowing and maintaining cultural heritage in the Lavaux vineyards

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This paper focuses on anticipating the wider impacts of using robotization to address labour issues. More specifically, it discusses the dialectical effects of introducing mowing robots in the UNESCO-protected terraced vineyards of Lavaux, in the Lake Geneva region of Switzerland.

Swiss viticulture faces significant labour shortages. At the same time, there is growing pressure to reduce the use of pesticides and herbicides, driven by both market demand and government regulation. Such reductions require more mechanical tasks to be carried out, either by human labour or by machinery. Some of these tasks, such as under-vine work including mowing, weeding, and soil aeration, are physically demanding and must be performed regularly throughout the year.

There are ongoing efforts to robotize some of these tasks, but these have mainly targeted large vineyards. Existing solutions are not tailored to smaller plots or to the steep slopes and terraces that characterize production areas for some terroir wines. Because of the area's World Cultural Heritage status, the stone walls delimiting the terraced plots in the Lavaux vineyards cannot be removed. Working on this terrain with heavy robots is therefore not possible.

As part of the Horizon Europe AGROBOOST project, a pilot study will develop, deploy, and evaluate lightweight robots that can also morph into drones to overcome walls. These robots can be deployed as 'rovers' around the under-vine area for mowing, and potentially for weeding and soil aeration. Due to their lightweight structure, they are expected to cause minimal environmental disturbance or soil erosion and to be affordable.

Based on focus group research with farmers, advisors, technology developers, researchers, and other local stakeholders, this paper examines how local actors jointly (re-)frame the issue of labour shortages when confronted with a proposed technological solution. The analysis of the relationship between the promises associated with these robots and the expectations of farmers and advisors highlights the multiple dimensions of viticultural work, including its role in producing and maintaining the cultural landscape of Lavaux. Building on this analysis, the paper discusses the implications of robotizing work that carries significant cultural value.

Keywords: Automation, cyborg, landscape, culture, material semiotics

An ethnographic study of Drone technology, embodied labour and Farmer's knowledge in agrarian India

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In India, agriculture is the largest employer, central to the livelihoods of millions who depend on it for survival. This paper situates drone technology within the paradoxes of labour surplus and scarcity, exacerbated by shifts toward monocropping. I examine how discussions promoting drones have emerged, analysing claims about their potential and how state policies envision India's agrarian future. The study interrogates whether drones liberate agricultural labour, reinforce or challenge caste inequalities, and reshape power dynamics. As labour becomes increasingly disconnected from agricultural knowledge and its symbolic meaning, it is crucial to ask whose interests are served, whose labour is marginalised, and whose knowledge is rendered invisible.

Drones represent a mode of governing through data, where agricultural knowledge and decision-making are mediated by technological systems rather than rooted in farmers' experiential understanding. They are positioned as extensions of scientific expertise that enable precision and evidence-based decisions. By producing standardized and comparable farm data, drones make agricultural practices more legible and governable. At the same time, drone technology shifts authority away from farmers' embodied, experiential knowledge toward data-driven decision-making systems.

My ethnography is deeply imbricated in conceptual and empirical approaches, ensuring theoretical insights and field realities develop in dialogue. Fieldwork in Haryana occurs in two phases, where drone-based agriculture is promoted via Custom Hiring Centres (CHCs) and Krishi Vigyan Kendras (KVKs). Phase I documents operational challenges, training sessions, and everyday practices during peak spraying seasons. Phase II engages with "Drone Didis," drone entrepreneurs, and traces networks of women's self-help groups, CHCs, and FPO leaders to understand how access to technology is mediated. I will also interview farmers, FPOs, Liquid Fertiliser Corporations, and drone manufacturers.

The study investigates how technology, embodied labour, and farmers' knowledge are mediated and transformed through drone adoption. It analyses how technology reshapes the material, physical, and embodied dimensions of gendered and caste-marked labour. The research contributes to discussions on technology, caste, and the labouring body, theorising dynamics of displacement, devaluation, and transformation in agrarian India. Finally, it situates agriculture's economic logic of efficiency, productivity, and profitability within the social and political logic of farming, skills, and knowledge, highlighting how tools and technology can become instruments of social control.

Keywords: Drone, Labour, Knowledge, Agriculture, Technology

The Aspects of Open Source Robotic Systems for Farming Applications: Democratisation of Food Production or Utopia?

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Precision agriculture is poised to revolutionise global food production. However, the high capital cost of proprietary robotic systems presents a significant barrier to entry, particularly for small-scale farmers and developing nations. This work examines the dichotomy between closed-source, commercial systems and the emerging ecosystem of open-source, "Do-It-Yourself" (DIY) agricultural robotics. We analyse the potential for these open platforms to catalyse the democratisation of technology in the farming sector. Using platforms such as the FarmBot as a case study, we highlight the key advantages of the open-source approach: substantially lower costs, greater customisation, and the ability to perform local repair and innovation, which are critical for sustainable implementation in resource-constrained environments. However, this analysis is balanced by a critical evaluation of the challenges inherent to such systems, including the higher technical proficiency required for assembly and maintenance, the lack of dedicated customer support, and reliability and scalability issues in demanding farm conditions. To contextualise the maturity of this field, we draw a comparative analogy to the successful open-source hardware model of Prusa 3D printers, which has effectively bridged the gap between DIY ethos and commercial-grade quality through robust documentation, a strong community, and a reliable supply chain. We conclude that while open-source farming robotics holds immense promise for increasing agricultural efficiency and sustainability globally, its future viability hinges on developing more robust ecosystems that prioritise user experience, reliability, and support, thereby translating potential into widespread, practical adoption.

Keywords: open platform, case study, system comparison, efficiency, agriculture

Working Group 3: Work Dynamics within and beyond the Farm Gate

Convenors: Priscila Duarte Malanski (INRAE, France), Sylvie Mugnier (Institut Agro Dijon, France)

Work-related issues on farms and within their socio-technical networks are prompting a rethink of farm development pathways such as diversification. This working group aims to better understand i) how farm work is reconfigured by the expansion into non-agricultural activities and their embeddedness in socio-technical networks, including the reliance on external labour and services; ii) how these diversified farms promote attractive workplaces for workers, iii) share lessons learned across farm work contexts to identify common bottlenecks, successful strategies, and emerging patterns; iv) develop a research agenda on work dynamics, diversification, and socio-technical networks in agriculture, fostering interdisciplinary dialogue. Another purpose is to facilitate networking based on knowledge sharing to encourage future collaborations.

What does research say about work in livestock farms providing on-farm services?

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Livestock farming faces multiple crises, including environmental externalities and societal concerns about animal welfare and the quality of life of farmworkers. In a context of a declining agricultural workforce, these crises raise concerns about the future of livestock farms, their social acceptability, and the renewal of farmworkers, highlighting the need for resilient systems that integrate quality of work and quality of life.

New farm models combine livestock with on-farm services (tourism, education, energy), representing 5% of EU farms. Diversification offers meaningful work, socio-economic security, and better societal acceptance, but requires reallocating labour, capital and land, raising issues of synergies, competition and labour allocation between activities.

Our aim is to better understand how livestock is combined with on-farm services and how work is organised among these activities.

A scoping review was conducted in three phases following PRISMA guidelines. First, 1079 articles indexed in Web of Science on farm diversification was identified. Second, titles, abstracts and keywords were manually screened. Off-topic articles were excluded. The remaining 631 articles were classified by type of diversification (agricultural, non-agricultural), location of activities (on or off-farm) and geographical area (Global South or Global North). Third, 32 English-language articles (1993–April 2025) combining livestock with service activities and work in countries of the Global North was selected for in-depth analysis.

Overall, livestock is not predominant in the studied forms of diversification. Agricultural diversity (crop diversity, mixed crop-livestock farm) and pluriactivity (off-farm employment, part-time farm) are most studied.

Livestock activity, service activity and work are not described or analysed in depth, irrespective of the data source (field surveys or databases) or the methods used (qualitative or quantitative). Analytical variables are typically limited to:

- Work: available labour (full-time or number of workers), type of farmworkers (family/non-family), and worker characteristics (age, gender, training).
- Livestock: species, herd size, farm size, productive and economic performance.
- Service activities: presence or absence, type of activity, economic performance.

The main results are typologies of farm diversification within a region or scenario modelling based on major events (CAP, Covid-19). They describe labour allocation between the livestock or the service activity by indicating the number of working days dedicated to each activity or the type of farmworker assigned to an activity. Interactions between livestock, service activities and work are not addressed nor the dynamics of these interactions over time.

Finally, integrating a deeper analysis of the interactions between livestock, service activities, and work into the research agenda on work organisation in livestock systems is important for identifying levers to enhance work–life balance of farmworkers.

Keywords: Work organisation, livestock, services, diversification

Combining services and livestock : evidence of farmers' activities diversification in Auvergne-Rhône-Alpes region, France

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Livestock farms in Europe face a multi-crisis driven pressures related to environmental impacts and animal welfare, while farmers contend with heavy workloads, low incomes, and limited recognition. Diversification of activities by combining livestock with services appears as a strategy to improve farm income, and enhance resilience. In the Auvergne-Rhône-Alpes region (AURA) in France, livestock production is predominant, yet agricultural income is among the lowest in France.

Our objective is to analyse the regional distribution of activity diversification in livestock farms providing service activities.

The study relies on data from the 2020 Agricultural Census (AC), accessed through a collaboration with the Regional Directorate for Food, Agriculture and Forestry (DRAAF AURA). The analytical process required a methodological shift in the structuring of data. AC data are traditionally organized according to the agricultural specialization (OTEX in French). This classification, however, is not suited to studying diversification, as it excludes service activities. To overcome this limitation, a data extraction approach was developed to identify farms that combine livestock production and service activities. We first selected all farms with at least one animal (cattle, sheep, goats, pigs, or poultry). These were then cross-referenced with farms reporting service activities, including renewable energy, agritourism, and contract work. Data extraction was performed at the level of the administrative unit encompassing multiple municipalities (EPCI in French) in order to respect the statistical confidentiality restrictions. Jenkins method was used to conduct spatial data processing.

Results indicate that 7,066 livestock farms also engage in service activities, representing 14.6% of all farms in the AURA region and 24.4% of the study sample. Considering that the region as a whole comprises 7,193 farms providing services, a strong relationship can be established between livestock and service activities at the regional scale.

However, significant sub-regional disparities are evident. The Auvergne area contains the largest absolute number of such farms, while the Rhône-Alpes area shows a higher relative proportion of activities diversification in livestock farms. These territorial contrasts reveal differing development pathways: (1) limited diversification in livestock-specialized areas such as Cantal, and (2) a strong diversification in livestock farms in territories with high diversification activities, such as Haute-Savoie.

A key limitation of this study is the inability to access detailed information on the specific types of service activities due to statistical confidentiality restrictions. However, our findings underline the importance of conducting further field research to analyze the drivers, and barriers of diversification in livestock systems, and its effects on livestock management and work organization.

Keywords: Activity, diversification, livestock, services, France

New diversification of livestock marketing methods: What adjustments for work organisation and technical management on farms?

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A growing number of farms diversifies the types of marketing of their products. For several years, in order to cope with market deregulation and climatic hazards, farmers have been implementing new ways of securing their income by selling some of their produce through short food supply chains. The various impacts of diversifying product marketing methods on labour and technical farm management are not sufficiently taken in consideration by farmers and advisers. This tends to compromise the maintenance and the management of this diversification. Indeed, the projection focuses more on the equipment and logistics involved in processing and/or marketing, and less on the reconfigurations that occur in terms of herd management, land use, and work organisation. Furthermore, production cycles in livestock farming take longer to establish or evolve than in crop farming. Marketing requires costly tools and skilled labour for processing and intermediary tasks (e.g. cutting, processing, stockage). Until now, little research has been conducted on these novel approaches to marketing diversification in livestock farming, mixing short and long food supply chains on farms. This is why a study was conducted in the Ain department of France, which has a wide variety of livestock production (i.e. cattle, pigs and poultry) and short and long food supply chains for meat, dairy products and cheese.

The aim is to understand the manner in which the diversification of marketing strategies for livestock products results in immediate, stable, and multidimensional reconfigurations at the whole farm level. Based on 14 surveys realized in livestock farmers combining short and long food supply chains, particular attention was paid to the evolution of this supply chains' combination over the last decade, and the changes in work practices, herd management, land use, and investment in equipment and buildings, which occurred more or less simultaneously. Their analysis shows that, along the last decade, 50% of the surveyed farms increased their volumes solely in short supply chains, 25% increased their volumes solely in long supply chains, and the remaining 25% increased their volumes in both. Changes in workforce size often accompany these diversification dynamics: six increases, three decreases and two that remain unchanged. Adjustments of the herd(s) or land size are less common (only 50% of farms). Beyond these adjustments, simplifying work in animal production is a frequent goal, leading to changes in practices that also aim to improve the autonomy and food security of livestock. This often involves changes in crop rotation, fodder management, and animal husbandry (reproduction and genetics). This clearly demonstrates the multidimensional impact of diversifying these farms' marketing methods. This is a key factor in supporting these farms and ensuring their viability.

Keywords: Livestock farming system, changing practices, diversification, marketing patterns, farm survey

Input Subsidies, Market Access, and Fertilizer Use in Indian Agriculture

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Chemical fertilizers are central to agricultural production systems in developing economies, yet their effectiveness depends critically on farmers' access to remunerative output markets. This paper studies how internal market access shapes fertilizer use and production practices across Indian districts in a context of heavily subsidized and spatially uniform input prices.

Using plot-level data from India's Cost of Cultivation Surveys, aggregated to a district–crop–year panel, I examine how distance to major seaports—a proxy for internal market access—relates to fertilizer intensity and input composition. The results show that districts farther from major markets use significantly less fertilizer per hectare, despite facing similar input prices. This pattern is not driven by higher input costs in remote areas, but by lower output prices and weaker expected returns from production.

Moreover, remote districts systematically tilt fertilizer use toward heavily subsidized nitrogen and away from more balanced nutrient application, indicating distortions in production practices rather than simple non-adoption. These findings highlight how internal market fragmentation shapes work and production decisions beyond the farm gate, limiting the effectiveness of input subsidies in improving productivity.

The results underscore the importance of complementary investments in market integration for sustaining productive and efficient agricultural systems, particularly in smallholder-dominated economies.

Keywords: input subsidy, fertilizer use, market access, production practices

Short Food Supply Chains beyond the farm: Organizing the processing and marketing of animal products in territorialized agri-food chains

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In metropolitan France, at least one in five livestock farmers sell part of their production through short food supply chains (SFSCs). While autonomy from conventional supply chains drives entry into these circuits, SFSC livestock farmers still rely on slaughterhouses and cutting facilities and often mutualize or delegate sales and processing tasks to reduce workload and limit investments. At the territorial scale, our research examines how livestock farmers and value-chain intermediaries divide processing and marketing work for SFSC products and organize joint work in two territories with contrasting environmental conditions and livestock dynamics (Puy-de-Dôme, Hérault). It draws on 68 interviews (SFSC farmers, intermediaries, and leaders of collective processing or sales projects), analyzed through a framework of territorial organization of labor at the interface of social geography and livestock farming systems science.

In the studied territories, farmers' integration into SFSCs multiplies their collaborations with intermediaries and fellow producers, thereby reshaping the division of labor within territorialized agri-food chains. In the processing sector, historical slaughterers and affineurs adjust their organization, while new actors emerge in meat cutting and processing to address SFSC farmers' evolving needs. These changes, however, are observed in supply chains where SFSC livestock farmers are numerous enough to influence power relations with intermediaries. In contrast, in the marketing sector, change is driven mainly by farmers themselves, who set up and manage individual or collective sales outlets. As a result, diverse socio-spatial organizational configurations coexist within the studied territories for the processing and marketing of SFSC products. Slaughtering, cutting, and meat-processing activities are more or less externalized and territorially anchored. In contrast, dairy processing is largely internalized, although highly territorialized PDO supply chains may provide technical support or handle ripening. At the scale of each sales outlet, diverse forms of cooperation between farmers, intermediaries, and other producers are established. The collective organization of these multiple workplaces strongly shapes on-farm work organization. This diversity of organizational configurations results in marked disparities in farmers' workloads, which can generate tensions. Across all configurations, stakeholders invest significant relational work to build collaborations and coordinate work schedules. These interactions foster mutual understanding among actors, and sustain tools vital for SFSC development, which remain fragile due to their dependence on stakeholder commitment amid limited public support. Farmers' growing governance role promotes their autonomy and reappropriation of these tools but increases their workload, raising questions about the long-term social sustainability of this territorial organization of labor.

Keywords: Short Food Supply Chains, Work in agriculture, Livestock farmers, Territory

How Short Food Supply Chains reshape livestock farmers' work organization over time

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In metropolitan France, at least one in five livestock farmers sell part of their production through Short Food Supply Chains (SFSCs) in highly diverse configurations. While these channels often revalue the meaning of farm work, they also increase its organizational complexity by adding new marketing and processing activities. Work organization in SFSCs thus proves highly dynamic and difficult to anticipate. Our research aims to characterize and explain the organizational transformations associated with the development of SFSCs in livestock farms over time, focusing on successive work equilibria and the compromises they embody.

Drawing on a framework grounded in a dynamic analysis of activity systems and work organization, at the interface between livestock farming systems science and social geography, we analyze the work trajectories of 27 livestock farms engaged in SFSCs. The sample represents a reasoned diversity in activity systems, scale, and degree of SFSC integration, across two territories with contrasting livestock dynamics (Puy-de-Dôme and Hérault).

These transformations are neither linear nor uniform. They unfold through sequences shaped by interactions between internal factors within the activity system (workforce composition, skills, equipment) and evolving territorial, market, and institutional contexts. Entry into SFSCs generally involves two main phases. During an exploratory phase, farmers test multiple marketing, processing, and production arrangements, facing strong learning demands and high organizational uncertainty. A stabilization phase follows, during which a relatively stable organizational setup is consolidated to manage workload and improve time efficiency. This often entails reducing the number of marketing outlets, increasing task specialization within the work collective, or, in some cases, hiring employees.

Over the longer term, SFSC engagement strategies may evolve in response to contextual changes. Four main forms of strategic reorientation are identified: decreasing SFSC volumes, increasing them, introducing complementary activities that reinforce SFSCs, or shifting the main marketing channels used. Each transition involves adjustments in work organization (changes in the workforce, practices, investments, and learning processes). These adjustments may increase organizational complexity but frequently contribute to improved work satisfaction. Successive organizational equilibria thus reflect specific compromises between profitability, workload, and satisfaction.

The combination of these sequences produces singular work trajectories, helping to explain why agricultural advisors often struggle to anticipate the evolution of SFSC-oriented farms. While tailored advisory support is therefore crucial, our comparative analysis provides analytical benchmarks to support farmers both during entry into SFSCs and over the longer term.

Keywords: Short Food Supply Chains, Work in Agriculture; Livestock Farmers

Reconfiguring work and labor within and between farm and off-farm activities

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Farmers and farms increasingly diversify into activities related to agricultural production or outside the farm. The opening up of the farming profession beyond agriculture reshapes ways of being a farmer and transforms skills, profiles, practices, and career paths. Pluriactivity refers to the combination of farming with another professional activity, either successively or simultaneously over the year. In 2021, one in five French farmers was pluriactive.

Pluriactivity involves a complex articulation of work between farming and off-farm activity, requiring constant trade-offs in working hours and their articulation. It also leads to changes in farm management. We examine how pluriactivity reconfigures both organizational arrangements between on-farm and off-farm activities and farm work through engagement in off-farm employment.

Pluriactivity is here considered through the concept of *système d'activité*, a systemic approach representing combinations of activities including farming. Based on 56 interviews with pluriactive farmers conducted in two French regions (*Nord-Pas de Calais* and *Languedoc-Roussillon*), we analyze reconfigurations of work between each activity and within farm management, particularly regarding labor.

Results show that labor is a key factor in the articulation of activities, making the organization of working hours a central issue. A global organization of work between both activities combines prioritization, anticipation and flexibility. Activity volumes are adjusted according to organizational constraints, but these ongoing adaptations generate workload and mental strain that frequently affect farmers' health.

Work organization strongly influence farm management, depending on availability and amount of labor that can be allocated to it. This can determine characteristics of agricultural activity such as farm size, production type, work performance, and technical practices. Organizational constraints can lead to a simplification of tasks related to production or to diversification activities where appropriate.

To overcome time and availability constraints, pluriactive farmers can hire agricultural workers (permanent, temporary or family members) or rely on external service providers. Specific tasks are delegated to varying degrees, with a clear distinction between operational tasks and management responsibilities retained by the farmer.

Both agricultural and non-agricultural skills and knowledge circulate between professional activities. Competences are more often transferred from off-farm employment to farm management, production tasks, diversification activities. Off-farm jobs related to agriculture also give a specific access to socio-technical networks.

To go further, the decompartmentalization of farming through pluriactivity fosters organizational and technical innovations learning by doing. This dynamic supports a greening of agricultural practices and enhances the entrepreneurial dimension of farming.

Keywords: Pluriactivity, work organization, organizational practices, farm management

Labor in mountain agriculture: developing niche markets between income generation, protection of natural resources and self-sufficiency

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Agriculture in mountain and hill areas in Europe is predominantly family farming in peripheral zones often on complicated terrains. Mountain farming does not necessarily mean small-scale farming, but generally encompasses various agricultural production sectors such as animal husbandry, grassland and pasture management, dairy production, forestry and vegetable growing. The economic foundations are divided into several activities and only a few household members are actual full-time farmers. Household members are involved in non-agricultural labor too, as tourism, communal services or others. While this works well in favorable areas, in remote zones of the Alps or the Italian Apennine the situation is unsustainable as non-farm activities do not provide enough income. Especially in such contexts, maintaining agriculture is essential for the household and for sustaining life in the community.

Our research seeks to support mountain farming through the exploration of technologies that support the development of possible niche markets. The future of mountain farming depends on whether its products are regionally anchored and sufficiently appreciated by the market along the value chain. Tapping into niche markets offers mountain farms an opportunity to diversify.

Despite its previous importance and cultural roots, cereal production on sloped mountain areas is currently a niche activity. A survey among South Tyrolian and Vallese mountain farmers reveals the actual production, motivation, investments and future perspectives regarding the cultivation of cereals. Cereals in mountain areas are an experimental activity with a medium- and long-term economic perspective. However, at present time, harvesting on sloping mountain land is hardly mechanized.

This paper discusses technological and mechanical solutions that are considered suitable by mountain farmers for harvesting cereals on their field plots. As there are no ready-made and affordable solutions available from machinery producers, farmers opt for retro-fit solutions of existing machinery. Data from a survey, interviews and subsequent consultations led to a participatory process to decide which technological paths should be taken to develop retro-fit harvesting solutions. Imminent labor processes were a decisive factor for selecting technologies and machinery. Cereal production in mountain areas is an example for how technologies can overcome barriers to farm diversification. Experiences gained from discussions with local producers on suitable harvesting technologies show how far local farmers are willing to commit to diversifying their activities, but also how small the margin for acceptable technical solutions is.

Keywords: mountain agriculture, technology adoption, retrofit, niche market, cereal production

Timing conflicts between agricultural work and downstream activities on farms involved in short supply chains

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The proposed paper reflects the content of an article to be published in the next issue of the French journal *Temporalités*, dedicated to “Time and rhythms of agricultural work” (final version accepted on December 10, 2025). Based on a survey conducted in the French department of Nord as part of the author’s sociology thesis, among agricultural producers marketing through short supply chains and diversification advisors, this publication examines the time constraints resulting from the delicate balance between activities related to primary production (cultivation, breeding) and those relating to processing, distribution logistics, or sale itself, as well as the human and material resources needed to cope with them. In short supply chains, agricultural work extends into “downstream activities” due to the limited presence of industrial and commercial intermediaries in these modes of exchange, and the relationships of dependency between these activities also vary according to the nature of the products sold and the forms of short supply chains practiced. The article begins by framing these issues from the perspective of professional agricultural organizations, which view them primarily as an increase in workload, underestimated by producers and detrimental to both economic viability and job satisfaction. The rest of the article seeks to understand these conflicts of time in a more dynamic and qualitative way, through concrete situations in market gardening and dairy farming. In particular, it shows how time management difficulties result not only from the accumulation of activities but also from their respective material frameworks, with production, processing, and sales activities taking place in distinct space-time contexts. Producers therefore face conflicts of availability that give rise to a feeling of dispersion or interference, which technical solutions and new forms of intermediation can only partially correct. Finally, we will show that these contradictions can be overcome by reorganizing agricultural rhythms and practices in line with commercial objectives, in a form of feedback. We will therefore defend the view that, contrary to a widely held belief in arguments and perceptions in favor of short supply chains, marketing is never simply the a posteriori “valorization” of agricultural work that preexists it autonomously. On the contrary, the social and technical configurations of commercial activity penetrate and partially determine the organization of agricultural work upstream, in a similar, although less asymmetrical, way to what is observed in long supply chains.

Keywords: agricultural work, short supply chains, diversification, marketing, processing

Networks for agroecological farm work: a relational-practice approach

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Both as a social and agricultural practice, agroecology has been defined as an alternative agricultural system to conventional agriculture (Fiore et al., 2024). Its practices are based on care, responsibility, and autonomy, aiming to build infrastructures for production, exchange, and governance beyond the neoliberal system (González De Molina & Lopez-Garcia, 2021; Giraldo & Rosset, 2022).

Research has focused on motivations, difficulties, and organization of agroecological settings (Samoggia et al., 2019; van der Ploeg, 2021). Work emerged as a key aspect of their social sustainability (Bottazzi, 2019; Dupé, 2025). Case studies of family farms or community supported agriculture have been crucial for understanding social sustainability, resilience, and livelihoods (Dumont & Baret, 2017; Volken & Bottazzi, 2024; Bainville, Aubron & Philippon, 2025). While these studies examine farm work, they often overlook the social processes underlying agroecological labour.

This research explores the social relations of (re)productive work in agroecological settings (van der Ploeg, 2021), aiming to understand daily work practices and experiences within and between farms. It applies social practice theory (Nicolini, 2012) adopting a processual and relational view of the farm (Darnhofer, 2020).

Emerging findings highlight how agroecological work builds sustainability through two key networks: autonomy and knowledge.

Networks for autonomy build resilient and economically sustainable systems outside conventional markets through informal and formal relationships among stakeholders that provide resources across the agricultural production process. For instance, common practice in producing one's own compost requires gathering manure from nearby farmers, without requiring access to markets. Networks for knowledge sustain continuous learning. Grounded in experimentation, informal education, and exchanges with other farmers, agricultural work is supported by ongoing learning, innovation, and the constant reformulation of practices. For instance, farmers' markets or seed exchanges create spaces for knowledge exchange.

Secondly, these networks sustaining productive and reproductive processes are constantly impacted by the availability of family or external labour and mechanisation. These aspects are crucial to sustain work, and impact their working conditions.

A practice-relational approach showed how work practices are formed in agroecological settings. These practices shape networks that sustain social relations of productive and reproductive agroecological work (van der Ploeg, 2021). Despite aiming for autonomy and knowledge, agroecology remains partly dependent on capitalist systems for employment and mechanization. Further analysis will explore how these networks affect working conditions and contribute to new forms of agricultural labor (Bottazzi, 2019).

Keywords: agroecology, work practices, autonomy, knowledge

Temporal Changes in Administrative Burden in Swiss Agriculture

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Background:

Switzerland's shift to a cross-compliance-based direct payment system has raised concerns about administrative burden on farms and its implications for farmer well-being. Reducing this burden is now an explicit policy objective under Swiss agricultural policy 2030+ (AP30+). This study contributes to this objective by investigating how administrative burden has developed between 2019 and 2025, identifying potential drivers for any change.

Data and methods:

We use a repeated cross-sectional design combining two (very similar) farm surveys from 2019 (paper-and-pencil) and 2025 (online), both linked to farm structural records. Perceived administrative burden is rated on a seven-point Likert scale ranging from one "not at all burdensome" to seven "very burdensome". Our primary specification is a linear model with an interaction between year and the share of administrative work in total workload, controlling for farm and farmer characteristics (land area, livestock units, farm type, zone, education, age, organic, off-farm work, direct payments). We complement this with Oaxaca–Blinder decompositions to separate changes that are due to observable characteristics from changes not captured in the regression variables.

Results and discussion:

Average perceived administrative burden increased by 0.21 Likert points on the seven-point scale from 2019 to 2025 ($p \approx 0.01$). A higher administrative share of total workload is positively associated with burden; a one-percentage point increase corresponds to about 0.03 Likert points higher perceived burden ($p \approx 0.001$). There is no indication that the perceived burden of the same share of administrative workload has changed. Total direct payments are robustly associated with higher burden, consistent with the idea that complexity and scope of program participation drive perceptions. Decomposition suggests that observable changes, including workload and farm structure, explain only a modest share (22%) of the increase while most of the rise remains unexplained. This might be due to shifts in the institutional or regulatory environment and other unobserved factors, such as heightened media visibility and psychological costs.

Conclusions:

Perceived administrative burden rose meaningfully between 2019 and 2025. While greater administrative workload explains part of this increase, stable effects per unit of administrative share and a sizable unexplained component point to system-level drivers beyond farm characteristics. Policy efforts under AP30+ should therefore combine task-level simplification (reducing administrative shares) with structural reforms that lower procedural complexity linked to program participation and payment scope.

Keywords: administrative burden, bureaucracy, agriculture, workload

Adaptation trajectories and work dynamics in dairy farming systems in medium-mountain areas

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Dairy farming systems are increasingly confronted with uncertainty, particularly in medium-mountain areas where production constraints, market volatility and regulatory requirements combine with growing expectations regarding environmental performance. In response, many farms engage in more agroecologically oriented pathways, while simultaneously facing persistent challenges related to labor and working conditions. Beyond production and income issues, agricultural work has become a central dimension shaping farmers' trajectories, yet its role in adaptation processes remains insufficiently documented. This study aims to analyze the interactions between adaptation processes in dairy farming systems, agricultural work—approached through key dimensions guiding the interviews (work organisation, substitutability, predictability, sense of work and quality of working life)—and diversification strategies, whether on-farm or off-farm, using work as the main analytical lens to understand farmers' responses to external pressures.

The research is based on qualitative research interviews conducted on 15 dairy farms located in medium-mountain areas of Auvergne (France), in autumn 2025. One interview was conducted per farm, using a guide designed to address the key dimensions of agricultural work mentioned above, while allowing farmers to freely express their experiences. The analysis follows a longitudinal and cross-case approach, starting from farm installation and tracing major changes over time, without imposing any a priori analytical categories.

Findings reveal considerable diversity of adaptation trajectories among farms facing similar pressures. Differences emerge in farmers' capacity to anticipate or react to change, in their combinations of simplification and diversification strategies, and in the sustainability of their working conditions. Technical simplification often contributes to reducing workload and increasing time predictability.

Diversification is frequently expressed as a desired objective rather than an implemented practice due to additional labor requirements and uncertain economic returns. When new activities are introduced without anticipating their implications for work organization, they tend to increase workload and reduce flexibility. Conversely, diversification associated with the arrival of an additional worker or changes in workforce organisation can enhance quality of life at work. By mobilizing work as a central analytical lens, this study proposes a two-dimensional analytical space positioning farms according to their capacity to anticipate change and the sustainability of their working conditions. This approach highlights contrasting trajectories, ranging from relatively stable configurations to precarious situations and, in some cases, effective exits from dairy farming. It provides insights for advisory services and public policies aiming to support dairy farming systems in mountain areas.

Keywords: dairy farming systems, agricultural work, adaptation trajectories, diversification strategies, medium-mountain areas

Work Dynamics and Diversification in Mediterranean Olive Farming Socio-Technical Networks (case study of olive farms in Sardinia and Provence).

FRANCA CORRIAS

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The Mediterranean olive sector today represents a privileged field for analysing contemporary transformations in agricultural labour and agro-food valorisation processes. This contribution is based on ethnographic research conducted between 2025 and 2026 in Sardinia and Provence. Through the case of two medium-sized olive farms located in the Alpilles (Provence) and the Montiferru region (Sardinia), it shows how labour and the economic value of olive oils emerge from a complex socio-technical system in which heterogeneous networks of actors, technical devices, classification practices, and material and immaterial infrastructures constantly interact (Callon 2002; Crawford 2021). The contribution highlights how two main axes of transformation are articulated within the contexts under study.

First, a process of hyper-sensorialisation is redefining the boundaries of olive oil production and tasting. Producers invest in sensory training, production certifications, and international competitions, building their reputation through the flavour profile of their oils. In this sense, roles, skills, and forms of labour organisation within olive farms are undergoing profound transformations. In Sardinia, sensory investment is oriented towards the production and promotion of highly fruity extra virgin olive oils recognised in international competitions, while in the Alpilles sensory valorisation is intertwined with the recognition of the organoleptic characteristics associated with the *huile mûrée* tradition.

Second, the contribution analyses the effects of digitalisation on olive production. Since the early 2000s, the sector has been progressively shaped by digitalisation processes affecting both production (mills and extraction machinery) and, above all, product valorisation through competitions, e-commerce platforms, and social media. The specificities characterising the two contexts, Sardinia and Provence, are now being redefined by a process that I propose to describe as the “digitalisation of taste.” This process becomes particularly visible in international competitions dedicated to extra virgin olive oils, where the sensory judgments of expert tasters are translated into rankings, scores, and awards that contribute to the commercial reputation of products and their visibility in the global market.

This contribution thus shows how, in contemporary Mediterranean olive farming, agricultural labour is being reconfigured through sensory skills, evaluation devices, and digital infrastructures. From this perspective, labour throughout the olive oil value chain increasingly incorporates immaterial processes of production and valorisation based on classification, visibility, and the symbolic construction of value.

Keywords: Olive farming; Work dynamics; Digitalisation; Sensory labour; Socio-technical networks; AI and agriculture

New generation farmers and farm diversification: rethinking gender relations. A case study in Quercy region, France.

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Literature focusing on the social aspects of diversification shows the close link between these activities and gender. For the past few decades, the development of these activities has given women farmers the opportunity to (re)engage in the agriculture after a long history of invisibility (Barthez, 2005). Research shows that women farmers have historically been more involved in these diversification activities related to on-farm services, processing, and direct sales of products (Annes and Wright, 2017).

However, women's involvement in diversification activities is a double-edged sword. If it allows them to find a place on farms, gain legitimacy, and ultimately contribute to their empowerment, it can also appear coercive, confining them to certain activities that are still perceived as secondary to primary production activities (Annes and Wright 2017). Indeed, Giraud and Rémy (2013) demonstrated that implementing diversification activities generates tension and a hierarchy among the various activities on farms. On one side there are the so-called "main" activities (production activities), perceived as more prestigious, mostly invested in by men, on the other side there are the so-called "secondary" activities (diversification activities), mostly invested in by women.

This differentiated valence attributed to agricultural activities rests on a certain conception of diversification: that is, as a set of complementary activities, "alongside" the main production activities. However, a new generation of farmers is emerging who approach diversification as an integral part of the agricultural systems they have established (Van der Ploeg, 2014). It is the case in the French context, where a growing proportion of new farms are being established by people from outside the agricultural sector (whose parents were not involved in farming), and who tend to embrace diversification when starting to farm (Dain et al., 2025).

In this communication we question to what extent this more holistic approach to diversification alter tensions and hierarchies of agricultural activities. More specifically, does it modify gender relations ? To answer this question, we rely on qualitative interviews conducted in South West France. We interviewed 15 women and 17 men who have started to farm for less than 10 years. These 32 respondents operate 23 farms (some respondents farm together). These farms have in common an involvement in agroecological practices, and the predominance of diversification activities. Our analysis show that rather than disappearing, gender inequalities are being reshaped. Male and female respondents generally overcome the dichotomy of production / diversification activities (they are both involved in diversification activities, and do not consider it as secondary). However, a gender division of labor persist. Data suggest that women tend to be relegated to the more invisible and less valued tasks within diversification activities

Keywords: Diversification activities, gender relations, gender division of labor, New generation farmers, France

Working Group 4: Mapping the Territory of Youth Careers in Agriculture and Food

Convenors: Catherine Waite (University of Melbourne, Australia), Ruth Nettle (University of Melbourne, Australia), Fiona Williams (Harper Adams University, United Kingdom), Conor Hogan (Teagasc, Ireland), Amy Cosby (Central Queensland University, Australia), Callum Eastwood (DairyNZ, New Zealand), Caroline Nye (University of Exeter, United Kingdom)

This working group explores pathways, junctures and experiences of youth careers in the agri-food sector. Youth attraction and retention is a crucial element in the discussion about supporting a sustainable agriculture workforce. It implies a need to map the territory of youth careers and experiences in the agri-food sector, considering various junctures shaping career decision-making throughout. The working groups thus aims to showcase recent scholarship and policy research with a view to soliciting academic dialogue, international collaboration and networking that focuses on 1) Empirical research of young people's engagement in agricultural work, training and careers, 2) Policy approaches shaping young people's work experiences in the sector, 3) Research building theory and policy.

How could smart farming technologies attract and retain young people in the agri-food sector in Australia?

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A global challenge for the agriculture and food industry is the shortage of young people. The Australian agricultural sector is no exception having experienced difficulties in attracting and retaining a young workforce. Increasing use of smart farming technologies (SFTs) is often suggested as an avenue to increase the attraction and retention of young people, through reshaping the nature of agricultural work and introducing new ways of production that are seen to be more interesting to young people. However, limited empirical studies have examined how SFTs could impact young people's future career choices in the agri-food sector. Therefore, this study aims to understand how young Australians (18-35 years) perceive and value SFTs, and how these perceptions shape their decisions in pursuing a career in the agri-food sector. This paper draws on mixed methods project combining survey and semi-structured interviews. A survey (n=384) and semi-structured interviews (n=64) was conducted to investigate young people's broader transitions into agricultural careers. This first set of findings informed a secondary phase of field work, comprising semi-structured interviews (13 have been completed with an expected sample of 30 participants) across Australia that explored young people's specific experiences with SFTs and the extent to which perceptions may impact their future career decisions. The initial findings suggest that young people's perception of SFTs are shaped by a combination of perceived benefits (e.g. flexibility and sustainability of work practices), cultural meanings (e.g. skilled and high-tech identity associated with operating SFTs) and perceived economic opportunities (e.g. reduced labour demand and shifting skill requirement). Importantly, gender emerges as a significant factor shaping how young people's perceptions of whether SFTs enhance the attractiveness of careers in the agri-food sector. This study provides an empirical foundation for understanding the extent to which smart farming technologies impact young people's perceptions of careers in the agri-food sector. The goal of this research is to establish a comprehensive framework explaining the relationship between SFTs and young people's career choices, and to identify the implications of these findings for improving attraction and retention in the agri-food sector for the next generation.

Keywords: Young people, agricultural careers, smart farming technologies, workforce attraction and retention.

Young people's pathways into agriculture jobs and careers: an expansive perspective to inform strategic interventions

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Addressing workforce attraction and retention challenges in agriculture has become a focus among researchers and policymakers and many research agendas have turned their focus to young people. There are a multitude of perspectives on young people in relation to the agriculture workforce, but the ways in which young people themselves articulate their experiences, motivations and choice-making process can help identify what is most important in their pathways into agriculture jobs and careers.

This paper investigates young people's narratives of their pathways into agriculture jobs and careers and reflects on how their experiences illuminate the dynamics of retention and attraction. The paper outlines a comprehensive perspective on career and employment journeys including motivations to enter the sector, the nature of their experiences while employed, and what prompts decisions to leave jobs.

The study draws on a mixed methods dataset. A total of 448 took part, including surveys with 384 and semi-structured interviews with 64 participants. Participants were young people aged 15-35 living in Victoria, Australia. Those who took part were students studying agriculture at secondary school, university or in vocational training, as well as those working in a range of agriculture industries, including cropping, dairy, and horticulture.

The findings highlight an intersecting ecology of intrinsic and extrinsic motivations and aspirations to enter, and work in, the Australian agriculture sector. Participants described various trade-offs based on their values, material priorities, and backgrounds both in relation to the industry, jobs and occupations as well as affordances of rural and regional communities in which agriculture jobs and careers are mostly based.

Youth workforce challenges in the agriculture sector are a persistent issue resisting single-faceted solutions or interventions. Adopting a comprehensive lens recognising the broad and evolving ecology of factors shaping young people's motivations and decision-making helps identify strategic touch points to direct effective interventions.

Keywords: Young people, attraction, retention, mixed methods, agriculture workforce

Agricultural interest, experience, and food system behaviors in two Indigenous Communities in the U.S.: Comparisons of three age groups 18-25; 26-35 and >35

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Supporting the next generation of indigenous farm and food businesses is important to advance the goal of food sovereignty. Tribal nations are pursuing this goal through home and community gardens, seed saving, hunting, fishing, gathering, the preparation and preservation of traditional foods, and educational programs (Babcock & Budowle, 2022). Some tribes are also developing larger-scale, tribally owned farm and food enterprises, as well as tribal food sovereignty coalitions and commerce (Jernigan et al., 2021). Younger tribe members play an important role in reaching these goals. This study examines difference in interests for several agricultural endeavors that match historical agricultural practices with modern demand in the Coeur d'Alene and Nez Perce Tribes located in the Pacific Northwest of the United States, emphasizing connections to food sovereignty. In 2024, data were collected through a community survey (n=495). The study included questions about small grain, including artisan grain, livestock, specialty mushrooms, diversified fruit and vegetable, and hemp production, processing, and business ownership. We utilize both descriptive and bi-variate methods to analyze the data. No generational differences were found with regard to tribal values. Most respondents identified food sovereignty as an essential consideration, and strong interest was reported in learning about traditional foods, agriculture, and food processing, as well as in owning or working in food-related enterprises. A large majority of respondents, regardless of age believe that conservation, inter-tribal trade, and bringing people together to learn tribal traditions are important. However, further investigation into the details associated with interests in agricultural enterprise revealed that while there is interest in pursuing agriculture and associated businesses, fewer younger respondents (<25) have strong interest in pursuing production, value added processing and owning specialty grain, livestock, hemp, and diversified farming compared to the middle age group (25-35). Results also indicate that younger people have the least interest in owning a food business, with more interested in upstream production and processing. Almost all cited farm and food business training as a need. Increasing awareness of opportunities, peaking interest and providing training are important routes to pursuing tribal food sovereignty for future generations while promoting economic opportunity and preserving cultural food heritage.

Babcock, A. and Budowle, R. (2022) "An appreciative inquiry and inventory of Indigenous food sovereignty initiatives within the western U.S.," *Journal of Agriculture, Food Systems, and Community Development*, 11(2), pp. 135–160.

Jernigan, V.B.B. et al. (2021) "Food Sovereignty Indicators for Indigenous Community Capacity Building and Health," *Frontiers in Sustainable Food Systems*, 5. Available at: <https://doi.org/10.3389/fsufs.2021.704750>.

Keywords: indigenous agriculture, community development, youth and agriculture, food sovereignty

‘Triple A’ - Awareness, Attractiveness and Access: Advancing Understanding of Young Peoples’ Relationships with Agricultural Work

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Attracting and retaining skilled people to the agriculture workforce remains one of the most pressing challenges faced by the farming industry in Europe. In recent decades, the agricultural workforce has continued to decline, with figures stubbornly conveying an ageing farming population. A focus on generational renewal in European agriculture has been a consistent priority in research and policy intervention, but approaches have tended to compartmentalise the issues and, as such, insufficiently capture the complexity of the situation from a youth careers vantage point. We argue that a new lens to the problems of generational renewal is required.

The central contribution of this paper lies in conceptualising agricultural careers engagement through three interdependent dimensions: awareness, attractiveness, and accessibility. We put forward the notion of Triple A agriculture to frame understandings of young peoples’ engagement with the sector at various junctures of their career journeys. Building on insights from sociology, youth studies, rural geography, and careers theory, the Triple A framework demonstrates that no single dimension is sufficient in isolation. Rather, sustainable generational renewal requires simultaneous attention to how agricultural careers are socially perceived, how visible they are to potential entrants, and how realistically they can be accessed and sustained over time.

The concept of Triple A agriculture seeks to inspire joined-up action to address crucial attractiveness factors collectively, rather than separately. We argue that the Attractiveness (what is desirable work in agriculture and to whom?) of farming as a career cannot be fully understood without the additional components of Awareness (how familiar is mainstream society with agriculture as a ‘good’ career route?) and Accessibility (how easy is it to enter and sustain agriculture as a career and for whom?). The Triple A components need to work together, in other words, it is not enough for agricultural work to be attractive to a person, if that individual cannot find ways to access land and employment. Equally, it is not adequate for agricultural work to be technically accessible, if an individual is unaware of it as a career pathway in the first place, perhaps because it has been represented as a low prestige career or negatively portrayed by media.

The Triple A agriculture framework offers a unifying analytical lens for researchers, policymakers, and practitioners, to enable more coherent strategies to address awareness-raising, access mechanisms, fair working conditions, job quality, and career progression, collectively rather than separately. As such, the paper contributes a transferable conceptual tool to inform future research, policy design, and intervention aimed at revitalising the agricultural workforce in Europe.

Keywords: Attractiveness, Awareness, Accessibility, Agricultural careers, Triple A

Careers and work aspirations of livestock farmers with a degree in higher education in France

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The French agricultural sector is facing a major generational renewal challenge, as only 70–75% of retiring farmers are foreseen to be replaced. With nearly 25% of farmers expected to retire by 2030, setting-up new farmers is crucial for the sector's sustainability, especially the livestock sector. Despite problems of attractiveness, individuals are still engaging in farming. Among them, some hold a Master's degree (or equivalent) or higher. Although it was neither the initial objective of their education nor necessarily, their primary professional goal, these highly qualified persons are starting farming. To our knowledge, there are no official statistics and little studies allowing to identify and characterize them. Therefore, this study aimed to explore the choices, motivations and trajectories of these individuals to establish themselves as farmers. To better understand these trajectories, the study focused on the i) resources they used, including skills, financial capital, support, and networks acquired through their education and professional experience; ii) their vision, satisfaction and aspirations regarding their work. A 98-item questionnaire was administered online using LimeSurvey. 44 respondents (21 women, 23 men) replied, mostly aged between 31–40 years, 45% farmed in a partnership, and 84% produced under a quality label, including organic. On average, respondents established their farms 8 years after graduation, typically following 7 years of prior work experience—most often in agriculture (84%). Despite 68% having family in farming, only 32% took over a family farm and 28% founded new ones. They reported that their education mainly provided them with skills in problem-solving, project management, and work planning, whereas prior work experience contributed to technical, administrative farm management skills. They mainly reported gaps in administrative, legal, and human resource management skills. The main challenges experienced to farm establishment were workload, administrative burden, and access to land. Respondents reported an overall satisfaction, but -less satisfaction related to working conditions and income, alongside a relatively high level of stress. These results shed light on a largely undocumented population who, despite strong educational and professional backgrounds, still need targeted support — particularly regarding working conditions and income. Furthermore, their dual background may offer a unique perspective on skill gaps and challenges — informing a broader understanding of support needs across the farming community, including mental workload and work organization. These findings have direct implications for policy and support services aiming to retain farmers.

Keywords: farming establishment, professional trajectories, work aspiration, highly qualified farmers

Generational Perspectives: Investigating the factors that influence the attractiveness of dairy farming

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Generational Renewal (GR) is a European and national policy priority across many European member states. GR aims to encourage new entrants and young farmers to become established in the agricultural sector, while supporting farmers who wish to take a step back or retire from farming. The overarching goal is empowering the next generation of farmers, facilitating future sustainability, food security and continued innovation in agriculture. The European Commission has placed attracting and sustaining young farmers as a key objective in facilitating sustainable agricultural development into the future. The aim of this project is to focus on developing a comprehensive overview of GR on Irish dairy farms, and how perceptions of attractiveness impact GR. To initiate the project, a literature review on the attractiveness of farming as a career will be investigated. The review will inform understanding on various elements that impact the perceptions of attractiveness of farming as a career. The literature review aims to map existing research, identify key concepts and inform the direction of future research questions for this PhD. Coopmans and colleagues (2020) suggest GR should be supported through five target areas. One of the key areas identified to support GR is increasing the overall attractiveness of farming as an occupation and a lifestyle. This target area of GR can be conceptualised into three stages: farmer/successor identity creation stage, the farm transfer stage and the farm development stage. The latter two stages occur after one's decision on whether to become a farmer or not. Focusing on the attractiveness of farming during the identity formation stage may promote entry to the sector through addressing largely perceived areas of unattractiveness that affect occupational choice and subsequently GR. As current figures highlight the ageing farming population in Europe with the average farmer now 57 years, coinciding with 12% of farmers in the EU being under the age of 40. The EU has set a target of increasing the representation of young farmers and new entrants from 12% to 24% by 2040. From an Irish perspective, the figures show that 4% of farmers are under 35 while 37% are over the age of 65 which has brought forward a commission on GR and the production of a suite of targeted recommendations to the Government (DAFM, 2025). It is on the premise that the decision to enter farming is made prior to the stages of farm transfer and farm development that this project aims to focus on through developing a greater understanding of its role in GR. As the review is ongoing, there are no preliminary results to be reported in this abstract. However, the findings from this literature review are to be completed prior to the convening of the ISWA 2026, enabling the presentation of findings on the elements impacting the perceptions of attractiveness to farming.

Keywords: Generational Renewal, Attractiveness, Career, Succession, Farmer Identity

Exploring Pathways and Roots: How Middle and High School Students Develop Agricultural Career Interests

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The agricultural workforce faces persistent shortages (Fernandez et al., 2020). Boosting career interest is one way for the agricultural industry to attract young people to future careers. Career interests are influenced by past experiences and support from family and friends (Fizer, 2013; Lent et al., 2000). Social Cognitive Career Theory (SCCT) guided the study, focusing on self-efficacy, outcome expectations, and contextual influences in the development of career interest (Lent et al., 2000). This research aimed to explore how a specific learning experience, as well as additional experiences, personal inputs, and background environmental influences, interact with self-efficacy expectations and outcome expectations to shape career interests, specifically in the field of agriculture. This study was guided by a central question: How do students become interested in agriculture careers? An additional sub-question was: What is the impact of an agricultural lesson on agricultural career interest? We used a basic qualitative design (Merriam & Tisdell, 2016) that included focus groups with students whose teachers had taught an agricultural lesson using [STEM Curriculum]. Three virtual focus groups were conducted with nine students after they completed a classroom agriculture lesson from [STEM Curriculum] in spring 2024. Transcripts were coded thematically. Three themes emerged regarding students' career interests in agriculture: *pathways to agriculture*, *how interests take root*, and *how students navigate career interests*. *Pathways to agriculture* for the students ranged from farms to agriculture clubs to home gardens to observations. *Career interests took root* through school coursework, family influences, hands-on experiences, and media, which either sparked or reinforced them, and they also evolved with experience. *Students navigated career interest* by weighing skills, especially in math and science, and preferences (e.g., salary, work environment, variety, etc.) when considering careers. In conclusion, students indicated that school, family, media, and prior agricultural experience influenced their career interests. These findings align with SCCT, showing that background and environmental factors shape career interest. Additionally, participants considered their strengths when discussing potential careers, reflecting the self-efficacy construct of SCCT (Lent et al., 2002). A one-time agriculture lesson did not measurably shift career interest when students already favored other fields, aligning with SCCT's view of interest development as a process over time (Lent et al., 2002). Further research should examine agricultural career interests, including the impact of several agricultural-focused lessons over an extended period and with additional participants, to clarify the factors shaping career interests among youth and strengthen the agriculture workforce.

Keywords: career interest; youth; agricultural workforce

Perceived Career-Related Supports and Barriers Among First-Year Students in University Agriculture Programs

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Recruiting individuals to the agricultural workforce is a global challenge (Mukembo et al., 2014; Unay-Gailhard & Brennen, 2022). In the U.S., an estimated 104,766 openings in food, agriculture, and natural resources (FANR) per year between 2025-2030 will require a post-secondary degree (Wilson et al., 2025). Therefore, strong support for students in FANR programs is essential to promote graduation and careers in industry. This study examined the supports and barriers of first-year students enrolled in the [College of Agriculture] at [University], using selection of an FANR major as a proxy for career choice.

Guided by Social Cognitive Theory (SCCT; Lent et al., 2002; 2003), we explored how supports, barriers, self-efficacy, educational goals, outcome expectations, and demographics relate to early career choice behavior. Supports include encouragement from family, peers, and university staff, financial support, and mentoring; barriers include limited support, low levels of belonging, and pressure to change majors.

We asked: To what extent do demographic and experiential characteristics predict perceived contextual supports and barriers among college of agriculture students? Demographics included race, gender, and place of upbringing; experiential characteristics included school attended, agriculture and natural resources courses taken, and agricultural organization involvement. Using a validated instrument (Lent et al., 2003), we surveyed first-semester undergraduates ($n = 219$) in fall 2024; 179 students completed the survey (81.74%). Most participants were women (67.2%), White (72.3%), and 18-20 years old (99%).

Two multiple regression analyses examined predictors of perceived support and barriers. The first regression model analyzed predictor variables on support, which was significant $F(7, 160) = 4.29$, $p < .001$, explaining 12.1% of variance (adjusted $R^2 = 0.12$). The second regression model analyzed predictor variables on barriers and was significant $F(7, 163) = 3.58$, $p = .001$, accounting for approximately 9.6% of variance (adjusted $R^2 = .10$). For both models, race was the only significant predictor; White students reported higher supports and non-White students reported higher barriers.

Findings indicate race is associated with whether a first-year undergraduate student at [University] perceives support or barriers related to FANR career choice. As SCCT underscores that support must be equitable and tailored to individuals (Johnson et al., 2018; Lent & Brown, 2019), these findings suggest a need for the implementation of equity-focused supports that foster belonging and reduce barriers for underrepresented students. Examples include proactive mentoring, targeted financial assistance, and facilitate early and sustained community-building.

Future research should include qualitative inquiry to illuminate students' lived experiences and longitudinal designs to track how supports and barriers evolve over time and influence FANR major persistence.

Keywords: Social Cognitive Career Theory, first-year university students, career development

Mapping free labor in young farmers' pathways

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Free labor has long been a constitutive resource of agricultural activity. In a context marked by the sharp decline in the agricultural workforce, the growing emphasis on agroecological transitions, and the political centrality of farm establishment, access to free labor plays a decisive role in the trajectories of newly established farmers. It raises critical questions regarding working conditions, inequalities of access to resources, and the sustainability of farm establishment pathways.

Far from being reducible to unpaid work, free labor refers to a heterogeneous set of work practices located in a gray zone between paid employment and non-market engagement. It combines voluntarism and constraint, social invisibility, underpayment, and diverse forms of compensation. These practices contribute directly to value creation while remaining largely absent from conventional definitions and measurements of work, thereby obscuring their role in shaping both economic viability and labor conditions.

This paper analyzes the factors that make the mobilization of free labor possible during the process of farm establishment, based on the hypothesis that spatial logics play a central role in this process. Drawing on semi-structured interviews with recently established farmers in the Conflent area (Pyrénées-Orientales, France), we examine seven case studies through a spatialized analysis of free labor. For each case, we map workplaces, contributors, and flows of free labor, distinguishing between types of tasks and forms of involvement. The analysis mobilizes the framework of proximities, activity systems, and a relational reading in terms of flows and scales, allowing us to grasp how free labor is produced, circulated, and reconfigured across spaces and over time.

The analysis highlights how configurations of free labor are built through the articulation of work spaces (housing, fields, farm buildings, points of sale), social relations (family, friendship, professional and associative networks), and temporalities linked to agricultural cycles and stages of establishment. We identify differentiated profiles of new entrants according to their social origins, geographical trajectories, and modes of establishment, revealing unequal capacities to mobilize free labor. Finally, we show that free labor is embedded in multiscalar dynamics that enable some farmers to combine diverse sources of support, while simultaneously exposing others to heightened vulnerability and self-exploitation. By foregrounding the spatial organization of free labor, the paper contributes to ongoing debates on decent work, inequalities, and the hidden foundations of agricultural labor.

Keywords: free labor, unpaid work, young farmers, spatial configurations

Engaging Female Students in Agricultural Technology Driven Careers in Agriculture and Food

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As agriculture continues to transition into a technology and digitally driven industry, it is essential to expose students to the diverse careers and pathways available within the sector. Agricultural technology (AgTech) represents a key digital innovation that is reshaping farming and food systems. Engaging future agricultural workers early, that is, our current students, and equipping them with digital literacy and AgTech awareness is critical to supporting this transformation. Women remain underrepresented in the agricultural workforce and the digitisation of agriculture presents an opportunity to address this imbalance. Research indicates that female perceptions of AgTech often differ from those of males, who are often less inclined to adopt new technologies. By building the skills and confidence of young women will help support greater AgTech adoption as they enter the workforce, contributing to a more innovative, inclusive, and resilient agricultural industry.

GrowHer: Advancing Young Female Founders through AgTech is a project designed to upskill young women across regional Queensland in Australia, enabling them to consider careers in AgTech through exposure to mentors and the broader innovation ecosystem. The project examines changes in the knowledge and perceptions of female secondary school students following exposure to AgTech and industry professionals through one-day workshops delivered annually across three locations. These workshops included engagement with regionally relevant AgTech, partnerships with industry professionals, and facilitated small-group challenges that required students to ideate technological solutions to real-world problems faced by the agricultural industry. Pre- and post-event data was collected from female students in years 7-12 who attended one-day workshops. Participation in the GrowHer workshops resulted in positive student engagement, and higher understanding and awareness of key AgTech concepts, and more positive perceptions of agriculture as a modern, technology-driven industry. Specifically, student's understanding of the range of careers available in the agriculture industry increased from 64 to 81% following the workshop. And 90% of students reported an interest in a career that utilised AgTech after the workshop. These outcomes highlight the need for more deliberate and structured initiatives to expose young women to the breadth of careers and pathways that utilise AgTech. Meaningful opportunities to engage with AgTech tools and professionals can further strengthen the agricultural workforce pipeline, support greater industry diversity, and improve long-term sector sustainability and innovation.

GrowHer is proudly supported by the Queensland Government.

Keywords: AgTech, school, education, mentorship, female students

From Campus to Career: what university agriculture students look for in job ads

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In a competitive job market, agricultural businesses are seeking highly skilled graduates competing with many other industries. Equally important to understanding graduate job choices is knowing how they evaluate potential opportunities through job advertisements. Students seeking their first job often have specific expectations, and the way positions are advertised can significantly influence whether talented candidates even consider applying. This study utilised focus groups with Australian agricultural students in both regional and metropolitan areas to consider: How do young people (18-25) engage with job advertisements to make decisions about their agricultural careers? We conducted focus groups at seven universities offering agriculture-related degrees and at the 2024 Cotton Conference, inviting young people (between 18 and 25 years of age) to participate (n=93). To capture the nuances involved in students' engagement with job advertisements, the focus groups collected a variety of data through a series of activities and interactions. These activities included social media post and 'Seek' job advertisement critique and discussion. Students provided oral and written feedback indicating likes and dislikes in each advertisement and provided recommendations for improvement. Their critiques were then shared in a group discussion. To analyse the data, we used Reflexive Thematic Analysis (RTA) within a realist epistemology to identify patterned, shared meanings across the verbal and written dataset. Our analysis was primarily semantic, focusing on participants' explicit meanings. We found students use a seven-question decision framework assessing eye-catching design, role clarity, salary transparency, cultural signals, and trusted sources. Facebook agriculture groups emerged as primary job search platforms, with personal connections valued over traditional channels like LinkedIn. Students prioritised authentic organisational culture information over polished marketing from recruitment agencies. These findings suggest agricultural employers could benefit from reconsidering their recruitment strategies. The traditional approach of posting detailed job advertisements on mainstream platforms and expecting qualified candidates to apply may be insufficient. Success requires building genuine relationships within agricultural education communities and demonstrating organisational values through authentic storytelling rather than polished marketing. The disconnect between where employers typically advertise (Seek, LinkedIn) and where students primarily search (Facebook groups, personal networks) represents a significant opportunity cost for agricultural organisations struggling to attract graduate talent. Employers who can navigate this landscape - by building trust within student networks and providing the authentic, detailed information graduates seek - will have a competitive advantage in graduate recruitment.

Keywords: university graduates, focus groups, job ads

Why Is It Hard to Hire and Retain Agricultural Workers? Insights from Farmers and Agribusiness Owners

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Introduction. Labor and skills shortages continue to challenge the agri-food sector due to an aging workforce, declining youth participation, and increased competition with non-agricultural industries, particularly affecting small- and mid-sized U.S. agricultural operations with limited financial and human resource capacity (Malanski et al., 2021; Ryan, 2023). Despite these pressures, empirical research examining hiring and retention from the perspectives of farm and agribusiness employers remains limited (Black & Arruda, 2021). Identifying employer-defined workforce barriers is therefore essential for informing Extension programming, workforce development initiatives, and policy responses that strengthen agricultural labor systems.

Purpose and Research Objective. The purpose of this needs assessment study was to examine the perspectives of farm and agribusiness owners and managers on hiring and retention challenges in the agricultural sector. Specifically, the study sought to identify key barriers to workforce stability and describe employer perceptions of challenges encountered in recruiting and retaining agricultural employees.

Method. This study used a convergent mixed-methods needs assessment design with data collected through an online survey of Pennsylvania farm and agribusiness owners and supervisors distributed via University Extension and agricultural organizations' listservs. Of 210 respondents, 110 surveys were retained for quantitative analysis, and 52 open-ended responses were analyzed qualitatively using applied thematic analysis supported by NVivo; the Institutional Review Board approved the study.

Findings. Most respondents (63.3%) were directly involved in hiring and relied primarily on informal recruitment methods, especially word of mouth, with limited use of formal workforce systems. Key hiring challenges included difficulty finding qualified and local applicants and high labor costs, while retention strategies most often focused on creating positive work environments and offering competitive wages. Respondents strongly preferred practical training approaches, particularly on-the-job training, and qualitative analysis revealed six interconnected themes influencing hiring and retention, including labor supply constraints, economic viability, job demands, workforce readiness, workplace culture, and structural and regulatory barriers.

Conclusion and Recommendations. Findings show that agricultural hiring and retention challenges stem from overlapping economic, structural, cultural, and regulatory factors. Although farms have limited control over labor markets, employer practices, workforce development, Extension education, and supportive policies can improve workforce stability. Future research should include employee perspectives, use more diverse samples, and examine how management and Extension interventions affect retention and productivity over time.

Keywords: Agricultural workforce, Hiring and retention, Farmers, Agribusiness owners and managers

Sustainable Employability: A Capability Framework for Digital Agri-Food Youth Careers

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Young people entering agri-food labour markets face deep uncertainty: 65% of future job types do not yet exist, task contents shift toward cognitive/digital/green skills, and sustainability/equity goals (SDGs) reframe "good work." Against this backdrop, the contribution argues that employability must be rethought as sustainable employability, grounded in a humanistic, capability-oriented understanding of education linked to the SDGs, especially SDG4 Quality education. This contribution, therefore, asks how education can cultivate sustainable employability for agri-food youth careers. Objectives are to: 1) map key drivers of career uncertainty; 2) develop a capability-based framework for lifelong employability; 3) propose policy redesigns aligning education with emerging agri-food roles. Conceptually, the contribution synthesises international evidence (EU skills and employment projections, ILO and OECD reports, World Economic Forum and McKinsey analyses) to map key drivers shaping youth employment prospects: economic and employment trends, technological change and automation, environmental limits and green transitions, and widening inequalities and digital divides. It then develops a sustainable employability framework around next generations' evolving capabilities. Methodologically, this contribution combines secondary indicator-based data (e.g. skills–GDP, skills–poverty, task change and job openings) and conceptual work on capabilities and transformative learning. The findings highlight that: 1) higher skills correlate with income gains/lower poverty but larger ecological footprints, misaligning training for sustainable agri-food futures; 2) Digitalisation/greening transforms agri-food jobs/tasks—increasing cognitive/social-emotional/technological skill demand, reducing physical/routine work; 3) Education must cultivate capabilities for youth's non-linear career navigation and lifelong employability. For youth careers in agriculture and food, this implies re-designing educational pathways (from vocational programmes to university curricula and lifelong learning offers) as transformative, capability-oriented environments that integrate experiential learning, digital literacy, sustainability competences and attention to resilience and well-being. Before concluding, priority areas for future empirical research are proposed.

Keywords: Job placement, lifelong job resilience, SDG, transformative education, education–labour market alignment

Entering, staying, leaving: professional trajectories in agriculture

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This presentation is situated within a context of rapid and enduring decline in European agriculture, marked by a continuous decrease in the number of farms and farmers, whose socio-economic and territorial implications are now well documented (Schuh et al., 2022). In this context, attracting and retaining people entering agricultural occupations has become a central challenge for the sustainability of agri-food systems, particularly as entry pathways have become increasingly heterogeneous, often occurring later in life and shaped by career changes and discontinuous professional trajectories. The presentation draws on a long-term ethnographic study (2015–2024) conducted within an agroecological cooperative market gardening farm in Wallonia, complemented by observations in other market gardening farms. It analyses the trajectories of *nimaculteurs* (new entrants to farming)—farmers not originating from farming backgrounds—with diverse social and educational profiles, who entered the profession around 30 years. The findings highlight a plurality of pathways, combining successful farm entry, collective experimentation and strong commitment, but also exits from the profession and significant turnover. In 2019, the cooperative included six farmers; five years later, only one remains active there. At first glance, the observed departures appear to be primarily explained by personal life events such as burnout, relationship breakdowns, relocation or broader life reorientations. However, the analysis shows that these individual turning points are embedded in a wider structural context in which economic and financial conditions play a decisive role. Low incomes, work intensity, the mental load associated with collective management, and tensions between agroecological ideals and economic viability weaken professional trajectories and make certain forms of engagement difficult to sustain over time. Exits from farming thus appear less as isolated individual choices than as the outcome of structural constraints weighing on agricultural careers. Finally, the presentation offers a comparative perspective based on the first results of the AGRICONVERT project, which focuses on farmers from agricultural families who have taken over the family farm. Comparing these trajectories with those of *nimaculteurs* reveals both shared challenges—such as economic pressure and heavy workloads—and important structural differences, particularly regarding access to land, capital and professional recognition, as well as differentiated margins of manoeuvre in career pathways and in the techniques adopted, notably with respect to the ecologisation of farming practices. This comparison invites reflection on the future and sustainability of European agriculture through the examination of agricultural careers that are fragile, heterogeneous and socially situated.

Keywords: Agricultural career trajectories, New entrants to farming, ecologisation, European agriculture, youth farmer retention and exit

Using choice modelling to understand factors influencing retention of youth in New Zealand dairy farming workplaces

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There is high turnover of young employees in agricultural workplaces driven by a range of factors such as workload, long hours, employment environment and social isolation. Retention of this young workforce therefore represents a significant opportunity for the agricultural sector. To better understand the relative importance of different workplace attributes for current dairy farm employees, a choice modelling study was conducted with early career dairy farmers in New Zealand (NZ). The research questions were: What job attributes are most important to employees deciding whether to stay in their current role? How much are differences between job attributes worth to employees in terms of their impact on retention?

Choice modelling was used, with 11 attributes including: ability to take time off, shift/rosters, task variety, training, equipment, infrastructure, daily hours, workmate relationships, manager relationships, decision-making involvement and job security. Demographic information was captured including sector, career length, age, number of workplaces, current salary, and current weekly hours worked. The survey was circulated via an online surveying tool, and the link distributed via dairy sector networks and targeted social media advertisement.

Initial results (final results will be presented at the conference) indicated that respondents exhibited relatively inelastic preferences for increasing hours worked above their current hours worked. To work 5hrs more per week employees expected NZ\$13,000 per year more, but would take a pay cut of NZ\$12,000 to work 5hr less per week. Major reasons for people to stay in their current role included the ability to take time off, job security, manager relationship. Few of the attributes were strongly identified as reasons to leave, but manager relationship and work rosters were most influential. Overall, manager relationship and job security were most strongly related to retention.

The analysis also included a trade-off between each of the attributes and remuneration. This highlighted that there was a small difference between remuneration expectations between good versus bad equipment quality, manager relationship, and colleague relationships. Conversely, there was a large difference in remuneration expectations between workplaces with good versus bad daily hours and rosters.

The conclusions from this study are that rosters and consistent working schedules were important for retaining young people on farm, and farms that ranked poorly on these attributes would need to compensate with high remuneration. Manager relationship and job security were the primary drivers for people to stay in their dairy workplace, but the small difference in expected remuneration between good and bad workplaces for these attributes suggest that employees saw these attributes as inalienable in a workplace.

Keywords: retention, work attractiveness, early career, manager relationship, rosters

Working Group 5: Seeds of Succession

Convenors: Adriana Borsellino (Rural Youth Europe)

This working group aims to create an interactive space for sharing and reflecting on the experiences of young family members working on farms and engaging in succession processes. It provides a space for reflection on how farm succession unfolds in practice, what enables or hinders youth involvement, and how this process can be better supported. Bringing together diverse perspectives, the working group will examine both shared patterns and contextual differences, with attention to the roles young family members play on the farm. By fostering open dialogue and exchange, the workshop seeks to generate new perspectives, build connections, and collectively explore pathways to better support and empower the next generation of farmers in sustaining family farms and revitalising rural communities.

An Exploration of the Relationship Between Farm Succession, Stress, and Support Systems on Irish Dairy Farms

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Concerns have been raised about the long-term future of the farming sector, due to an ageing farmer population, a lack of available successors and the lack of formal succession planning on many farms. Farm succession is often a complex and sensitive issue, influenced by family dynamics, financial considerations, and uncertainty about the future. As a result, there are numerous barriers that can prevent farmers from developing/engaging in succession planning, many of which stem from stress, worry, or discomfort surrounding the topic. The objective of this study was to explore farm succession, with a particular focus on how succession may act as a source of stress for Irish farmers. 13 semi-structured interviews were conducted for data collection, providing participants with the opportunity to discuss their views openly while still allowing the researcher to explore key themes relevant to the objectives. This approach was chosen to enable a deep and nuanced understanding of farmers' personal experiences and attitudes towards succession. This sample size was deemed sufficient to achieve data saturation, as no new themes emerged in the later interviews. Participants were purposively selected based on defined criteria: 50+ years old, currently/previously involved in dairy farming, and actively involved in the succession process or likely to be involved in succession planning in the future. All participants were in North Tipperary in the Republic of Ireland, providing a geographically focused insight into succession experiences.

The findings of the study indicated, contrary to some previous research, farm succession was not perceived as a major source of stress. Several factors emerged that helped to explain the relatively low levels of stress. Open, honest, and timely communication emerged as a central theme, with participants highlighting the value in discussing succession early and maintaining clear communication within the family. Access to professional advice and support services was also viewed as important in reducing uncertainty and providing reassurance around legal, financial, and personal aspects of succession. Perceptions of farming also played an important role, especially views relating to lifestyle demands and the alternative career opportunities available to younger generations.

Overall, the study demonstrated the critical role of communication in reducing stress associated with farm succession. Open and ongoing discussions, both formal and informal, were seen as essential in managing expectations and avoiding conflict. The findings highlight the importance of farm attractiveness in shaping successor interest and identity, which in turn influences stress levels for the incumbent generation. Together, these findings emphasise the need for integrated advisory and support frameworks, that incorporate broader workplace research (e.g., farm attractiveness, workload management, etc), to facilitate farm succession.

Keywords: Farm Succession, Stress, Support Systems, Attractiveness

The role of emotions during farm intergenerational transfer

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Farm transfer is a complex process involving the handover of a farm from a transferor to a transferee.

Neoclassical economists see this process as a contractual relationship with information as a key concept. Due to the ongoing lack of attractiveness of the profession, sellers are increasingly turning to candidates outside the family (Gillet, 1999). As a result, stakeholders need to fill in the missing information regarding each other, to guarantee their ability to work, their level of trust, goodwill, etc. To reduce the risk embodied by this asymmetry of information (Akerlof, 1970), the theory of contracts (Williamson, 1985) offers solutions such as incentives. However, rural studies show that farmers' considerations go beyond merchant interests – rather to soil attachment, home-shifting or self-achievement. Therefore, in the case of France, stakeholders may be willing to seek support in institutional organisations or in associations. These advisory bodies will then have to consider situated rationalities, according to institutionalists, based on the concept of *Futurity* (Commons, 1934). From this point of view, individuals make their decision based on their social environment and past experiences, and given to their own expectations. Still, if formalizing beliefs and ethical values allows a better understanding of the farm transfer dynamics, negative emotions can arise from the gap between stakeholders' projects. Hochschild's sociology of emotions (2003) can thus shed a new light upon the whole farm transfer process.

In this communication rooted in the pragmatist tradition of institutional economics, we study the role of emotions embedding farmers' decision-making. The methodology relies on semi-structured interviews regarding transfers within and outside the family. It aims to verify whether transfers within the family are facilitated due to shared values and more positive emotions than transfers outside the family. An innovative art-based research protocol will be designed as an artefact to elicit emotions involved. Moreover, pairs of farmers will be interviewed in southwestern France around the area of Toulouse and in the province of Quebec, Canada. The idea is to establish a comparative study about the role of emotions in different institutional systems that are nevertheless sufficiently similar in terms of development to allow for comparison. Based on our theoretical framework, our working hypothesis are the following:

- Bad alignment of values between transferors and transferees can lead to negative emotions and hinder the transfer process.
- Current support focuses on technical and economic aspects. Psychosocial support that takes better account of the stakeholders' emotions could facilitate the process.
- Individuals' values are related to their attachment to the territory. A shared vision of the farmers' professional identity in the territory is a lever for improving coordination and justice between stakeholders during the process.

Keywords: emotions, values and beliefs, farm transfer, farm start, decision making

Working Group 6: Enhancing the Attractiveness of Work in the Agri-Food Sector

Convenors: Meena Pandey (University of California, Davis, USA), Nathalie Hostiou (INRAE, France), Marion Beecher (SETU, Ireland)

This working group focuses on strengthening workers' rights and socio-economic security, such as fair pay, access to benefits, and retirement systems in the Global North contexts, and expanding basic protections for informal and seasonal workers in Global South. It aims to foster dialogue among researchers, policymakers, and practitioners on transforming agricultural work into a more attractive and sustainable career choice. The group will generate comparative insights and highlight innovative practices by bringing together perspectives from the countries of Global North and South and other comparable contexts. It will also identify systemic barriers and co-develop policy and practice recommendations. The group further aims to stimulate future collaboration to better understand how to attract and retain agricultural workers across regions.

Defining the concept of job quality in the agricultural sector: evidence from Australia

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The global agricultural sector is facing widespread labour and skills shortages. A growing number of countries report that attracting and retaining agricultural workers has become a major challenge. Agricultural jobs are often perceived as "bad jobs", and in many situations workers are reluctant to enter the agricultural sector or choose to leave after a short period of employment. To retain and attract these workforces, as well as improve their well-being and performance, we need to figure out what constitutes a "good job" for agricultural workers. Therefore, we are conducting research to introduce the concept of job quality into the agricultural field. Job quality is an interdisciplinary, multidimensional concept encompassing various aspects of a job, and there is currently no universally accepted definition. To answer the question of what constitutes a "good job" in agricultural sector, this study explores and defines the concept of job quality applicable to the agricultural sector from the perspective of farm workers.

To date, the study has conducted semi-structured interviews with 33 workers from farms of varying sizes across Australia in the cotton, horticulture. This choice of sectors provides a diversity of job types and work contexts. The participants comprised farm employees in various roles, job types, and backgrounds (both local and immigrant). Early findings indicate that the factors influencing the agricultural workforce's evaluation of job quality differ significantly from existing definitions of job quality in the literature. For example, many respondents mentioned the remoteness of the workplace location and the adequacy of surrounding infrastructure, as well as the farm lifestyle, their personal interests, and the availability of recreational activities.

This study seeks ultimately to establish an empirically grounded theorisation and conceptualisation of job quality applicable to the agricultural sector, which will be able to be used for conducting job quality evaluations at the job, enterprise or industry scale, and in support of efforts to address attraction and retention challenges.

Keywords: job quality

Climate Change as a Driver of Working Conditions and Farming Attractiveness

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Climate change is reshaping agricultural work across Europe by intensifying heat exposure, weather volatility, and income insecurity, with clear consequences for job quality and the attractiveness of farming. Extreme heat and shifting seasons alter work organisation and increase occupational risks (Pogačar 2019; Morris et al. 2021), while climate-related financial losses heighten psychosocial stress and undermine wellbeing and labour retention (Lund et al. 2018; Becot et al. 2023). These pressures disproportionately affect self-employed farmers, young entrants, and seasonal or migrant workers, discouraging generational renewal (Rose et al. 2023; Shortall & Barillà 2024). Although climate impacts vary regionally, common structural challenges—economic precarity, health risks, and fragmented policy responses—are shared across European farming systems.

Rationale and objectives: Building on SafeHabitat Deliverable 4.4, this study examines climate change as a “multiplier of vulnerability” across working conditions, mental health, and social protection, and how this shapes the perceived attractiveness of agricultural work. The objective was to identify priority challenges, policy gaps, and concrete responses with relevance across EU Member States while remaining adaptable to national contexts.

Methods: A two-day multi-actor social policy hackathon in Brussels brought together farmers, farm workers, young farmer representatives, trade unions, policymakers, researchers, and occupational safety and health (OSH) experts. Participants used structured challenge identification, thematic clustering, voting, and roadmap-based group work to analyse key problems, governance gaps, interventions, and success indicators. Findings were synthesised from discussion notes, transcripts, and supporting literature.

Findings: Participants highlighted weak integration between climate adaptation, OSH, and social protection; limited recognition of farming’s societal contribution; and inflexible income supports that fail to buffer climate shocks. Climate pressures intensify financial insecurity, mental health strain, and occupational risks, reducing sector attractiveness, particularly for young people and smallholders. While innovation can support adaptation (Ma & Rahut 2024; Parra-López et al. 2024), stakeholders consistently emphasised EU-relevant measures to improve job quality and labour retention: fairer value chains, flexible CAP payment timing after extreme events, accessible crop-loss insurance, embedded mental-health support, and clear OSH standards for heat and extreme weather.

Implications: Integrated European policy frameworks linking climate adaptation with occupational safety, mental health, and social protection are essential to enhance job quality, strengthen labour retention, and support generational renewal across European agriculture.

This research was undertaken as part of the SafeHabitat Project – Ref: 101084270.

Keywords: Working conditions, farming attractiveness, climate change

Collaborative farming as a pathway to attract the next generation of farmers

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Generational renewal is a growing challenge across agricultural systems internationally. In Ireland, the average farmer age is 59, with only 4.3% of farmers aged <35, and almost half of farm families do not have an identified successor. Limited access to land, high capital requirements and increasing business complexity restrict opportunities for younger entrants. In this context, collaborative farming models are increasingly recognised as an effective mechanism to support younger farmers to establish viable farming careers, while maintaining continuity on existing farms and offering a step-back mechanism for experienced farmers. This paper draws on practice-based experiential evidence from two practitioners working directly with farmers and stakeholders involved in collaborative farming arrangements in Ireland. Together, the authors have supported the establishment, development and review of collaborative models, including Registered Farm Partnerships, share farming agreements and land leasing arrangements. The methodology is grounded in reflective analysis of real-world cases, identifying recurring challenges and success factors. Insights are synthesised to identify common patterns in participant experiences and the conditions under which collaborative farming functions most effectively. While these models are increasingly recognised as effective mechanisms to address generational renewal challenges, uptake remains below potential. From the perspective of young farmers, key barriers include limited awareness of available options, difficulties accessing land and finance, and uncertainty around long-term security and career progression, contributing to disengagement or the pursuit of alternative careers outside agriculture. For experienced farmers, barriers more commonly relate to concerns around loss of control, trust, legal complexity and the perceived risk of altering long-established sole-trader business structures. Within collaborations, misaligned expectations, inadequate communication and insufficient advisory support can undermine otherwise viable arrangements. The ability of sectoral stakeholders to connect like-minded individuals and support prospective collaborations also emerges as a constraint. Across all models, farm profitability and labour capacity are key enabling factors, underpinning the ability of the business to sustain multiple livelihoods and support equity growth for the young farmer. Consequently, young farmers must focus on developing the skills required to manage the farm business, particularly financial management skills. Our experiences highlight a need for research and policy to support collaborative farming as a core entry and progression mechanism for young farmers, with clear progression pathways and improved support to access land and finance. Strengthening these frameworks will be central to sustaining farming as a viable career for future generations.

Keywords: Collaborative Farming, Succession, Generational Renewal, Farm Business Structures

From Undocumented Labor to Guest Work? H-2A Visas, Legal Status, and Agricultural Work in the United States

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This paper examines efforts within Idaho's dairy industry to transition from reliance on undocumented farm labor—primarily from Mexico—to either legal status for workers or joining the H-2A temporary agricultural guest worker program. The H-2A program has expanded rapidly in the United States, now bringing more than 350,000 guest workers annually, the majority young men from Mexico. For many policymakers and agricultural employers, H-2A is promoted as a “solution” to the perceived “problem” of undocumented farm labor. However, our prior research documents the significant logistical, financial, and socio-emotional challenges faced by H-2A workers, including debt bondage, substandard housing, food insecurity, social isolation, and strict regulation of non-work leisure time. Workers also live with the persistent threat of non-renewal, as future employment depends on individual workers being deemed sufficiently “good” by employers.

Idaho is home to the fourth-largest dairy industry in the United States, with approximately 90 percent of its workforce foreign-born. Dairy operations are currently excluded from the H-2A program because their year-round labor needs fall outside the program's seasonal framework. Consequently, Idaho dairies rely heavily on undocumented labor. In response, some producers have urged federal policymakers to expand H-2A eligibility to include year-round agricultural work, while others advocate for providing legal status and work authorization to their existing workforce and their families. Although these debates have circulated for years, they have intensified in 2025 amid heightened deportation efforts and growing concerns among agricultural employers about workforce stability.

Drawing on a discourse analysis of local and national media, this paper examines how Idaho's dairy industry positions itself within these debates. We analyze how producers and industry advocates alternately frame expanded access to H-2A visas and pathways to legal status as necessary to sustain dairy production. By tracing the language used in these discussions, we illuminate the rhetorical strategies through which Idaho dairies seek to shape labor policy and secure their workforce under conditions of heightened immigration enforcement.

Keywords: H-2A Visas, Dairy Industry, Immigration Status

Identifying benchmarks for attractive and productive workplaces on pasture-based dairy farms in Ireland

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Dairy farms have undergone significant socio-economic changes in recent decades, with increased herd sizes, a declining workforce, and an ageing farmer demographic. These structural shifts have intensified social sustainability challenges, including workload and seasonality pressures, impacts on mental and physical wellbeing, health and safety risks, and difficulties attracting and retaining skilled labour. Addressing these challenges requires improved understanding of indicators and benchmarks that define an attractive and productive farm workplace, allowing farmers, advisors, and policymakers to identify improvement areas and set realistic targets. This study aimed to identify and co-design practical indicators and benchmarks for attractive and productive dairy farm workplaces using participatory approaches. Purposive sampling was used to conduct three participatory co-design workshops with dairy stakeholder groups, including one with agricultural science university students ($n = 19$; aged 20-21), and two with dairy farmers ($n = 14$) and industry representatives ($n = 11$) in late 2025. Data were collected through individual and group discussions, group activities, and preference voting on indicators and benchmarks relevance and were analysed using thematic analysis. Firstly, participants were asked to define an attractive and productive workplace. Six overarching themes were identified: working conditions, work organisation, farm infrastructure, technology, workplace culture, and job satisfaction. Participants were asked to rank the most suitable indicators to measure this workplace from a predefined list of 40 indicators developed from previous research on social sustainability within farm workplaces. A Likert scale from 1 (least relevant) to 10 (most relevant) was used to rank indicators. Highest-ranked (mean score ≥ 8) were communication quality, hours worked/week, days off/year, job satisfaction, finishing time, weekends off/year, staff turnover, and quality of life. Sub-group discussions were used to refine indicators and co-design benchmark values. The most referenced indicators were evening finish time, hours worked/week, and farmer time-off, where participants proposed benchmarks of 5.30pm, ≤ 48 hours worked/week, 2 weekends off/month (i.e. 4 weekend days/month) and 21 days of leave, respectively. Quality of life and communication were also important indicators, however, participants found them difficult to benchmark directly and were often linked to workload and management practices (e.g., use of standard operating procedures, clear role identification). While there was some variation in indicators across workshops, the key underlying themes and indicators were consistent. These findings offer a practical framework to measure workplace attractiveness and productivity on pasture-based dairy farms, with further research required to assess farm-level benchmark feasibility and impact.

Keywords: Social sustainability, Farm attractiveness, Co-design, Pasture-base systems, Dairy farming

Mechanisms for Matching Agricultural Supply and Demand: Insights from Italy

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Significant transformations have occurred in agricultural work. Technological innovations and sustainable practices have changed operational methods, while challenges persist regarding labour availability, workers' rights and decent working conditions. Against this backdrop, mechanisms for matching labour supply and demand can address flexibility and employment continuity.

This paper aims to assess the effectiveness and replicability of tools adopted in Italy to facilitate labour matching in agriculture and increasing the attractiveness of the sector. The research is based on interviews with stakeholders, including professional agricultural organizations, trade unions, and farmers. Notable examples involve joint employment, company-level agreements and the role of public employment centres.

Joint employment is designed to enhance flexibility by enabling enterprises belonging to the same group, owned by the same person, or connected by family ties up to the third degree to share workers for activities across their farms. The same is possible among firms in network contracts, provided that at least half of them are agricultural. Despite its potential benefits, its use remains limited to family contexts due to bureaucratic complexity, rigid procedures and a lack of incentives. Wider application across business networks and integrated supply chains could amplify its impact.

Company-level agreements in agriculture define tasks, periods and working days, ensuring automatic re-employment in subsequent seasons. This mechanism provides minimum employment guarantees, fosters worker loyalty and creates pathways for stabilisation within seasonal work. Mostly used by larger firms, it could be extended to smaller ones to strengthen continuity and improve working conditions.

The employment centre in Portomaggiore (Ferrara) is an example of a public initiative designed to match labour supply and demand, combat undeclared work, and prevent illegal hiring and gangmastering (*caporalato*). Set up through a collaboration between regional authorities, local institutions and social partners, it provides information, guidance and support relating to job postings. The project employs cultural mediators and uses multilingual materials to improve access for foreign workers, and organises awareness campaigns and job fairs. Representing a replicable model to improve agricultural employment and reduce illegal practices, it offers an integrated approach at low cost.

Findings highlight how these mechanisms can improve flexibility and security in agricultural employment, offering practical insights for policy makers and stakeholders committed to fair and transparent labour practices.

Keywords: Labour market, Labour matching, Joint employment, Company-level agreements, Public employment centres

Working Group 7: Innovative Approaches to Enhancing the Attractiveness of Agricultural Work in Rural Africa

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This working group will examine the root causes of labor scarcity in rural Africa and explore strategies to improve the attractiveness of agricultural jobs, focusing on wage trends, working conditions, and job satisfaction for vulnerable groups including women and youth. It will also explore systemic approaches to agricultural workforce development, focusing on collaborative strategies that can be implemented at local and regional levels. Sessions will highlight case studies, empirical or statistical data analyses, as well as methodological and theoretical contributions that explore the topic's objectives from diverse disciplinary perspectives. Participants share their insights in workforce development and potential solutions to enhancing labour management and workforce attractiveness.

Work and employment in agriculture in Africa: a review

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Work and employment are central concerns for sustainable farming systems and rural communities, especially regarding the specific issues of the African continent. Demographic trends predict that 575 million of young people will enter the labour market between 2025 et 2040. Agriculture is called to provide jobs with good working conditions and remuneration, tackling the challenges of poverty, inclusion, attractivity and health. Existing literature covers diverse topics related to work, employment in agriculture in Africa but remains fragmented. The objective of this paper is to review the state of scientific literature: metadata were extracted from the Web of Science and Scopus platforms for 726 documents with work, employment and their declinations (labour, profession...); agriculture and its declinations; Africa (continent to countries) in the title, keywords and abstracts over the period 2012-2023. Scientometrics analyses were carried out allowing the description of the corpus in terms of publishing countries, countries studied, disciplines mobilized and topical clusters. Five major thematic areas were explored qualitatively by experts of the field.

Authors originate from OECD (58 %, USA, UK first) and Africa (42 %, South Africa, Nigeria first). Countries most studied were Ethiopia and Nigeria. The disciplines mobilized were mainly from the economics, applied sciences and politics fields (45 % of the corpus). Thematic 1 is “youth employment, labour market and drivers of change”. It discusses the unemployment rates, notably among young people, considering the impact of the structural transformations of the sector, agricultural policies and the attractivity of the jobs. Thematic 2 deals with “agrarian changes and social relations of production”, focusing on land allocation and land redistribution and the impacts on migration and social relations. Thematic 3 is focused on “farm activities, household labour and gender equality”, exploring issues of farm labour allocation and employment factors affecting the household vulnerability and gender equality. Thematic 4 “labour allocation and productivity of diverse production systems” deals with labour inputs (family or wage workers), management of farm operations and productivity criteria (labour productivity, yields). Thematic 5 is focused on “health at work”, covering health care and risks regarding professional diseases linked with exposition to pesticides or to heat, notably for women. Compared to equivalent reviews on “work in agriculture” worldwide, we show that work organization patterns within farms, musculo-skeletal troubles and livestock as an agricultural activity are under-represented in the African corpus. The coverage on the main development issues related to poverty and income, youth, women, access to land, working conditions. Skills and extension challenges also remains sparse. Analyses reveals the need for multi-sectoral approaches, community engagement calling for further research.

Keywords: work, employment, agriculture, Africa, thematic areas, scientometrics

Labor Shortages and the Attractiveness of Agricultural Work in Algeria: Evidence from a Major Vegetable-Producing Region

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Agricultural labor shortages in Algeria, a largely understudied issue, have intensified in recent years, posing serious threats to farm viability. This research seeks to explore and empirically analyze this phenomenon through the case of M'zirâa, a major vegetable-producing area in Biskra Province. A hypothetico-deductive approach is adopted, based on questionnaire surveys conducted during the 2018 and 2019 cropping seasons with 132 farm operators and co-operators and 18 agricultural workers across 125 farms selected through stratified random sampling. The analysis is complemented by econometric methods, including logistic regression and multiple correspondence analysis, implemented using STATA 14.2.

Results indicate that labor shortages affect 56.8% of farms and become critical beyond ten greenhouses or 3.5 ha of open-field crops. Among affected farms, 44% report shortages below 0.33 full-time equivalent (FTE), while 14% exceed one FTE. Sharecropping emerges as a key adjustment mechanism to offset family labor deficits, used by 58.5% of farmers to anticipate permanent labor needs. Out of 65,977 seasonal work hours recorded, 40% are allocated to open-field harvesting, 18% to greenhouse harvesting, 22% to greenhouse preparation, and 7% to maintenance tasks. Labor recruitment relies predominantly on local social networks.

Econometric analyses confirm that low wages and incentives, considered insufficient by both workers and newcomers, as well as difficult working and living conditions, are the main factors of disengagement (negative logit coefficients significant at 1%). Additionally, tertiary sector jobs offer more attractive incomes than agricultural work, which is becoming less remunerative and appealing. Employment policies that support the creation of micro-enterprises also divert labor, particularly among young people ($\beta = +2.336$; $p < 0.01$). The behavior of youth, seeking more flexible jobs, further exacerbates shortages ($\beta = +1.869$; $p < 0.01$), while the reduction of family labor due to migration or activity diversification is another key factor ($\beta = +1.432$; $p < 0.01$). Human capital and socio-economic constraints among the youth workforce appear as secondary variables, statistically non-significant despite their frequency in responses (62.67% and 55.33%).

In response, farmers adopt short-term strategies (wage increases, reduction of cultivated areas), medium-term adjustments (shift toward less labor-intensive crops), and long-term strategies (revising sharecropping arrangements). Policy options include adapting agricultural labor legislation, revising wage and social security schemes, and supporting employer organizations, private placement services, and labor-saving technologies to enhance the sector's attractiveness, particularly for young workers.

Keywords: labor shortage, employment policies, agricultural labor market, working conditions, wages and incentives

Capitalization of experience in improving working conditions for agricultural workers and laborers

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This capitalization report documents the implementation of two projects: ProMOD (Promotion of Decent Work for Sustainable Plantain Production in the Plateaux Region of Togo) and DOAPACA (Rights and Duties of Agricultural Workers on Pineapple Farms in Pineapple-Producing Communities) in Benin (Atlantique, Plateau, Ouémé). Both initiatives, led by Brücke Le Pont with strategic partners (MAPTO in Togo and APID in Benin), aim to improve the working and living conditions of agricultural workers.

These projects were designed to address the precariousness and social vulnerability of agricultural workers. The approach adopted was systemic (Market Systems Development - MSD) and aimed to transform workers into genuine economic actors capable of negotiating and securing their incomes and accessing social protection. The main objectives were:

- Strengthening the capacities and collective organization of workers.
- Creating an environment conducive to sectoral social dialogue.

The interventions generated significant and replicable outcomes:

- **Organization and Professionalization:** The projects supported workers in organizing themselves into cooperatives, benefiting from business plans and practical training (field schools, technical modules).
- **Security and Negotiation:** The establishment of collective pricing tables for agricultural services has secured incomes and strengthened bargaining power.
- **Protection and Rights:** Access to protective equipment was improved, and participation in social dialogue was institutionalized (e.g., in Benin, the AIAB[1] recognizes the need to integrate workers into its structure), thereby contributing to the gradual recognition of their rights.
- **Education and Skills Development:** Through practice-oriented field schools, participants acquired new knowledge in sustainable agriculture, accounting, and teamwork. Women and young people in particular were able to take on new roles.
- **Social and Economic Impact:** Small savings groups and microloans strengthened financial independence. New community structures emerged in both countries, which continue to exist beyond the project.

To achieve these results, the projects mobilized a wide range of actors, including public institutions (Labor Inspectorate, CNSS[2], ATDA[3]), trade unions, and professional organizations, in a participatory and multi-stakeholder process.

Despite certain constraints, the projects succeeded in strengthening local dynamics, creating collective learning, and generating significant gains. The lessons learned highlight the crucial importance of multi-stakeholder participation, an inclusive approach (gender and youth), and institutional anchoring to ensure sustainability and scaling up. These foundations are solid for replication in Togo, Benin, and potentially in other African contexts.

[1] Association Interprofessionnelle de l'Ananas du Bénin

[2] Caisse Nationale de Sécurité Sociale

[3] Agence Territoriale de Développement Agricole

Keywords: decent work, agricultural workers, cooperatives, collective pricing tables, social dialogue

Working Group 8: How Effectively Can Production Systems Attract Workers and Support Decent Work?

Convenors: Marion Beecher (SETU, Ireland), Nathalie Hostiou (INRAE, France)

This working group explores effects of the on-going transformations of different production systems (animals and/or crops, pasture based or housing system, etc.) in countries of the Global North and South on the attractiveness of work and support of decent work. It analyses the diversity of forms of work related to the production systems considering different challenges (work organisation, productivity, labour flexibility, capacity to transform, etc.), effects of technical choices (combination of production, livestock and crop management, processing and marketing) on work, discussing also frameworks, concepts and methodologies. Contributions from diverse disciplinary and interdisciplinary perspectives are welcome.

Australian farmers' people management practices and progress toward 'employers of choice'

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Attracting and retaining a farm workforce is a complex challenge for the agricultural sector. Farm employers play a critical role in these workforce processes with high quality people management practices (e.g. flexibility in work hours, career development) associated with reduced employee turnover and a more engaged workforce with increased productivity, high employee satisfaction and low voluntary turnover, yet farm studies suggest that people-oriented farm practices have been slow to take hold and vary widely. Only a small number of studies have examined people management practices being deployed to attract and retain a farm workforce at a national scale, and few have explored this across different production systems.

This paper reports on a study of Australian farmers' people management practices and their attitudes and aspirations toward 'best practice' and 'employer of choice' (EoC). An EoC refers to employers that set their workplace apart so that employees choose to work and stay with them, over other employers. Australian farmers were invited to participate in a consultation about their people management practices to attract and retain a workforce through completion of a questionnaire (n=86) or interview (n=96) (182 total respondents). A diversity of livestock, cropping, dairy, horticulture, and intensive livestock farms were represented. Applying conceptual frameworks from human resource management theories related to employer branding, data was analysed to describe the frequency of people management practices (e.g. recruitment and selection methods), the extent and type of practices implemented on smaller and larger farms (i.e. less than or more than 20 employees), and aspirations of farmers in being an 'employer of choice'. Our results found no difference in the prevalence of people management practices across different types of farms, however larger farms were more likely to deploy more practices, likely because of access to more resources. We found no difference in attitudes toward the importance of people in farming systems between smaller and larger farms. We found that employers that valued training for themselves were more likely to support their employees in attending training.

With respect to aspirations toward 'employer of choice', we found farmers preferred terms like 'respected employer' or 'places where employees like to work'. As our respondents were likely to be skewed toward those farmers with people-oriented attitudes and self-driven in their development of skills, to support other farmers the research team produced a 'Best Practice People Management Self-Assessment Tool', or health check. It is envisaged that the promotion of the benefits of using this tool as well as better signposts to useful resources tailor-designed for agriculture, alongside more employer networking and peer learning opportunities, will contribute to enhancing Australian farmers capacities to better attract and retain a workforce.

Keywords: human resource management, employer brand, workforce attraction, workforce retention, best practice

Does nobody want to work in the countryside? Know-how, working conditions, and consent in 21st-century Argentine livestock farming.

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Beef cattle production in Argentina has undergone significant transformations over the past thirty years. Following the expansion of soybean, cattle farming has lost in use of land and become increasingly intensified, with feedlots and crop–livestock integration emerging as the most visible expressions of this process. At the same time, labour formalisation has coexisted with a decline in permanent employment within the sector. In this context, the notion that “no one wants to work in the countryside” has been repeatedly invoked both in the private sphere —by sectoral actors— and in the public sphere —through the media and academic research—

Against this backdrop, the aim of this paper is to examine the extent of the perceived “labour shortage” and its underlying causes, focusing on three analytical levels: working conditions, skills, and consent in the labour process. The analysis draws on fieldwork conducted as part of a PhD in Social Sciences at the University of Buenos Aires during 2023 and 2024. This fieldwork included, among other activities, more than 80 interviews with salaried workers, cattle farmers, and professional technicians in the Province of Buenos Aires, who were directly asked: Is it true that there are no people to work in the countryside? Why do you think this happens?

The main answers indicate that actors emphasise a lack of the required practical know-how, a perceived absence of commitment and responsibility on the part of workers, and a refusal to reside at the rural workplace. Digging deeper into the analysis based on these responses and the fieldwork, we identified three key factors (and incentives for employees) that are decisive in keeping workers in their jobs and in the sector. First, there is a lack of mechanisms for the reproduction and recognition of required skills, which are acquired through practice, are not formally recognised nor institutionalised. Second, low wages and poor working and living conditions, particularly in comparison with other sectors and urban life, discourage labour retention. Third, consent and workers’ influence over the labour process have declined as a result of the standardisation and professionalisation of production. We argue that this triad constitutes the core drivers of the systematic reduction in labour supply in the sector.

Furthermore, rather than recognising—either monetarily or symbolically—the skills associated with cattle farming know-how and improving working conditions, there is a prevailing tendency to pursue technological change and to recruit workers from other regions of the country as a means of overcoming this perceived labour “shortage”. By shifting the focus of the problem in this way, the resulting scenario reveals a group of skilled workers and their descendants, who value rural life and their work, yet are increasingly pushed out of the sector and into other, predominantly urban, occupations.

Keywords: Cattle Farming, Rural Labour, Skills and know-how, Working conditions, Decent Work

The Craft of Alpine Farming: A New Typology for Workers on Alpine Farms

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In December 2023, the Swiss Alpine Season, with its various ecological, cultural and economic functions, was recognised as an immaterial UNESCO cultural heritage. The value of practices associated with the Alpine season in Switzerland is widely acknowledged. To preserve this cultural heritage and cope with increasing pressures such as climate change, seasonal workers require in-depth knowledge and a wide range of skills.

This skill set is usually acquired largely on the job, since formal education in alpine farming specialities is provided through only brief introductory courses. Like the traditional apprenticeship model for crafts, acquiring alpine farming knowledge and skills can be understood as progressing from apprentice to associate to master. This framework allows a biographical perspective on the results of our study of working and living conditions of alpine farm workers, highlighting different challenges, expectations and degrees of identification with the craft for different workers.

Overall, our study, which comprised an online survey ($n = 366$) and in-depth semi-structured interviews with alpine farm workers ($n = 13$), shows that there are many reasons why people do not return to alpine farms. Conflicts with employers and colleagues, hard and long working hours in combination with low wages, and other factors play their role. One of the main reasons why seasonal workers do not return to alpine farms is that they often experience difficulties integrating their alpine farm employment into their general life situation in the long term. As a result of the insufficient working and living conditions on the farms and the lack of opportunities to balance 'alpine farm' life with other aspects of life, there is a shortage of skilled labour on Swiss alpine farms.

To address these challenges, policymakers and alpine farms require a practice-oriented conceptual framework. A typology of workers on alpine farms could help to identify tailored solutions at both levels. While existing typologies of alpine farm workers are useful in some respects (e.g. in terms of motivational factors), they seem rather unproductive in others (e.g. by reproducing certain socio-cultural stereotypes). Therefore, we propose a new typology, even if it appears in old clothes. Considering alpine farming work as a craft and considering the elements of time and change, we propose categorising workers as apprentices, associates and masters, in the traditional fashion of crafts. By examining the specific challenges faced by each group, we believe we can provide a useful tool for improving working conditions according to their specific needs.

Keywords: alpine farming, craft, working and living conditions, typology

Calf Care Labour Allocation on Pasture-Based Dairy Farms in Ireland

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Pasture-based dairy systems are characterised by pronounced seasonal labour demands, which have intensified in recent years due to increased herd sizes in most developed countries. For example, approximately 33% of annual labour input occurs during the calving period (February, March and April) on Irish spring calving dairy farms. Calf care and management is a seasonal task in such systems accounting for 20% of total labour input during this period, representing a substantial contribution during the most labour-intensive period of the year. Thus, it is an important area to focus on for improving labour efficiency. The objective of this study was to examine calf care time-use on Irish spring-calving dairy farms, and who conducts the work (e.g., farmer, family, hired), across different herd size categories (HSC). Seventy-two spring-calving dairy farms recorded labour input data on alternating days each week using a smartphone app from February to June. Any labour input by farm workers not using the app was recorded through a weekly online survey. Data were gathered across all farm tasks, and for this study, data on calf care was extrapolated, and categorised based on the total calf-care labour input, and by labour type for farmer, family, and hired labour. Farms were divided into four HSCs to examine the herd size effect: HSC 1 (50–90 cows), HSC 2 (91–139 cows), HSC 3 (140–239 cows), and HSC 4 (≥ 240 cows). Labour was measured in total hours and as a percentage of the total contribution for each task (e.g., farmer, family, hired), allowing for comparisons across HSC. On average, farms milked 137 cows and inputted 2,159h of work from February 1st to June 30th, including 309 hours for calf care. The total hours associated with calf care increased as herd size increased; HSC 1: 201h, HSC 2: 299h, HSC 3: 370h, and HSC 4: 464h. Farmer calf-care hours were 135h for HSC 1, 154h for HSC 2, 151h HSC 3, and 189 HSC 4. Family calf-care hours were similar across HSC at 64h (HSC 1), 92h (HSC 2), 51h (HSC 3), and 99h (HSC 4). Hired calf-care hours increased as HSC increased from 1.7 (HSC 1) to 177h (HSC 4). From February to June, the distribution of labour input for calf care differed from other tasks. Across all other tasks, the farmer completed 65% of total labour input, with family and hired labour contributing 18% and 17% respectively. In contrast, calf care, less farmer-dominated, with 47% completed by the farmer, 27% by family and 26% by hired labour. Calf care labour input increased linearly with herd size and was increasingly shifted from the farmer to family and hired labour. Although the farmer remained the primary source of labour input, family and hired labour together accounted for 37% of total labour input, and 53% of calf care input. This highlights the importance of effective labour planning for spring-calving, and the need to consider the coordination, management and skills of all labour sources to ensure effective calf rearing.

Keywords: Labour management, labour time use, seasonality, calf care, dairy farming

In search of an ideal model for collective work organisation on collective farms: dream or reality?

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Since the early 2010s, a new form of agricultural farm has been developing in France: collective farms, which responding to several challenges including the attractiveness of the profession and the generational renewal. These collective farms are based on a commitment to shared resources and human labour in an agroecological approach. Production systems are based on a diversity of agricultural (animal and crops) and sometimes non-agricultural activities. The aim of these collective farms is to establish collective governance with a horizontal approach. This raises questions about how this “ideal” of horizontal governance of work is achieved, as these farms face a range of challenges relating to work (workload, etc.). The aim of this study is to identify to what extent collective farms meet or fail to meet their intention of horizontal and shared governance of work.

Semi-structured interviews focusing on the characterisation of the production system, legal status and work were conducted with 27 collective farms in France. The analysis of the transcribed interviews followed four themes: relationship to working time, division of labour, decision-making and remuneration, by looking for differences and similarities between farms.

The majority of collective farms (16/27) accept differences in working hours between members, as strict equality is not sought or is simply not possible. Most collective farms (19/27) do not even keep track of working hours because it is a constraint, an unthought-of issue, or because it contravenes the members' autonomy of choice regarding their work pace.

The division of labour based on versatility is also an ideal for these farms, but the majority (18/27) operate with specialisation by activity while seeking to share some tasks on certain activity. Workers carry out the work and make decisions in order to distribute the mental load.

Collective decision-making is central to the functioning of these farms, as the majority of them (17/27) have established regular formal weekly and annual discussions. Weekly meetings are held to discuss various topics, including the organisation of work. They also serve to unite the group, facilitate the transfer of information and avoid tensions.

The results show that the ideal of horizontal and shared governance of work is not always easy to maintain, and that collective farms adapt their form of work organisation as they go along.

The results will be translated into decision-making tools with the support actors involved in the research project, in particular to explain the diversity of organisational choices available to project leaders.

Keywords: collective farm, work, agricultural activities, attractiveness

When data comes to the sheepfold: uses of digital tools in sheep farming

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The development and utilisation of digital tools could optimise farm management and support farmers' decision-making by facilitating data collection, processing and implementation. Numerous studies have highlighted the potential of digital tools in livestock farms. However, little literature exists on how farmers use this data for animal management, particularly in sheep farming.

To address this gap, this study, which flows a previous research, examines the integration of digital tools within sheep farming systems. The result of the first study highlighted that data is used at several levels, ranging from administrative farm management to data collection (e.g. weather data, lamb weighing) which can support farmers' decision-making (e.g. sorting, selling lambs). Based on the first findings, this study aims to further explore the use of digital tools in sheep farms by focusing specifically on: 1) the types of data used by farmers, 2) their role in decision-making processes, and 3) any changes to the way animals are managed and farmers' work.

The methodology involves conducting around fifteen semi-conducted interviews with sheep farmers located in four French sub-regions where sheep farming is well established. Particular attention is given to a pair of digital tools consisting of a stick reader and animal management software, as this combination was the most frequently encountered on the farms surveyed in a previous study. Walk-over weighing is also examined, where applicable. These tools were also selected because they are facilitating key sheep farming tasks, such as drafting, sorting and weighing animals.

Preliminary observations suggest that these tools enable farmers to access and manage herd-level data more easily (e.g. average daily gain). They mainly appear to support farmers by facilitating key farming tasks, such as drafting, sorting, monitoring and weighing animals.

This study will identify the data actually mobilised by farmers when managing their herds and will contribute to reflections on the development of digital tools that are aligned with farmers' practices and needs.

Keywords: Digital tools, decision-making, work, sheep farming systems.

Transforming the agricultural workscape – learning from forms of Community Supported Agriculture in Germany?

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In contrast to overall agricultural farm numbers in Germany, the numbers of Community Supported Agriculture (CSA) farms – called Solidarische Landwirtschaft in German – are increasing since many years. Moreover, while numbers of trainees in vegetable farming in Germany are very low, several self-organised groups of trainees have formed within the network of CSA – Netzwerk Solidarische Landwirtschaft – in Germany over the last seven years. Many workers at CSAs are people who chose working in agriculture after completing higher studies and/or working in other fields. These facts and figures seem to point out that production systems found here are more attractive than traditional farms, especially to new entrants in agriculture. This presentation aims to identify the reasons for this and addresses the question if insights may contribute to increase attractiveness of agricultural labour on other farms as well.

In order to do so, the concept of workscape (Andrews 2008) is introduced and applied to agriculture. The concept allows analysing farms and agricultural organisations as space in which labour takes place, and which in turn is produced by labour. In the following, and drawing on economic and labour geography, studies of social and solidarity economy and organizational studies, the study identifies and discusses factors of attractiveness. While opportunities for part time work, flexible working hours, and better pay play a role, the presentation focusses more in detail on labour agency and economic democracy, tracing how labourers are able to co-produce the workscape according to their needs and values.

This presentation is based on six years of work as a vegetable gardener in three different CSAs and a small organic vegetable farm in Germany, as well as membership in the network since 2022 and participation in a trainees group within the network of CSA since 2025. During this time, ethnographic methods have been used on field as well as in the organisational structures of two of the CSAs; a limited number of qualitative interviews has been conducted in addition to that.

Keywords: workscape; labour agency; economic democracy; Community Supported Agriculture

Analyse comparative de la qualité du travail et de l'emploi dans les systèmes rizicoles agroécologiques et conventionnels du lac de Guiers.

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Dans la zone du Lac de Guiers au Sénégal, la riziculture constitue un pilier de la souveraineté alimentaire, bien que le modèle conventionnel soit aujourd'hui fragilisé par des défis de durabilité et des externalités sociales négatives, notamment la dépendance financière et les risques sanitaires (FAO, 2021). S'inscrivant dans la lignée des travaux de Dumont et al. (2021) sur la complexification du travail agricole, cette étude compare l'impact des systèmes intensifs et des dynamiques agroécologiques émergentes sur la qualité du travail et de l'emploi. À travers une enquête menée auprès de 210 exploitations, l'analyse mobilise des indicateurs précis sur les trajectoires productives, les conditions de vie et les aspirations des travailleurs.

Les résultats révèlent une dualité marquée : si le modèle conventionnel privilégie la productivité brute au prix d'une précarisation liée aux risques chimiques, les pratiques agroécologiques favorisent une meilleure répartition de la valeur ajoutée vers la main-d'œuvre locale, conformément aux conclusions de Piraux et al. (2023). Bien que cette transition exige un investissement accru en temps et en savoir-faire, elle renforce significativement l'autonomie décisionnelle et le bien-être des actifs.

En définitive, l'étude démontre que l'intégration de la « qualité du travail » est désormais indispensable pour évaluer la durabilité réelle des transitions rizicoles en zone sahélienne. Dès lors, l'État doit réallouer une partie de ses budgets pour soutenir la rémunération de la main-d'œuvre locale et la formation technique aux pratiques agroécologiques. Puisque l'agroécologie requiert davantage de technicité et de temps, l'action publique doit impérativement valoriser ce travail pour le rendre plus attractif que l'emploi précaire du modèle conventionnel.

Keywords: Agroécologique, Quaework, emploi, riziculture, Agriculture conventionnelle, Qualité du travail, Le lac de Guiers.

Working conditions along installation trajectories of itinerant sheep farmers : 2 case studies

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Sheep farming can be complementary to crop production, and its development in landscapes specialised in arable farming can contribute to diversification and agroecological transition. Itinerant sheep farming systems, relying on little or no access to land, constitute a possible development pathway. In these systems, animals graze on resources available within the territory through partnerships between the sheep farmer and willing arable farmers, managers of natural and semi-natural areas, or landowners.

However, a significant share of these projects is abandoned after a few years, with working conditions emerging as a major factor in activity cessation. These livestock farming systems, which are highly diverse, remain insufficiently documented, particularly from a work perspective and regarding the trajectories through which farmers do or do not manage to stabilise their activity. This study aims to analyse the installation trajectories of itinerant sheep farmers by relating the evolution of farming systems on the one hand, and the organisation and working conditions on the other.

Two recently established sheep farmers, along with the arable farmers they work with, respectively in the Paris region and in north-eastern France, have been followed since late 2024. The study relies on an intervention-based approach involving the facilitation of participatory workshops using a serious game designed to support such partnerships. Immersive stays with the livestock farmers were also conducted. These devices make it possible to document changes in the resources mobilised through partnerships and, more broadly, in farming systems. They also allow different dimensions of farmers' working conditions to be apprehended, centered on livestock farmers' perception.

The analysis of these two contrasting cases highlights the close intertwinement between farming systems and working conditions during the first years of installation. The results show in particular that: (i) dependence on resources over which farmers have limited control (climatic hazards, decisions made by partner arable farmers) strongly structures working conditions; (ii) low initial income levels frequently lead to combine livestock activity with off-farm work that is difficult to sustain for a single livestock farmer without replacement options; and (iii) lifestyle choices, linked to herd itinerancy and economic precariousness, strongly influence working conditions.

The methodology mobilises intervention using a serious game not only as a support tool, but as a knowledge-production device that requires and justifies interviews with the stakeholders involved. This device enables an in-depth understanding of the critical development phase of original livestock farming systems based on partnerships, across two contrasting cases. This study identifies potential levers to sustain these projects by better taking farmers' working conditions into account.

Keywords: itinerant sheep farming systems, decent work, serious game, diversification of arable landscapes, partnerships

Working Group 9: Decent Work in Family Farming and the Agri-Food Sector

Convenors: Caroline Jacques (University of the Extreme South of Santa Catarina, Brazil),
Dimas de Oliveira Estevam (University of the Extreme South of Santa Catarina, Brazil)

This working group explores efforts to promote decent work in family farming and the wider agri-food sector considering global changes. It conceives family farms as closely connected farm enterprises and households that co-evolve. In family farms economic, environmental, social and cultural dimensions interconnect. Global changes, such as climate change, demographic change, migration, pandemics and technological transformations that affect the agri-food sector and family farms need to be considered, when exploring decent work and its promotion, including differences in scale and other characteristics between countries. Hence, comparative analysis of policies that target rural labour forces in the Global North and South warrant attention.

A Triangulated Perspective on Labor Conditions in Certified vs Non-Certified Coffee Farms in Rwanda: Farmer Reports, Worker Narratives, and Gender Dimensions

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This study examines working conditions on certified and non-certified coffee farms in Rwanda, with a focus on gender, dignity, and the role of voluntary sustainability standards (VSS). Using a mixed-methods approach, we combine survey data from 690 smallholder households with semi-structured interviews conducted with 20 hired workers across 4 coffee producing districts. This design enables triangulation of farmer-reported practices and worker experiences to assess both formal compliance and lived realities of work.

Quantitative findings reveal persistent gendered divisions of labor. Women contribute significantly more labor per season than men (77.4 versus 70.3 days), concentrating in harvesting, weeding, and post-harvest processing, while men primarily undertake pruning and chemical application. Training on occupational hazards and equipment use is similarly high across certified and non-certified farms. Access to personal protective equipment (PPE) is slightly higher on non-certified farms, a pattern that may reflect the promotion of Integrated Pest Management (IPM) on certified farms, which reduces chemical spraying and potentially lowers the need for PPE rather than indicating weaker worker protection.

Certification is associated with modest improvements in formal labor conditions: certified farms report slightly higher union membership, better access to drinking water and sanitation facilities, and a slightly higher prevalence of bonuses and contracts. Wage differences between certified and non-certified farms, however, remain modest. Non-certified farms exhibit higher rates of hiring pregnant and breastfeeding women, suggesting greater flexibility or inclusiveness in employment practices, although potentially outside formalized labor frameworks.

Child labor incidence is very low across both certified and non-certified farms, with only slightly higher prevalence among non-certified farms. Average daily working hours are comparable (approximately 6.7 hours per day), and breastfeeding time shows substantial variation but similar averages across farm types, indicating broadly comparable labor intensity and family support practices.

Overall, the findings suggest that while certification contributes to improved formal labor rights and infrastructure, it does not fully address gendered inequalities or guarantee dignified working conditions. The study underlines the importance of integrating worker perspectives and contextual labor practices into sustainability standards to better align certification with the goals of decent work, gender equity, and worker well-being.

Keywords: Coffee certification; labor conditions; sustainability standards; Rwanda

Universities as Drivers of Decent Work in Family Farming: An Institutional Evaluation Perspective

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In the context of major transformations affecting agriculture and agri-food systems climate change, technological disruption, demographic shifts and global crises the promotion of decent work in family farming requires coordinated action beyond traditional labor and agricultural policies. This paper argues that universities play a strategic yet underexplored role as institutional catalysts for decent work through their missions of education, research, extension and evaluation. Grounded in the ILO Decent Work Agenda emphasizing employment quality, rights, social protection and social dialogue (ILO, 1999; ILO, 2022), it examines how higher education institutions can improve labor conditions in family farming by shaping values, competencies and governance practices aligned with social justice and sustainability. From an institutional evaluation perspective, evaluation is understood not merely as a governance tool that aligns teaching, research and outreach with societal needs (Harvey & Green, 1993; Brennan & Shah, 2000). Through qualitative institutional analysis and documentary review, the study explores how internal quality assurance systems and self-evaluation processes can incorporate decent work principles into curricula, research agendas and extension programs connected to rural territories (Stensaker, 2018). Three university roles are highlighted. First, universities act as formative spaces for citizenship, fostering ethical, social and labor-related competencies relevant to rural development and agri-food systems, reinforcing higher education's social mission (Marginson, 2016). Second, they function as knowledge brokers, generating and translating interdisciplinary research that informs public policies, supports innovation in family farming and strengthens rural labor governance (OECD, 2019). Third, they operate as institutional exemplars, embedding decent work values into evaluation frameworks, governance arrangements and stakeholder engagement while assessing social and territorial impact (Neave & van Vught, 1994). Evidence from Latin America shows strong potential for universities in the Global South to integrate evaluation with extension practices addressing rural vulnerabilities and informality (FAO, 2014). In the Global North, universities tend to emphasize policy coherence, technological innovation and standardized quality assurance mechanisms aligned with agricultural modernization (European Commission, 2020). This comparison reveals complementarities and asymmetries and underscores the need for cross-regional learning and adaptive evaluation models sensitive to diverse rural contexts. Reframing evaluation as a transformative and reflexive instrument strengthens the university's contribution to inclusive and resilient agri-food systems and supports the development of professionals capable of advancing decent work across Global South and North contexts.

Keywords: Decent work, Family farming, Institutional evaluation, Higher education, Agri-food systems

Small Processors, Big Risks: Why Decentralization Doesn't Guarantee Decent Work in the Agrifood System

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Research on consolidation in the agrifood system shows that a decentralized, competitive agrifood system with small-scale food processors offers positive outcomes for consumers, farmers, communities, and the environment. While small-scale farms and processors are expected to comply with regulatory labor standards, many are legally exempt from inspection or rarely reach the scale of violence required for enforcement. Given the social and legal constructions surrounding small-scale operations, this research explores what a decentralized and competitive food system means for the people who perform the labor.

This research draws on eight months of ethnographic fieldwork, including over 700 hours of participant observation, conducted in two small-scale meat processing plants in Iowa, USA, and interviews with workers and managers at these plants in 2022. Findings emphasize that, contrary to popular assumptions about small-scale, localized production, these operations actually expose workers to enormous vulnerability and risk, undermining the formation of decent and meaningful work in agriculture. Through the work of legal theorist Scott Veitch (2007) on the construction of legality in excusing violence and geographers like Harod and Wright's (2002) articulation of the plasticity of scale in assigning power, I develop the concept of "scalar" irresponsibility." This concept works to explain how and why forms of violence at smaller, more localized scales are made illegible and how this obfuscation can and does facilitate continued worker suffering in the agrifood system.

I detail how workers attempt to navigate the experiences of labor control, inadequate training, and failing equipment and infrastructure. To mitigate the negative aspects of their work, employees tried to block out management's harassment by avoiding their assistance and turning to other workers for help. Kill floor workers used playfulness amongst one another, took pride in training themselves in effective euthanasia, and used substances like alcohol and marijuana during the workday. At the second processor, workers relied on the human resources director to confront some of the negative aspects of the workplace. Still, they felt human resources failed to meet the needs of workers the way a union could. Finally, some workers viewed their jobs as temporary work or took on second jobs. These findings illustrate how aspects of small-scale processing, such as the presence of few workers in a single location, the absence of formal worker organizing, including unions or advocacy organizations, and a lack of regulatory presence, leave workers to contend with the precarity of scalar irresponsibility on their own. By engaging with workers' experiences, this research provides a means for developing interventions that take legal forms of violence at all scales of production seriously, thereby bolstering efforts to create decent and meaningful work in the agrifood sector.

Keywords: Small-scale, meat processor, worker safety, labor, ethnography

Can free labor be decent work? Representations of free labor and access to decent work among new farmers

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In a context marked by a continuous decline in the agricultural workforce, the attractiveness of farming occupations has become a central issue for the future of the sector. Access to decent work is increasingly identified as a key condition of this attractiveness. Yet agricultural activity structurally relies on various forms of free labor, mobilized by farmers themselves as well as by family members, partners, friends, or volunteers, and playing a decisive role in the functioning and economic viability of farms. This reliance raises a fundamental tension between the objective of promoting decent work and the persistence of work arrangements that escape standard employment norms.

Far from being reducible to unpaid work, free labor refers here to a heterogeneous set of practices situated in a gray zone between paid employment and non-market engagement. These practices combine voluntarism and constraint, social invisibility, underpayment, and diverse forms of compensation. Rather than a fixed category, free labor constitutes a constellation of work situations whose legitimacy is continuously negotiated by those involved. Examining free labor through the lens of decent work therefore provides a fruitful entry point for understanding how agricultural workers interpret their own working conditions and assess their fairness.

Following recent calls to rethink decent work in agriculture by taking into account workers' diversity and subjective experiences (Contzen et al., 2025), this paper analyzes representations of free labor among workers involved in recently established farms in the Conflent area (Pyrénées-Orientales, France). Based on semi-structured interviews conducted with newly established farmers and members of their close work environment (partners, family helpers), we examine how free labor is defined, justified, or contested by actors according to their trajectories, resources, and expectations.

Our results show that free labor is perceived as a fragile and unstable arrangement, whose acceptability depends on the existence of compensations (economic, social, or symbolic) that make it meaningful. When these compensations are perceived as balanced, free labor can be experienced as legitimate and even empowering; when they erode or fail, it is reinterpreted as unjust or exploitative. Free labor thus appears as a revealing lens on unequal access to decent work in agriculture, highlighting the dependencies and vulnerabilities that structure pathways into farming. More broadly, the paper questions the conditions under which agricultural work can be both sustainable and genuinely attractive.

Keywords: free labor, unpaid work, decent work, young farmers, representations

Family Farming and Decent Work in Brazil: Analyzing PRONAF Credit Access and Structural Bottlenecks

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Family farming is strategic for global food security and rural sustainability. However, its longevity depends on overcoming structural bottlenecks, such as the arduousness of manual labor. Within this scenario, access to credit for technological modernization acts as a catalyst for socioeconomic transformation. This research investigates how access to agricultural mechanization credit, through the National Program for Strengthening Family Farming (PRONAF), promotes decent work, impacts income generation, and enables family succession in the face of contemporary demographic shifts. The objective is to analyze the growth in machinery financing and discuss how these policies foster sustainable development and improve the quality of life in rural areas.

This study constitutes an integrative literature review, grounded in data from official databases such as the Ministry of Agrarian Development (MDA), the Central Bank of Brazil, and the Brazilian Institute of Geography and Statistics (IBGE), as well as scientific journals indexed in the SciELO database (classified as Qualis A and B). The qualitative and quantitative analysis of the data allowed for the correlation of the volume of applied resources with indicators of mechanization and rural retention.

Results demonstrate that family farming represents 76.8% of Brazilian agricultural establishments. In the 2023/2024 Harvest Plan, PRONAF released over R\$ 62.5 billion, of which approximately R\$ 8.5 billion was specifically earmarked for the acquisition of machinery and equipment (across 289,113 operations). This figure represents significant growth compared to the 2019/2020 Harvest Plan, when the amount for mechanization was R\$ 3.7 billion. Agricultural Census data corroborate this trend, recording a 49.9% increase in the number of tractors in the field compared to 2006. Financed mechanization ranges from tractors and harvesters to drones and irrigation systems, reducing physical exertion and exposure to pesticides.

The research highlights that rural credit extends beyond financial support; it enables greater longevity for families in the countryside, particularly attracting youth and women by reducing labor arduousness and increasing productivity. However, a challenge is identified in the equitable distribution of resources, as bureaucratic requirements may exclude the most vulnerable farmers, concentrating credit among already consolidated families. The study reinforces the need to refine public policies to ensure that technological modernization serves as an instrument for reducing inequalities in the rural environment.

Keywords: Family Farming; PRONAF; Agricultural Mechanization; Decent Work; Rural Succession.

Decent Work and Cooperativism in Brazil: Pathways to Social Protection for Family Farmers

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This article analyzes the perspectives that cooperativism, as a management model for Brazilian family farming, offers for the development of more and better rural occupations in accordance with the guidelines of decent work. The decent work agenda is applied across different sectors of the economy as a means of measuring and assessing the organization of labor. In the context of family farming, it entails ensuring dignified, safe, and fair conditions for producers and rural workers, combating informality, slave-like labor, and exploitation, while promoting health, well-being, social protection, and respect for rights.

In turn, cooperativism in family farming brings together small-scale producers to strengthen production and commercialization. The research adopted multiple methodological approaches, including bibliographic and documentary research, database analysis, interviews with family farmers, and participant observation conducted within a family farming cooperative in the city of Criciúma during the second half of 2025.

Regarding rural workers, according to the Continuous National Household Sample Survey (PNAD Contínua) conducted by the IBGE, approximately 7.9 million people were employed in agri-food activities (agriculture, livestock, forestry, fishing, and aquaculture) in Brazil in 2024. Concerning formalization in rural labor, of these approximately 7.9 million employed individuals, only about 2.8 million held formally registered employment contracts (formal jobs in the agri-food sector). The remainder largely comprises informal occupations, self-employment, or family-based work (family farming), which is common in rural activities.

Based on the most recent data from the Anuário do Cooperativismo Brasileiro (AnuárioCoop 2025, referring to the 2024 fiscal year), there are 1,179 agri-food cooperatives in Brazil. This system brings together more than one million cooperative-affiliated rural producers nationwide. According to earlier data, approximately 11.4% of Brazil's agricultural establishments were associated with cooperatives, with a higher concentration in the Southern region (39.3% in Rio Grande do Sul and 34.9% in Santa Catarina and Paraná).

With regard to decent work guidelines, public policies developed in Brazil are shown to ensure a minimum standard of dignity for rural labor. In the interviews, farmers mentioned the Funrural, the Rural Workers' Assistance Fund, which refers to the social security contribution levied, in general, on gross revenues from the commercialization of rural production. Cooperativism, as a management model for associating family farmers, promotes decent work through labor formalization, tax compliance, and the opening of commercialization channels.

Keywords: Decent Work, Social Protection, Cooperativism, Family Farming, Brazil

Productivity memory, macroeconomic shocks, and institutional constraints in Brazilian agricultural exports

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This study analyzes the role of productivity dynamics, macroeconomic shocks, and institutional constraints in shaping Brazilian agricultural export growth. Building on the literature on institutions, exports and structural competitiveness are conceptualized as a dynamic process characterized by memory and path dependence, in which past export and productivity performance conditions current outcomes (Hausmann, Hwang, & Rodrik, 2007; Schirigatti, 2018). Previous studies on Brazilian agribusiness highlight that long-term productivity accumulation and macroeconomic conditions are central to export performance, while trade policy instruments tend to play a secondary role in the short run (Souza et al., 2012; Rodrigues & Marta-Costa, 2021). To capture export persistence and productivity memory, a dynamic panel model is estimated using a two-step Difference GMM approach, consistent with the dynamic panel data literature (Baltagi, 1995; Gujarati, 2011). The unbalanced panel comprises 27 Brazilian states observed over approximately 21–22 years. Export growth is modeled as a function of its lagged value, long-lagged agricultural productivity, exchange rate changes, GDP growth, tariff variations, and an index of binding institutional constraints. The estimator addresses endogeneity and unobserved heterogeneity, following standard practices proposed by Arellano and Bond (1991). The results reveal significant negative short-run persistence in export growth, indicating adjustment dynamics consistent with export memory effects identified in the literature (Hausmann et al., 2007). Long-lagged productivity exhibits a positive and statistically significant impact, supporting theories of cumulative productivity, learning-by-doing, and delayed transmission of productive capacity to international markets (Baldos et al., 2019). Exchange rate depreciation and GDP growth positively affect exports, reinforcing evidence that macroeconomic shocks and external demand are key drivers of agricultural trade performance (Souza et al., 2012; Samargandi & Kutun, 2016). Tariff changes are not statistically significant, whereas binding institutional constraints exert a negative effect on export growth, corroborating findings on structural and regional bottlenecks in Brazil (Valverde, 2022). The findings confirm that Brazilian agricultural exports are predominantly shaped by productivity memory and macroeconomic conditions rather than short-run trade policy measures. In line with comparative advantage and competitiveness studies (Schirigatti, 2018; Rodrigues & Marta-Costa, 2021), institutional frictions limit the conversion of productive potential into realized exports. Policy implications emphasize strengthening productivity-enhancing investments, reducing institutional constraints, and ensuring macroeconomic stability to promote resilient agricultural exports and sustainable labor productivity growth, contributing to international debates on agri-food systems and decent work.

Keywords: productivity dynamics, macroeconomic shocks, work, agri-food export

Rural Credit and Decent Work in Brazil: Structural Inequalities Between Agribusiness and Family Farming

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Brazilian agriculture is structurally characterized by a duality in which a highly capitalized agribusiness sector coexists with family farming, the latter being responsible for the majority of rural employment yet historically underserved from a financial perspective. Access to rural credit constitutes not only a productive input but also a central determinant of the quality of life in rural areas, as it enables the adoption of technologies that mitigate labor arduousness, contribute to the eradication of child labor, and strengthen the economic and climate resilience of rural families. Within this context, the promotion of decent work emerges as a pressing challenge.

The objective of this study is to analyze the disparities in rural credit access between family farming and agribusiness in Brazil and their impacts on working conditions and socioeconomic reproduction in rural environments. To this end, the methodology adopted consists of a systematic bibliographic and documentary review, combined with the analysis of data from the Agricultural Census (IBGE, 2017), rural credit disbursement statistics from the Central Bank of Brazil, and delinquency indicators from Serasa Experian.

The results highlight a profound asymmetry in the allocation of financial resources. In 2025, approximately R\$ 350 million was contracted by agribusiness, excluding operations via Rural Product Notes (CPR) and barter, while only R\$ 64 million was allocated to family farming, which accounts for approximately 77% of rural establishments. The scarcity of financing limits the transition to more resilient productive systems, such as agroforestry, perpetuates low levels of technification, and intensifies the dependence on family labor, contributing to the feminization of rural poverty and the vulnerability of producers lacking land tenure regularization.

Furthermore, it was observed that delinquency rates are higher among producers without land titles, reinforcing the interdependence between land and financial insecurity. In the second half of 2025, the sector's delinquency rate reached 8.1%, considering debts overdue between 180 days and five years. Moreover, the reduction in the number of rural credit contracts, from 3,243,315 in 2005 to 2,324,586 in 2025, indicates a process of increasing resource concentration.

It is concluded that the current agricultural financing model, by prioritizing capital concentration, deepens structural inequalities and compromises the promotion of decent work in rural areas, accelerating selective rural exodus. The study highlights the need to reformulate rural credit policy by expanding PRONAF, reducing bureaucratic barriers for women and youth, and creating green finance lines focused on socio-environmental adaptation.

Keywords: Rural credit; Family farming; Decent work.

Working Group 10: Rethinking Labour in Agri-Food Models in Africa

Convenors: Sandrine Michel (Université de Montpellier, ART-Dev, France), Fred Mawunyo Dzanku (University of Ghana, Ghana), Dzifa Torvikey (University of Ghana, Ghana)

This working group explores sustainable agri-food models that can provide decent jobs for the cohorts of young people entering the labour market. It defines agri-food models as the specific combination of agricultural production systems and the valorisation of production by agri-food value chains. The working group aims at advancing the conceptualisation of labour in agri-food models by discussing the current approaches and available data. It will shed light on the socioeconomic and institutional conditions for more and better jobs in differentiated African territories. The group will share new conceptual knowledge and empirical findings on labour in agri-food models in a diversity of South and North contexts.

Climate Change, Global Economics, and Security Labor: A Study of the Vanilla Farmers Militias of Madagascar

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Abstract:

This paper introduces the concept of 'Security Labor' to illustrate the dynamic of the informal militias Malagasy Vanilla Farmers have organized in the Sava Region of Madagascar. Vanilla, a highly labor-intensive crop, has experienced wide variations in price in the last decade, including a 2016 price increase that resulted in a significant increase in theft of vanilla pods. In an effort to prevent theft, communities across the Sava region organized militias, which they refer to as 'reliable eyes' in Malagasy. Madagascar produces around 80% of the global supply of vanilla, and thieves regularly cut unripe vanilla pods from the vine, both depriving farmers of their livelihoods and diluting the quality of the overall supply. The central government's efforts to reduce theft have largely failed to stem the threat, leaving farmers largely on their own to protect their fields. In addition to organizing militias that patrol fields, enact curfews, and at times hand out justice themselves, farmers also sleep in their fields from February to July, set traps to snarl would be thieves, and carry firearms and other weapons. These 'reliable eyes' groups have age limits to join, mandatory retirement, and training programs, with very little government assistance. This paper argues that such non-actor securitization, as illustrated by the reliable eyes, will continue to grow as climate change destabilizes commodity markets and national governments struggle to respond adequately to emerging security threats, creating the conditions where citizens increase their 'security labor' and take on additional roles and labor altering their relationship with the state and their communities. These changes in social contact represent a significant shift and change in the political landscape. This study is based on 12 interviews with Malagasy Vanilla farmers and traders conducted in 2024.

Keywords: Labor, Security Labor, Madagascar, Vanilla Farmers

Innovating in research approaches to support sustainable mechanization in Africa.

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Agricultural mechanization (including animal traction) and motorization improve labor productivity and reduce the arduousness of agricultural work. However, mechanization levels in sub-Saharan Africa are low. Over the past decade there has been renewed interest among decision-makers and researchers in these issues. The challenge is not to repeat the mistakes of past initiatives and to contribute to sustainable mechanization that is appropriate for diversified African farms.

In Africa, existing research is fragmented and partial, and primarily concerns annual crops, tillage with tractors or post-harvest operations. Studies of the changes occurring on farms and of effects on the social, economic and environmental dimensions of farming systems are sparse. Neither has there been much work on training and advisory systems in the use and maintenance of equipment, though that is crucial for extending the lifespan of equipment and limiting negative environmental impacts.

The goal of this article is to highlight research approaches that could help to document and shape the current dynamics of agricultural mechanization and the interventions supporting its deployment in a sustainable manner. We draw from the MecaWAT project (2023-2025) that focused on the sustainable mechanization of cropping operations in Côte d'Ivoire, Ghana and Benin.

We highlight three main research approaches:

First, the co-design of equipment and cropping systems allows to propose equipment compatible with agroecological principles and adapted to the realities faced by farmers. Some criteria, such as discomfort, are difficult to measure but are very important to users (vibrations, noise, smoke, etc.), as are the access to training, or accessibility to spare parts and competent mechanics. A co-design approach involving farmer groups and local craftsmen was implemented in the 3 countries, and resulted in equipment validated with the farmers and tested in agronomic trials.

Second, approaches on work organization (Hostiou and Dedieu 2012) are relevant to study the effects of agricultural mechanization on farm organization. Findings indicate that mechanization can increase or decrease the use of hired or family labor according to the context. Partial mechanization (like tillage and sowing in cotton-growing areas) creates new labor bottlenecks, worsened by the increase in cropped areas that mechanized tillage allows.

Third, action research with stakeholders strengthens the sustainability of mechanization deployment. Support services and policies play a central role in mechanization dynamics, and equipment quickly falls into disuse when the services needed to sustain mechanization are lacking for the access to equipment, its use and maintenance. In Ghana and Benin, the launch of innovation platforms, i.e. spaces for exchanges between the various stakeholders involved in mechanization, has made it possible to provide support to these networks of actors and increase the exchange of information.

Keywords: motorization, work organization, action research, co-design, innovation platform

Behind the Promises of Youth Agricultural Entrepreneurship: Evidence from Côte d'Ivoire

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In West Africa, agricultural policies increasingly frame youth employment through employability and agricultural entrepreneurship, presenting self-employment as a pathway to decent work. This paper questions the capacity of such approaches to produce socially stabilised forms of agricultural work, understood as forms of activity whose conditions of production and reproduction are institutionally secured over time.

Drawing on empirical evidence from Côte d'Ivoire, this communication focuses on the Youth Employment Program of the Béliér Agro-industrial Pole (2PAI-Béliér), a flagship agropole initiative implemented under the ECOWAP framework. Based on a mixed-methods research design combining a field survey of 140 program beneficiaries with semi-structured interviews conducted in 2024 with different stakeholders involved in the program, the study examines how training, incubation and access to productive resources shape young people's trajectories into agricultural activity.

To move beyond a narrow employment-centred perspective, the paper draw on the Regulation Theory by mobilising the concept of income-labour nexus, to analyse agricultural work in contexts where wage employment remains marginal. This conceptual framework conceptualizes agricultural insertion not as simple entry into activity, but as a configuration of institutional, material and social conditions that sustain the reproduction of workers over time.

The findings show that participation in the program is associated with a statistically significant increase in agricultural activity for these young people. However, insertion occurs almost exclusively through individual self-employment and remains highly uneven. Sustained post-program activity is largely explained by prior engagement in agriculture and access to financial resources, while training and incubation alone do not significantly ensure durable insertion. Persistent constraints in access to land and equipment further limit productive capacity and undermine economic viability.

These findings point to a structural dissociation between activity and employment. Although young people are mobilized and encouraged to engage in agricultural projects, the lack of secure access to productive resources and strong institutions results into incomplete income-labour nexus and precarious forms of work. Consequently, rather than fostering decent agricultural employment, the program reinforces pre-existing trajectories and transfers economic risk to individuals.

The paper contributes to on-going debates on labour in African agri-food models by providing empirically evidence of the limitations of entrepreneurship-centred youth employment policies and by advancing the income-labour nexus as an analytical lens to rethink decent work beyond wage-employment nexus.

Keywords: Youth employment ; Agricultural entrepreneurship ; Income–labour nexus ; Agri-food models in Africa ; Agricultural policy

Large-scale agricultural investments, jobs, and land relations: what does it tell us for regional development perspective. The case of the maize sector, Bono East region, Ghana

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Ghana's agricultural development policy is largely grounded in the modernization paradigm embodied in the Green Revolution model, with successive programmes seeking to address simultaneously the challenges of food security and employment. The Bono East Region, located in the transitional agro-ecological zone and known as part of the country's food basket, is particularly significant given its potential role in the development and industrialisation of the agri-food sector. Although agriculture in Bono East remains predominantly organised around family farming, medium-scale farmers and large-scale agribusinesses have increased in recent years. However, in contrast to the foreign, export-oriented large-scale agricultural investments (LSAIs)—largely focused on *jatropha*—that emerged in Ghana following the post-2008 “land rush” and have since declined, the growing investments in the maize sector in Bono East, a staple crop for food security and a long-standing pillar of Ghanaian agriculture, holds greater potential for endogenous development.

In this context, and contributing to continuous debates on the impacts of large-scale agriculture investments on job creation and rural livelihoods in Africa, this paper examines how the rise of large-scale investments in the maize sector in Ghana's Bono East Region is reshaping labour and land relations, thereby reorienting perspectives of agrarian development.

Adopting a political economy perspective on labour and land relations, and drawing on mixed qualitative and quantitative data collected from a substantial sample of large-scale maize corporate farms and their workers, the paper is structured in three parts.

First, the paper situates the emergence of LSAIs within Ghana's broader agrarian and policy context, tracing the evolution of maize-oriented LSAIs in Bono East over the past decade. It outlines the key characteristics of these investments, including the socio-economic profiles of farm owners, the institutional conditions underpinning their settlement and development, and their differentiated endowments in land, labour, and capital.

Second, the analysis examines the scope of employment generated by these corporate farms, in terms of the number and type of jobs created and in comparison with family farming systems. Particular attention is paid to job quality, highlighting disparities and deficits in decent working conditions across permanent and casual employment, as well as along lines of age, gender, and workers' geographic origins.

Finally, the paper discusses the territorial implications of maize-sector LSAIs. It especially looks to what extent corporate farms contribute to land concentration and affect land access and land use for family farmers, generate indirect jobs through backward and forward linkages, and influence regional labour markets dynamics. Taken together, these findings provide insights regarding the implications for job-rich agricultural and employment policies in Ghana.

Keywords: Large-scale Agriculture Investments, jobs, land, regional development, Ghana

Agricultural Production Collectivities and Youth Employment in Northern Ghana

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Despite the downsides of employment in Ghana's private sector including poor wages and the 'casualisation of labour', many youth continue to rely on it for employment. In Northern Ghana which is characterized by poor infrastructural facilities compounded with single rainfall patterns, youth migration is common as rural youth migrate to the south in such of so-called factory jobs. This has caused what others have described as a 'generational problem' in smallholder farming - where older farmers are ageing and the youth are uninterested in taking over the farm. However, in recent times, the phenomenon is changing as failed promises of the 'good life' from these jobs is triggering a re-return 'home' to explore existing opportunities in Agriculture. Recent scholarship has highlighted the agrarian changes taking place in Northern Ghana including expansion in farm sizes, increased participation of young men and women in Agriculture, and the gradual transition from subsistence to commercial farming. The areas in which this transformation is occurring are places with state-initiated Agricultural projects such as irrigation schemes and well-developed rice valleys. While these projects have existed since colonial times, self-organizing strategies by young people in recent times have contributed to these outcomes. Through case studies of the Tono irrigation project and the Fumbisi rice valleys, the study shows how youth agricultural production collectivities have shaped youth employment in Agriculture in more sustainable ways. Rather than relying on wage labour employment, these collectives have contributed to securing own farms, reduced cost of labour through reciprocal labour exchanges as well as raising capital through village savings and loans. These initiatives are producing more sustainable, independent youth employment opportunities in the Agri-food sector. While these outcomes are not rapid, the strengthening of self-organizing initiatives and the development of state Agricultural projects could constitute an alternative to wage labour employment which has proven to be unsustainable.

Keywords: Agricultural collectivities, youth employment, Northern Ghana, Tono irrigation scheme, Fumbisi rice valleys

Histories of technologies: Labour, Work and Agricultural Revolution in Ghana's Rice Sector

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Recent transformations in agricultural production triggered by changing patterns of labour, technology, and finance are changing rural livelihoods across the Global South. The transformations represent a reversal of declining food production since the advent of the structural adjustment programmes and have phenomenal implications for food sovereignty in the Global South. Focusing on the role agricultural technologies, this paper examines the history of the rice sector in Ghana and traces changing labour dynamics in one of the most important rice producing regions in southern Ghana. We draw on qualitative data conducted in the rice producing communities in the Ketu North Municipality in the Volta region of Ghana. Anchored on the Weta/ Afife irrigation projects with two dams Klikpa and Ganle dams built by the Russia and China in the 1960s, the area remains a centre of technology deployment in the rice sector. We find that over the past decade and a half, easy access to cheap Chinese technologies for land tillage, harvesting, and milling has led to an expansion in rice cultivation, especially for women who has previously found the cost of production too prohibitive. However, in the context of market-oriented agricultural policies, the boom in rice cultivation is leading to indebtedness and widening inequality in farming communities.

Keywords: Ghana, rice, labour, agricultural technologies, women

Balancing Sustainability and Inclusion: The EUDR and Ghana's Cocoa Smallholders

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The European Union Deforestation Regulation (EUDR), adopted in 2023, aims to eliminate deforestation from global supply chains of forest-risk commodities, including cocoa. Cocoa production is a major driver of agrocommodity-related deforestation, and Ghana exhibits the highest share, estimated at around 70% among cocoa-producing countries. As the European Union imports approximately 60% of global cocoa, Ghana's compliance with EUDR requirements, particularly traceability, has become a central policy and governance challenge.

This paper examines the compatibility of the EUDR with the socio-economic realities of Ghana's cocoa-based agri-food model, where cocoa remains a key source of employment and income for an estimated 800,000 smallholder households. Despite its centrality in rural livelihoods and territorial economies, Ghanaian cocoa farmers capture only 6.6% of the total value added along the global cocoa value chain. Using a governance perspective, the study analyses how the EUDR interacts with existing power asymmetries, institutional arrangements, and historical legacies of coloniality shaping labour relations and value distribution in the cocoa sector.

Empirically, the paper draws on a case study of Akyemansa District, a territory characterised by the coexistence of cocoa farming, forest reserves, and competing land uses. Data were collected through 39 semi-structured interviews with farmers, state actors, NGOs, and sector experts, and analysed using a hybrid thematic approach. Findings reveal significant tensions between regulatory demands and local production conditions. Inadequate infrastructure, limited access to inputs and extension services, and the practical difficulties of segregating cocoa beans at the farm level constrain traceability efforts. These constraints risk increasing compliance costs borne by smallholders, potentially affecting labour conditions, farm viability, and access to markets.

Moreover, external pressures such as artisanal and small-scale gold mining (ASGM) and increasingly exclusionary purchasing practices may further marginalise smallholder farmers and deepen territorial inequalities. The paper argues that, without integrated policies addressing labour, livelihoods, and environmental sustainability, the EUDR risks reinforcing existing vulnerabilities within cocoa-based agri-food models. The findings contribute to debates on decent work, agri-food model transformation, and the need for territorially grounded policy approaches linking forest conservation with sustainable employment in African agriculture.

Keywords: European Union Deforestation Regulation (EUDR), Cocoa value chain, Smallholder farmers, Traceability, Ghana

Drivers of the labour content in agricultural production systems. Insights from Ghana

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Each year, growing numbers of young people enter the labor market in sub-Saharan Africa, while industrial jobs expand slowly. In this context, the agri-food sector remains the main source of employment in these economies, within which farms are the first job providers. However, their ability to provide high number of jobs, that are also attractive and decent, is increasingly in question, in particular when agricultural intensification processes are ongoing and promoted by agricultural public policies and research innovation systems.

This purpose of this communication is to look at the drivers of the labour content in agricultural production systems drawing on survey implemented in Ghana. An agricultural production system is comprises the farm structure and the set of agricultural practices that producers mobilize to transform land, capital, and labour into useful products that can be consumed or sold. The labour content of agriculture is examined across multiple dimensions: total number of agricultural Full-Time Equivalents (FTE), labour intensity (number of agricultural FTEs per hectare), division of labour and working conditions (employment conditions, safety and health, social protection). The hypothesis is that several factors can influence the labour content: household resources, agricultural practices or product marketing conditions.

This paper draws on data from the JobAgri survey, which was conducted among 950 farming households, 26 corporate farms, and 550 farmworkers in Ghana's Bono-East region between November 2024 and December 2025. The survey's design enables the reconstruction of time allocation across different categories of workers (family/wage, men/women, youth) over one year. Three rounds of data collection enabled to reduce data bias due to long recall periods. Using this data, we develop a typology of agricultural production systems and assess the labour content requirements of each type.

Our findings show that the vast majority of farms' jobs are generated not by large corporate farms or large family businesses, but by medium-scale family farms, followed by small-scale farms. Family labour remains predominant, but casual workers represent a substantial contribution. The latter are often in charge of the most physical tasks involving awkward postures. Finally, labour remuneration reveals a pronounced gender wage gap among casual workers, with women earning less than men, although this gap varies strongly by crop and task.

This paper contributes to the debate on two key points. First, it provides new insights into the types of farms most likely to offer decent jobs and informs public policy on farm-level interventions. Second, from a research and methodological perspective, it introduces an innovative approach to capturing job quality at the farm level and discuss it according to the categories of workers.

Keywords: Africa, Agricultural production systems, Labour content, Working conditions

Trading as a Major Source of Employment in Food Value Chains: Evidence from Ghana's Maize Sector

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Given Africa's rapid demographic growth and limited industrialization, the agri-food sector is expected to provide millions of jobs in the coming decades. While several export- and domestic-oriented food value chains on the continent are undergoing transformation—characterized by technological upgrading, scale expansion, and increased vertical coordination—there is still limited empirical evidence on the extent to which non-farm segments of these value chains generate employment, and for whom.

This paper examines the labour content and work organization across different segments and actors of food value chains, focusing on the maize value chain in Ghana, which encompasses a wide diversity of actors in terms of scale and technology. A sample of 665 value chain businesses was randomly selected after stratification by value chain segment (agro-input supply, processing, trading, and transportation) and scale of activity. Each business was surveyed twice over the course of one year to generate accurate data on working time, worker characteristics and wages, and transaction volumes.

The results highlight the substantial contribution of trading activities to job creation. Using full-time equivalent employment as the main indicator, we find that wholesalers—and to a lesser extent agro-input dealers and aggregators—provide the highest number of jobs per non-farm business along the value chain. This is particularly evident among large wholesalers, which handle high product volumes while remaining highly labour-intensive. In collector, wholesaler, retailer, and agro-input dealer businesses, the majority of working time is performed by young men employed under casual, task-based contracts, mainly for loading and offloading tasks. These workers account for 80–90% of total working time in large wholesaler, agro-input dealer, and collector businesses, whereas the share of permanent workers is higher in smaller firms.

In contrast, in the processing segment, between 78% and 88% of total working time—across all business scales—is carried out by permanent workers, predominantly men. The results also emphasize the important role of small and medium retail businesses in women's employment: in the smallest retail businesses, women account for about 75% of total working time under permanent contracts. Daily earnings are broadly similar across value chain segments; however, casual workers receive slightly higher average wages (110 GHC/day) than permanent workers (100 GHC/day). Moreover, small-scale businesses tend to pay slightly higher wages to permanent female workers than to men, while medium- and large-scale businesses tend to pay higher wages to permanent male workers.

The paper concludes that trading activities are major providers of non-farm employment in the agri-food sector, particularly for young men and for women. Agrifood and employment policies should therefore recognize and support these activities, given their significant contribution to labour absorption along food value chains.

Keywords: Value chain, food, africa, labour, work

From Family Labor to Permanent Wage Work: Farm Workload and Social Sustainability in Algerian Agriculture

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In many developing countries, agriculture remains predominantly family-based. However, a gradual shift toward increased reliance on salaried labor is underway, following trajectories previously observed in several developed countries. In France, for instance, this transition has been accompanied by profound structural changes, including farm enlargement, land concentration, and a decline in the number of farm workers. The reduction of family labor and the rise of non-family farm succession have reshaped work organization, leading to higher workloads for remaining family workers and a growing search for flexibility in labor allocation. In this context, the social sustainability of agricultural work has become a key issue, while existing workload indicators remain heterogeneous and often insufficient to capture actual working conditions.

To analyze these dynamics in Algeria, this study focuses on a semi-arid region located approximately 268 km east of Algiers, characterized by increasing pedoclimatic constraints and predominantly rainfed agriculture. Farms in this region adopt diversification strategies to stabilize income while seeking greater labor flexibility. The analysis is based on a longitudinal survey of 60 farms monitored over four cropping seasons (2019–2022), covering cultivated areas ranging from 2,183 to 2,309 ha. Cropping systems are largely dominated by cereals, accounting for more than 85% of the total area, with durum wheat representing over 80%. The share of forage legumes declined from 6.5% to 4.8%, while cereal–forage associations decreased from 5% to 2%. Vegetable crops remained marginal and stable at around 3%.

Results show a relatively stable overall labor structure but reveal a clear consolidation of permanent salaried labor, which accounts for 39.8% to 41.1% of total annual working hours (326,366 to 321,624 hours). This trend indicates a growing dependence on permanent wage labor to ensure task continuity and cope with seasonal peaks and system diversification. Family full-time labor remains central (42–44%), while seasonal wage labor represents about 14%, mainly mobilized during sowing and post-harvest periods. Workload analysis reveals high labor pressure: compared to the reference threshold of 1,800 hours per full-time worker per year, workloads exceed this level in 31 farms for family labor (by 2.2% to 59.6%) and in 25 farms for permanent salaried workers (by 5.8% to 59.6%), particularly in mixed crop–livestock systems.

These findings raise important questions regarding the social sustainability of farming systems under increasing climatic and structural constraints. They highlight the need for more integrated workload assessment tools capable of capturing actual work rhythms, labor arrangements, ergonomic conditions, and productivity. Incorporating such analyses into farm-level social sustainability indicators (e.g., workload-based SIW) would provide a more accurate understanding of decent work conditions and future pathways for farming systems.

Keywords: Farm workload, Permanent labor, Family labor, Labor organization, Semi-arid agriculture

Drivers of decent jobs in mango and cashew processing SMEs in West Africa

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This communication examines the quality of jobs in agri-food processing small and medium-sized enterprises (SMEs) in West Africa, drawing on an original survey of 1,007 workers across mango and cashew processing units in Burkina Faso and Senegal. Grounded in the ILO's decent work framework, it employs Multiple Correspondence Analysis and hierarchical clustering to construct a typology of decent jobs, followed by multinomial probit regression to identify its determinants. The analysis reveals four distinct decent work profiles: permanent risky but protected jobs, temporary arduous informal jobs, temporary informal non-risky well-paid jobs, and unremunerated diversified jobs in groupements. None of these jobs simultaneously combines stable employment, adequate remuneration, safe working conditions, and social protection. Decent work thus emerges as a multidimensional concept characterized by trade-offs rather than a linear continuum. Multinomial regression results identify vocational training and education as key individual-level drivers of access to more stable or protected employment. At the firm level, access to international markets and higher revenues are associated with greater employment formalization, while female managerial leadership correlates with better working conditions. Sectoral and country-level differences further shape decent work outcomes. These findings call for integrated policies combining investment in vocational training, stronger labor regulation, and gender-responsive SME support to promote decent work in West African agri-food value chains.

Keywords: decent work, agri-food processing, SMEs, West Africa, vocational training, multinomial probit, Burkina Faso, Senegal

Working Group 11: Coping with Work Constraints within Complex Crop / Livestock Systems in the African Farming Sector

Convenors: Mohamed Taher Sraïri (Hassan II Agronomy and Veterinary Medicine Institute, Rabat, Morocco), Nathalie Hostiou (INRAE, France), Teatske Bakker (CIRAD at University of Parakou, Bénin)

This working group focuses on the actual uses of work in the African agricultural sector and its perspectives. It aims to bring researchers interested in the African agricultural sector to present updated knowledge on work uses. Presentations will be particularly focused on methods and results assessing work uses, work organization, such as the 'Work Balance' or 'QuaeWork' methods. Case studies should encompass situations from North Africa or sub-Saharan Africa. Analyses will focus on work efficiency and remuneration. Studies distinguishing the nature of the workers involved in agricultural activities (whether from family of the farmers or hired) are also encouraged.

Assessing workload and its remuneration in various family based smallholder complex crop/livestock systems in Morocco

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This study is focused on the work uses and their effective remuneration in family smallholder crop/livestock systems in various agro-ecological areas in Morocco (rain-fed regions, mountain oases and date palm oases). The 'Work Balance' method was used to evaluate the annual uses for routine (i.e. livestock daily tasks) and seasonal (i.e. interventions to grow and harvest crops) work, and the persons involved in these activities (family members or hired workers). The follow-up of cropping as well as livestock practices allowed determining the amounts and the expenses related to inputs' uses as well as sales of agricultural products. The economic productivity of family members' work was then calculated, by determining the gross margin realized for both crops and livestock and dividing it by the amount of work. The results emphasize the important loads of family work needed for livestock (an average of 68.4 days per Livestock Unit – LU – per year), as the animals are seldom reared by hired workers. They also show that livestock incomes can make up to 80% of total farms' incomes, since many farms do not hold significant financial assets to ensure the profitability of crops. In fact, in a context characterized by and acute water scarcity, crop failures may be frequent, unless irrigation means are available. The analysis also shows that in farms with enough financial means, crops are often relying on hired workers, particularly in times of work peaks (i.e. when the available family workforce is not sufficient), like during cereals' sowing, or harvests and marketing of products (as for dates, which are vital in the oases for farm incomes). Our results also indicate an average work daily remuneration in livestock often below the minimal guaranteed wage in agriculture (around 9 Euros per day), emphasizing a limited attractiveness of these activities, mainly for youth, prompting frequent rural exodus and the search for off-farm incomes. They also highlight the crucial participation of women in the agricultural work, as they assume vital roles in livestock production, in addition to their implication in households' maintenance. By contrast, the daily remuneration of work in cropping activities is more variable, but it can sometimes exceed the guaranteed wage in agriculture. Altogether, our studies confirm the utmost complexity of work organization in farming systems, dominated by smallholders who cope with various constraints like an acute water scarcity exacerbated by climate change effects, and increasing prices volatility. Diversifying the activities by coupling crops and livestock remains vital for both livelihoods and territorial maintenance (creating conditions for a circular bio-economy), but it certainly requires more involvement of workers. This can only be achieved by targeted extension efforts directed to decrease workloads and increase crops' and livestock profitability, relying on local references generated from research programs.

Keywords: Crop/Livestock farms, Incomes, Morocco, Work Balance method, Youth

Studying farmers' practices and work organization in plantain farms in West Africa

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In West Africa, plantain is an important crop for food security due to its high calorie and nutrient content. Demand for plantains is rising, but current production is insufficient to meet demand as farmers are faced with a series of biotic, abiotic and socio-economic constraints.

Plantain is often considered a small-scale family crop for self-consumption. However, little information is available on farmers' agricultural practices and their farms' functioning, particularly with regard to the structure and organization of the workforce and the use of mechanized equipment.

In this study, we conducted a cross-sectional analysis across three West African countries—Côte d'Ivoire, Benin, and Ghana—to describe the diversity of production constraints based on labor management and the level of mechanization of plantain-based farms. We used the Quaework method developed by Hostiou and Dedieu (2012) to study work organization and farm functioning, by identifying the tasks, the workers who perform them and the calendars. 117 farmers were interviewed (44 in Benin, 45 in Côte d'Ivoire and 38 in Ghana).

Our results show that plantain farms are diversified, and that the image of plantain as resilient crop grown for self-consumption and tended by family workers is no longer true. Plantain production systems are varied and often complex, ranging from small-scale subsistence farming to more intensive plantations. Farms relying on the delegation of work (more than 70% of tasks done by wage workers) were a majority in Benin (67%) and Ghana (76%). Family farms (at least 50% of tasks done by family workers) represented 67% of the farms in Ivory Coast.

Temporary workers perform a significant portion of the agricultural work, whether at the plantain level or across the entire farm. Indeed, during peak periods, labor is mobilized primarily for more lucrative crops (cassava, cocoa, coffee), leading to a shortage of workers for crucial plantain operations (such as weeding, staking, or harvesting). Farmers resort to temporary wage workers, as this allows more flexibility to adapt the workforce to the seasonal workloads, but their availability is unstable and unpredictable, leading to difficulties to respect agricultural calendars.

Mechanization is low and partial and accessed mostly through service provision, except for harvesting and transportation. The most time-consuming operations in plantain are plot preparation, weed management, planting and harvesting, which are mostly manual (with the exception of tractor use for plot preparation in Ghana).

Applied to plantain farms, research on work organization could help to understand plantain production practices, for example identifying labor bottlenecks at the farm scale or the constraints to the adoption of agroecological practices. We also discuss the opportunities and barriers to mechanization in plantain farms and identify research perspectives.

Keywords: labor, mechanization, practices, Ghana, Benin, Côte d'Ivoire

Work organization in complex crop-livestock systems : the case of rice-fish farming in Africa

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Rice-fish farming is an Asian model that can improve both rice and fish production, resulting in positive impacts for food security as rice is a major staple food and fish a nutritional and affordable source of protein. Two notable initiatives seem to be spreading in Madagascar and Guinea.

Rice-fish farming systems are complex crop-livestock systems. They are also highly heterogeneous within a given territory. One of the obstacles to optimizing the rice-fish system lies in understanding how farmers operate and organize their work, including regarding to gendered labor division.

In light of this context, the study explores the complexity of work management and the common work organization patterns of rice-fish farming, including with a gender-sensitive analysis of the distribution of tasks and decisions.

We developed a methodology to monitor the plot management sequence of rice-fish systems and tracked the tasks accomplished, the workforce mobilized (family workers, mutual aid groups or wage workers), and the decision-making process. The data was collected from 16 volunteer rice-fish farmers in Guinea and 42 in Madagascar between 2022 and 2025.

Our results indicate that rice-fish farming in Guinea and Madagascar are complex because farmers manage different production calendars (fish, rice) and biological cycles (water, nitrogen) simultaneously. They optimize production by combining different fish species to utilize multiple trophic niches, selecting rice varieties adapted to varying water depths, and adjusting fish feeding and rice-fish fertilization (e.g., rice bran, manure, urea).

The analysis of the work organization shows that while rice remains the priority production for most farmers, fish management (fry production and grow out) takes a lot of time. Fish management tasks rely heavily on family workers (in Madagascar) and on collective labor (mutual aid groups in Guinea) whereas wage workers are often employed for rice cropping.

Lastly, in Madagascar, women take part in routine fish management tasks (feeding and surveillance) but less so in technical tasks such as irrigation management, sexing and fish stocking. The decision-making is mostly done by men alone, sometimes with advice from their spouse, depending on the task.

Studying work in complex systems such as rice-fish farming systems could provide insights for other complex systems, especially considering that agroecological systems often increase complexity. Our results show that farmers need specific skills to deal with this complex management, which are mobilized in family workforce and specialized mutual aid groups rather than wage workers, but not systematically shared with women. Climate change, especially the delayed start of the raining season, might require farmers to acquire more adaptation skills in the future to manage adaptations in the three calendars (water, rice and fish) that they manage simultaneously.

Keywords: Aquaculture, agroecology, labor, work calendar, Sub-Saharan Africa

Work organization related to intensification practices on rice farming systems in Ghana

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In a context where the agri-food sector remains a major source of employment in sub-Saharan Africa, understanding how intensification reshapes labor demand, task distribution, and gender roles is crucial. Focusing on mechanization, irrigation, and herbicide use, the paper adopts a farming system approach to examine work organization at the farm level rather than at the level of individual tasks. This study analyzes how agricultural intensification practices affect work organization in rice farming systems in Eastern Ghana.

The research was conducted in five districts across the Volta and Greater Accra regions, encompassing both irrigated and rainfed rice systems. 40 farms were selected for in-depth analysis of work organization using the QuaeWork method, which documents annual work duration and the distribution of tasks among different categories of workers (family, permanent, temporary, contractors), with attention to gender.

Results show substantial heterogeneity in work organization across farms. Seasonal work dominates labor demand, with rice accounting for most working time. While mechanization reduces labor requirements per hectare, it increases reliance on temporary workers and service providers. Irrigation raises overall labor demand due to multiple production cycles, and herbicide use reduces weeding labor while shifting tasks toward male hired workers.

Multivariate analysis identifies three distinct work organization strategies: (1) medium-scale rainfed farms combining family and hired labor with low intensification; (2) small-scale irrigated and mechanized farms relying mainly on family labor and service providers; and (3) larger, more intensified farms heavily dependent on temporary hired labor. These strategies differ markedly in labor distribution and gender involvement, with intensified and larger farms showing lower participation of women.

The study concludes that rice intensification fundamentally reshapes work organization and is not gender neutral. It highlights the need for systemic assessments of agricultural innovation that account for interactions between tasks, technologies, workforce composition, and gendered labor dynamics across the entire farming calendar.

Keywords: work organization, intensification, rice, Ghana, on-farm study

The effect of sickness on family labor supply and crop productivity in Africa: Panel data evidence from Ethiopia

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The success of a food system largely depends on the success of agricultural supply, which largely depends on productivity. Even though, African Agriculture is improving in terms of productivity per hectare, yet it remains low. Several factors are responsible for this. Among others, the use of input technology such as fertilizer, improved seeds, and agrochemicals is limited. Moreover, the rate of mechanization of African agriculture is extremely low. For example, a preliminary analysis of household survey data indicates that in Ethiopia farmers used mechanization only on 5.3% of their plots, with a slight increase from 3.1% of usage before seven years. Lack of mechanization is not the only challenge. In addition to the limited mechanization, the family labor supply is affected by the sickness of family members. With the objective of looking into the effect of sickness on labor supply and crop productivity, the study applied descriptive and econometric analysis of panel data collected from Ethiopia in 2017 & 2024 with the interview of 8,951 households from 126 districts. The descriptive analysis shows that: (1) in line with the health theory, the sickness of household members is highest during weeding and harvesting. During these periods, the stress is higher, where their immunity could be too low to resist disease. (2) The average number of sick male, female, and children during all farm activities is 2.48, 2.49, & 3.21 respectively in 2017, and this declined to 2.3, 2.1, & 2.0 again respectively in 2024. (3) The average number of lost days due to sickness is higher in male than female members, i.e. during 2017, the average days of sickness in adult men, women, and children were 28.1, 25.1, and 14.7 days respectively per year. (4) Sickness during farm activities of male and female sharply decreased over the seven year period to 15.5 and 16.0 days respectively, but that of children increased to 20.5 days per year. (5) The decreasing average days of sickness in male members is due to decreasing sickness during harvesting, threshing, and transporting, but increased days of sickness before harvesting. (6) The regional variations over time has similar pattern in male and female sick members, but the number of sick children increased in regions. (7) The econometric estimation of the effect of sickness on crop productivity, measured by crop yield index aggregated by household, has significant effect on crop productivity. Following the existing findings, it is advisable to encourage the use of farm machinery and strengthen the health extension system to make working in the food system attractive, and curb the negative effect of sickness on crop productivity. Encouraging farm machinery use could not only enhance productivity and overcome supply-side constraint in African food system, but also decrease child labor and leverage children education.

Keywords: Food system, Farm households, family labor, health, panel data, Africa

Impact de la mécanisation sur l'emploi et les conditions de travail dans les exploitations rizicoles en transition agroécologique : le cas du lac de Guiers

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La transition agroécologique au Sénégal, particulièrement dans la zone du Lac de Guiers, se heurte au paradoxe de la « pénibilité accrue ». Le passage à des modèles exigeants, tels que le Système de Riziculture Intensive (SRI), augmente drastiquement les besoins en main-d'œuvre, créant un véritable goulot d'étranglement social (Dumont et al., 2021). Dans ce contexte, la mécanisation transforme profondément l'organisation du travail. Elle réduit significativement la charge horaire des femmes et améliore leur état de santé grâce à l'automatisation des tâches post-récolte (Kansiime et al., 2019). Par ailleurs, la « petite mécanisation » (motoculteurs, semoirs de précision) s'affirme comme un levier clé de la transition en facilitant des pratiques telles que le semis direct et la gestion fine de la biomasse, tout en respectant les principes de l'intensification durable (Zossou et al., 2021). Cet article analyse l'influence de cette mécanisation sur l'emploi agricole et la qualité de vie au travail des riziculteurs du Lac de Guiers. En s'appuyant sur des enquêtes de terrain, l'étude explore si la machine se substitue à l'homme ou si elle complète les pratiques agroécologiques intensives en main-d'œuvre. En utilisant le modèle de sélection de Heckman, les résultats démontrent que la mécanisation ne se substitue pas à la main-d'œuvre. Au contraire, elle transforme la nature de l'emploi en améliorant significativement les conditions de travail, tout en atténuant les risques sanitaires majeurs tels que la bilharziose et les troubles musculo-squelettiques (AfricaRice, 2022 ; Pingali, 2007). Ces résultats invitent les pouvoirs publics à promouvoir une « mécanisation raisonnée » en priorisant l'équipement post-récolte pour alléger la double charge productive et domestique des femmes. Réduire cette pénibilité constitue un levier stratégique pour renforcer le capital humain et le niveau d'éducation au sein des ménages ruraux.

Keywords: Transition agroécologique, emploi agricole, riziculture, Mécanisation, Pénibilité du travail, Le lac de Guiers.

Working Group 12: Soziale Dynamiken und Nachhaltigkeit als Motor neuer Arbeitsprozesse

Convenors: Elisabeth Quendler (BOKU University, Austria), Katja Heitkämper (Agroscope, Switzerland)

Diese Arbeitsgruppe beleuchtet aktuelle Herausforderungen und Transformationsprozesse in der Landwirtschaft an der Schnittstelle von Bildung, Technik, Digitalisierung und Ökologie. Arbeitsprozesse, Arbeitsbedingungen sowie betriebliche und gesellschaftliche Rahmenbedingungen aber auch Qualifikationsanforderungen in der Landwirtschaft stehen im Mittelpunkt. Neue Ansprüche an das Management hinsichtlich Organisation und Umsetzung im Hinblick auf Gesundheit und Personensicherheit bei der Arbeit, aber auch die Inanspruchnahme von Dienstleistung und deren erfolgreiche Einbindung in betriebliche Abläufe aus soziotechnischer und rechtlicher Sicht, sollen diskutiert werden. Diese Arbeitsgruppe wird auf Deutsch durchgeführt.

Co-Farming - Agricultural Incubator

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Many people can imagine entering the agricultural sector and pursuing a professional activity that is closely connected to nature. However, they rarely have access to suitable land and the necessary infrastructure to gain hands-on, independent experience before taking the step into self-employment.

Our idea: Co-Farming - Agricultural Incubator.

The co-farming program is an agricultural incubator program that supports aspiring vegetable growers on their path to establishing their own farm business. The Tiny Farms Academy provides agricultural test plots, tools, and farm inputs, enabling career changers to gain hands-on growing experience independently. In addition to providing infrastructure, it offers regular technical advice and personal mentoring. This holistic program thus enables career changers to test their knowledge in practice and further refine their gardening project. Successful incubator farms in France, Belgium, Austria, Spain, and Germany have already demonstrated the potential of such models.

Research

In Q4 2025, a feasibility study was conducted in collaboration with the Research Institute of Organic Agriculture (FiBL) to identify the strengths and potential gaps of the program. The study also examined whether the concept could be transferred to Switzerland and whether there is sufficient demand.

Findings and Next Steps

The results of the study speak in favor of implementing the program and the team is now moving forward with its development. The implementation in Switzerland will focus on enabling part-time workloads for people with prior experience in vegetable growing or relevant expertise gained through previous work experience.

About our Organisation:

We run three market gardens (in Hamburg, Berlin, and Zurich) and offer several educational programs to enable people without an agricultural background to find their way into small-scale gardening. With our diverse range of education offerings, we reach people with different backgrounds and goals. We have extensively been working on and with career changers, on part-time workloads, and new working models in agriculture. Currently developing the project "Co-Farming" in Switzerland, we want to build bridges with research.

Keywords: Incubator, New Farming, Career Change, Small-Scale Farming

Farm visit groups and farm kindergartens as an educational model: the legal, institutional, and safety barriers for preschool children in Austria

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Farms offer a wide range of opportunities to have a positive influence on children at a young age. On the other hand, farms also pose certain dangers. This master thesis aims to show how the positive effects of nature education on farms can be used for educational purposes while minimizing the risk of injury. In Austria, no further qualitative work has yet been done on this topic in combination with a legal analysis of how this form of childcare is anchored in our legal system. First, a detailed literature review was conducted to examine the positive effects of farms and the surrounding environment on preschool-aged children. Subsequently, a legal analysis was conducted to examine how the farm school education model is legally anchored in Austria and what the limiting factors are for implementing a similar state-subsidized childcare option for preschool children. In a third step, seven qualitative interviews were conducted until information saturation was reached, with the five farm kindergartens that currently exist in Austria, as well as two farms that already welcome preschool-age groups to offer children in regular kindergartens a form of nature education. The interviews were transcribed and evaluated using Mayring's qualitative content analysis, after which the data was statistically evaluated and compared with the literature research. This approach made it possible to lay the groundwork for identifying what already exists in Austria in terms of nature-based education for preschool children and what still needs to be developed to make a form of nature education that is unique and diverse on farms accessible to the public.

Keywords: Social Farming, Nature based Education, Farm kindergarten, Farm visit groups, Child Safety

Einfluss der Wiedervernässung auf Trittsicherheit und Befahrbarkeit von Moorweideflächen

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Um Treibhausgasemissionen aus entwässerten, landwirtschaftlich genutzten Moorflächen zu reduzieren oder zu vermeiden, gibt es zahlreiche Bestrebungen, diese zu vernässen und im wiedervernässten Zustand weiterhin landwirtschaftlich zu nutzen. Dies betrifft in der Projektregion Ostallgäu vor allem Grünlandflächen, die auch im nassen Zustand für eine extensive Futterproduktion oder als Weide genutzt werden sollen.

Im Rahmen eines seit 2022 laufenden zehnjährigen Vorhabens werden die arbeitswirtschaftlichen Konsequenzen der Wiedervernässung auf privat bewirtschafteten Betrieben untersucht. Im Jahr 2025 wurden intensive Untersuchungen auf vier wiedervernässten Niedermoorweideflächen durchgeführt, bei denen arbeitswirtschaftlich relevante Standortparameter wie volumetrische Bodenfeuchte und Scherfestigkeit als Indikatoren bodenphysikalischer Bedingungen erfasst wurden, die die Tragfähigkeit des Bodens und damit Trittsicherheit sowie Befahrbarkeit der Flächen beeinflussen. Auf dieser Grundlage sollte die Betretbarkeit für Mensch und Tier sowie die Befahrbarkeit mit landwirtschaftlichen Maschinen im Rahmen der Weidebewirtschaftung beurteilt werden.

Die Messungen wurden an jeweils zehn diagonal über die Flächen verteilten Punkten zu Beginn jeder Weideperiode durchgeführt. Die volumetrische Bodenfeuchte wurde mit einem mobilen Messgerät (Handi-TRASE, 20 cm Sondenlänge, Modell 6085, SoilMoisture Equipment Corp.) bestimmt, die Scherfestigkeit mit einem Scherflügel (75,8 × 151,5 mm, Modell H-70, Geonor). Die verfügbare Weidefläche variierte zwischen etwa 0,4 und 1 ha. Auf den Weideflächen wurden sechs bzw. ab dem 20.08.2025 fünf Rinder einer Kreuzung aus Braunvieh und Galloway gehalten. Der Austrieb auf die untersuchten Weideflächen erfolgte am 07.05.2025, die Beweidung endete am 02.10.2025. Während dieses Beweidungszeitraums fand 20-mal ein Weidewechsel statt, wobei eine Fläche (Fläche 3) sechsmal und die restlichen drei Flächen jeweils fünfmal beweidet wurden.

Die durchschnittliche volumetrische Bodenfeuchte zu Beginn der Weideperioden betrug $77,4 \pm 9,5$ % (Fläche 1), $82,2 \pm 4,4$ % (Fläche 2), $74,7 \pm 10,0$ % (Fläche 3) und $74,2 \pm 5,6$ % (Fläche 4). In einzelnen Weideperioden variierte sie zwischen $63,4 \pm 11,4$ % (Fläche 3 am 01.07.2025) und $85,0 \pm 2,3$ % (Fläche 2 am 08.09.2025). Die durchschnittliche Scherfestigkeit, ebenfalls zu Beginn der Weideperioden, lag bei $24,9 \pm 12,2$ kPa (Fläche 1), $17,2 \pm 7,6$ kPa (Fläche 2), $30,9 \pm 13,1$ kPa (Fläche 3) und $49,2 \pm 15,1$ kPa (Fläche 4). In einzelnen Weideperioden reichte sie von $13,5 \pm 4,0$ kPa (Fläche 2 am 12.05.2025) bis $57,9 \pm 13,0$ kPa (Fläche 4 am 23.06.2025).

Die Ergebnisse zeigen, dass durch Wiedervernässung eine nasse Nutzung der Flächen erreicht wurde. Gleichzeitig kam es jedoch zu einer deutlichen Reduktion der Trittsicherheit und Befahrbarkeit, was relevante arbeitswirtschaftliche Einschränkungen für die Bewirtschaftung der Flächen, wie z. B. das Auszäunen zu nasser Bereiche und häufigere Weidewechsel, nach sich zog.

Keywords: Wiedervernässung, Niedermoorweideflächen, Bodenfeuchte, Scherfestigkeit

Herausforderungen auf dem Weg zur Digitalisierung in der Broilerhaltung in Deutschland

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Die Optimierung von Datenflüssen und die Reduzierung des Verwaltungsaufwands durch Digitalisierung sind wichtige Themen in der Landwirtschaft. Um Hindernisse zu beseitigen und den Verwaltungsaufwand sowie die Kontrollen in landwirtschaftlichen Betrieben zu reduzieren, ist die Kommunikation zwischen den Akteuren entscheidend. Eine von uns durchgeführte Umfrage hat gezeigt, dass die meisten Daten von Landwirten an Kontrollbehörden weitergegeben wurden. Deshalb haben wir uns entschieden, die relevanten Datenflüsse genauer zu analysieren. Die Datenflüsse wurden auf der Grundlage der Bundesgesetze sowie der Regelungen auf Landesebene am Beispiel Niedersachsens analysiert. Außerdem wurden in der aktuellen Studie die B2G (Business-to-Government) Datenübertragungen mit sektorspezifischen Landesbehörden im Geflügelmastsektor untersucht. Für die Datenerhebung wurde eine Online-Umfrage genutzt. Es zeigte sich, dass papierbasierte Berichte immer noch weit verbreitet und Webinterfaces nur teilweise verfügbar sind. Die Umfrage macht deutlich, dass der Berichtsprozess verbessert werden muss, vor allem durch den verstärkten Einsatz automatisierter Datengenerierung und der Datenübertragung in digitaler Form.

Als nächster Schritt wurde ein Workshop durchgeführt, um Hindernisse auf dem Weg zur Digitalisierung mit Teilnehmenden aus allen wichtigen Interessengruppen der Broilerhaltung in Niedersachsen zu identifizieren und zu diskutieren. Obwohl während des Workshops ein Beispiel für die automatisierte Übertragung von Stallklimadaten in der Broilerhaltung als Diskussionsgrundlage vorgestellt wurde, wurden eine Reihe von weiteren Herausforderungen identifiziert, die gelöst werden müssen, um den Datenfluss zu verbessern. Die Teilnehmenden empfanden dieses Format als neuartig und sehr nützlich für die Reduzierung des Verwaltungsaufwands. Die Ergebnisse des Workshops werden bei einem weiteren Workshop diskutiert, der für Mai 2026 in Deutschland geplant ist. Das Konzept des Workshops wird ähnlich sein, mit der Ausnahme, dass sich die Teilnehmenden mit der Broilerhaltung in zwei verschiedenen Bundesländern befassen werden, da sich die Vorschriften erheblich zwischen den Bundesländern unterscheiden können.

Keywords: Datenflüsse, Vollzug, Administrativer Aufwand, Umfrage, Interessengruppen

Working Group 13: Assessing and Interpreting Farm Workload: Pathways, Practices and Perspectives

Convenors: Rita Saleh (Agroscope, Switzerland), Sarina Altermatt (Agroscope, Switzerland), Emile Spahr (Agroscope, Switzerland)

This Working Group explores diverse methods for assessing and interpreting farm workload, while also addressing questions of decent work, social sustainability and the future of farming. It aims to i) map methods for assessing farm workload and evaluate their pros/cons, ii) investigate how workload is experienced in different contexts (e.g. farm type, gender, mechanisation/digitalisation, sustainability issues), iii) to discuss pathways for assessing workload as a farm-level social sustainability indicator in different farm contexts (e.g., farm types and labour arrangements, mechanization and digitalisation, etc.). We invite contributions from researchers, practitioners, and policymakers to discuss conceptual, methodological and applied perspectives across different farming contexts.

Complementarity of the Work Assessment Method and Aptimiz app to tackle the labour organisation issues in dairy cattle farms

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Context

Dairy production continues to concentrate in farms with increasing herd size. This is accompanied by tensions in several areas of work, farmers seek to improve their quality of life and working conditions. The aim of this article is to present a study that combined two labour assessment approaches, one based on a farm survey (Work Assessment Method-WAM) and one on automated recording of working hours (Aptimiz app) to draw lessons in terms of producing working time benchmarks and supporting farmers.

Methodology

The study was conducted between 2020 and 2023 by Idele and six partners in order to assess working hours on 27 dairy farms, representing a variety of systems. Each farm was surveyed using WAM and Aptimiz application to automatically record working hours by geolocation of workers over a one-year period. Each farm was classified according to the quality of the available data. Statistical processing was applied to adjust and correct any discontinuities in the records (related to dead zones, smartphone failures or handling errors). The WAM and Aptimiz data were analysed according to different parameters (farm, worker, activities, tasks or areas) before being discussed and compared.

Results

Each method has several advantages and limitations for analysing work organisation.

Once the records are of good quality, Aptimiz provides access to a large amount of daily working time data, per person and per area of the farm, gathered by georeferenced locations. Data can be aggregated by category to help analysis and go beyond overall data at farm or worker level. Aptimiz can be used to measure travel times (access to cultivated plots, etc.) or time spent in the office. The limitations encountered are related to the time it takes to access the results (one year), technical problems (dead zones, smartphone malfunctions) and difficulties to differentiate tasks performed in the same area (e.g. mulching, scraping, feeding dairy cows). The calculation of performance indicators (hours spent for dairy activities /1,000 litres, /dairy cow, /partner) was only possible by using data from the WAM survey.

The WAM method, based on estimates provided by farmers in a face-to-face survey, allows for the reconstruction, by main periods, of seasonal and routine work involving different types of workforces and tasks. The estimate of total annual working time per person and per farm appears to be higher in WAM surveys than in the ten most reliable Aptimiz records (+22% on average). The value of the WAM lies in the appropriation of the diagnosis by the farmers surveyed and the possibility of quickly providing advice on the organisation of work, but above all in comparing working hours with the farmers' feelings and expectations regarding work (meaning of the job, pace of work, free time, hardship, mental load, work-life balance, human relations).

The use of two complementary approaches made it possible to identify areas for improvement in each of these areas.

Keywords: Labour assessment, methods, on-farm survey, digital application, workload

A farmer-focused survey instrument for exploring workload on farms

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Increasing herd sizes, alongside a declining agricultural workforce, have intensified social sustainability challenges on dairy farms. In pasture-based systems, the distinctly seasonal spring workload further amplifies these pressures, prompting renewed interest in labour time-use, workload management, and their implications for farmer wellbeing. However, practical and scalable approaches to measuring workload and associated wellbeing outcomes during peak labour periods remain limited. The objective of this study was to develop and apply a simple, farmer-friendly survey to measure workload and explore its relationship with wellbeing during the spring period. A ten-question self-reported survey was co-designed by researchers and farm advisors to balance methodological rigour with ease of use, enabling repeated data capture during peak workload while supporting farmer decision-making, group comparison, and reflective discussion. The survey was administered weekly via text message to eight dairy farm discussion groups during February and March 2023 and 2024, targeting the peak spring workload period. A total of 116 farmers participated, of whom 94 provided sufficient responses ($\geq 50\%$ of weekly recordings) for inclusion in the analysis. The survey generated detailed descriptive indicators of daily workload and rest patterns, including start and finish times, milking schedules, hours worked/week, time off, and sleep duration. Farmers were ranked according to work organisation effectiveness using a composite score integrating hours worked, time off, and evening finish time, and were categorised into quartiles (Q1 = most effective; Q4 = least effective). This ranking enabled comparison of workload and wellbeing indicators across contrasting work organisation profiles. Farmers in the most effective quartile reported fewer hours worked per week (61.0 v 85.9h), more time off (0.5 v 0.0 days/week), and earlier evening milking (15:51 v 17:00) and finish times (18:09 v 20:12) compared with the least effective quartile. These differences were likely to contribute to longer sleep duration (6.7 v 6.0 h/night) and higher self-reported mood scores (3.8 v 3.5 on a 1–5 Likert scale), providing indication of a relationship between more effective work organisation and improved wellbeing. Considerable variation between discussion groups further highlighted the potential for this tool to support locally relevant reflection and behaviour change. Comparison with similar studies suggests the findings may be affected by recall bias. However, rather than serving as a representative industry measure, the survey proved valuable as a low-burden benchmarking and discussion tool. Observed patterns demonstrate its utility in generating comparable, discussion-ready metrics that support peer learning and advisor-facilitated reflection. The instrument is simple to implement and has potential for adaptation across farm sectors and regions to stimulate discussion on workload management.

Keywords: farm workload, wellbeing, survey, work organisation

Modelling the future human capital requirements of Irish dairy farms

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Dairy industries in most industrialized nations have increased in scale in recent years, following significant growth, optimization, and market globalization. This is the case in Ireland, where since the 2015 transition of the European Union milk market to a free market system, dairy farms have increased in herd size and milk production with positive impacts on farm profitability. This has resulted in an increased average herd size from 68 cows in 2015 to 99 cows in 2025 across 14,980 family farms. The resilience of Irish dairy farms is now challenged by other factors, including labour demand and availability, and generational renewal. Growth in herd size requires greater human capital to meet the labour demands associated with farm tasks. As the dairy industry continues to optimize across areas of farm management, there remains a need for dependable and available data on the human capital requirements of dairy farms to improve employment dynamics, identify future skills and education gaps, and thus increase the overall resilience of the farm workforce. The objective of this study was to develop a model to predict future human capital requirements, using Irish dairy farming as a case study. A Microsoft excel model was developed; relevant data, including herd size information, farm demographic and workload data were collected from the Irish Central Statistics Office and National Farm Survey, respectively, and inputted. Labour efficiency data was modelled based on previous Irish studies. The model predicted an estimated need for 743 new full-time equivalents (FTE; based on 1800h worked per year) per annum on dairy farms up to 2035 in the scenario assuming the national herd size remains relatively constant. This includes an estimated 389 new employee FTEs per annum, and 354 farm successors per annum. The model indicates that, despite limited future growth in the national herd, there will remain a sustained demand for new entrants to the sector due to employment dynamics and ongoing structural shifts due to an ageing farmer population. These shifts emphasise the importance of improved generational renewal processes and efforts to attract and retain new and existing employees within the sector. The model is limited by its inability to account for real-world factors such as geographic, policy, and market considerations, and by the restricted nature of the available data which may not fully capture the complexity of labour dynamics. However, it offers a useful indication of future skills needs and has the potential to be adapted to other sectors or countries, where suitable data is available. By providing quantified projections of future human capital requirements, the model can offer a more robust evidence base to enable more targeted workforce planning, skills development, and generational renewal interventions.

Keywords: human capital requirements, modelling, dairy farm labour

A pilot study on the Work Assessment Method (WAM) applied on Irish dairy farms

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Work, both in terms of its demand and supply, plays a crucial role in the production and social sustainability of farms. Previous studies have used metrics such as hours per task and hours per cow to describe labour distribution on-farm but were limited in addressing work organization and fluctuations in work dynamics throughout the season. This may be addressed by the Work Assessment Method (WAM), a labour research tool developed by French scientists. The WAM uses a Calculated Time Available (CTA) parameter which serves as an indicator of the farm's social sustainability from the farmers' perspective. The WAM has been successfully implemented internationally, but the method has not yet been rigorously tested on pasture-based systems which have a distinct labour profile. The objective of this study was to evaluate the suitability of the WAM to address labour management in family-operated pasture-based dairy systems, e.g. Ireland. The WAM was applied on six farms. Data collection was through interview of farm owners (August/September 2024) regarding farming system, workforce, and who carries out different tasks. All six farms were within three herd size categories (HSC; 60–99 cows, 100–239 cows, ≥240 cows). Annual routine (R) work conducted by the 'Basic group' (BG; farmers and farming couples) increased (range 2,275 h to 3,841 h; 6 to 11 h/day) across HSC. Annual R work contributed by 'Others' (O; family members, employees and contractors) also increased (range 0 h to 4,141 h; 0 to 12 h/day) across HSC. The BG group contributed reducing (58 to 46 %) levels of seasonal (S) work as HSC increased while the O group contributed increasing (46 to 56 %) levels across HSC. The CTA is a flexibility metric used to measure how much time is available when the R and S tasks are completed by the BG group. Average CTA was 759 h/farm per year (range 321 –1,195 h/year). The CTA was lowest for the 60 – 99 HSC (641 h/farm per year), intermediary for the 100-239 HSC (721 h/farm per year) and highest for the ≥240 HSC (915 h/farm per year). The CTA was lowest in February and March, with average values of 1 and 11 h/month, respectively, indicating limited capacity for additional tasks during this period. Average CTA peaked in December at 169 h, followed by October and November (93 and 99 h, respectively), suggesting greater flexibility for S or non-routine activities in late autumn and winter. Outsourcing some S tasks, employing casual labour or investing in automation to help reduce the R workload may improve a farm's CTA metric. Thus, the WAM may be used as a strategic planning tool for farmers to evaluate the workload component of their farm in terms of work time required for different tasks, at different times, as well as when additional labour is required and when time is available for rest. This approach can contribute positively to forward scheduling of tasks and labour management on pasture-based dairy farms.

Keywords: labour, seasonal, pasture-based, work assessment method

How Working Time and Perceived Workload Relate to Farmers' Perceived Burden

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Context

Farm workload assessment is commonly operationalized through metrics such as total working hours, labour intensity, work structure and working conditions. Workload intensity has also been linked to physical or psychological load, stress and burden. This link shows the importance of the subjective perceptions in workload evaluations. Surprisingly, despite the multidimensionality of workload, many sustainability assessment tools (e.g., RISE, SAFA, IDEA) often focus on labour conditions and working time but rarely account for burden and its relation to workload. Perceived workload burden reflects farmers' perceived social sustainability and a strong correlation between a workload indicator and perceived burden is therefore a prerequisite for ensuring that the indicator captures the intended construct. As perceived burden represents a form of strain that can lead to burnout or similar outcomes, understanding these relationships is essential.

To address this gap, our study draws on the Job Demands–Resources model which posits that when job demands exceed available resources, occupational health is at risk. Focusing on the health impairment process, we examine which workload indicators best predict farmers' perceived workload burden.

Method

Three indicators were used to assess workload: (i) reported workload, (ii) modelled working time requirement and (iii) the available workforce on the farm. An online questionnaire was conducted with 572 farm managers. Respondents reported their estimations for total working hours per week at their farms and filled out how burdensome they perceive their workload to be from 1=not burdensome at all to 7=extremely burdensome. Subsequently, we calculated the working time requirement on the basis of farm structure data from the Agricultural Policy Information System (AGIS) using the online tool LabourScope. The available workforce is calculated based on the number of workers and their workload percentage.

Results

Reported workload was strongly associated with perceived burden across most farm types. Dairy farms have significantly the highest workload but perceive a similar level of burden to arable and farms with mixed livestock. Suckler cow farms have significantly the lowest workload reported, but have a similar level of burden to arable, farms with mixed livestock and combined farms. The findings suggest that other factors such as the diversity of tasks, the organisation of work and the distribution of activities might influence perceived burden instead of workload alone.

Conclusion

Structural, modelled and perceived workload measures capture distinct dimensions of work and relate to perceived burden in only specific farm types. Overall, social sustainability assessments should interpret these indicators jointly. Integrating perception-based workload assessment into national monitoring systems would strengthen policies aimed at supporting farmers' wellbeing.

Keywords: social sustainability, workload, objective measure, perceptions, agriculture

Modelling agricultural labour time – experiences from Switzerland

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Modelling the amount of time that is needed to manage a farm with a given production portfolio and subsequently to run the agricultural sector of a country has been an important strain of research in agricultural economics research around the world in the late 20th century. Although other challenges of the farming sector have ousted a large part of international discourses on methodological issues of time measurements and questions of appropriate aggregations, the labour time requirement for farm tasks remains an essential aspect of farm workload. Thus, labour time models still can and should deliver support for different actors in the agricultural sector.

The family of labour time models in Switzerland builds on several decades of practice-oriented research. Today three applications are in use: (i) PROOF for modelling production times, (ii) OFFWO for modelling office times and (iii) LabourScope for upscaling the modelled times for individual work tasks on farm level. The use cases of these applications are manifold.

The Excel-based modelling tools PROOF and OFFWO allow to precisely define a workflow and adjust their influencing factors in detail. In science, users benefit from this depth of detail when it comes to modelling the working time required to apply a new technology, for example for a hoeing robot or a resource-saving working method with reduced herbicide use. However, these two applications require in-depth knowledge of modelling conventions.

The labour time models from PROOF and OFFWO form the basis of the online application LabourScope. In Switzerland, training in both agriculture and rural home economics places particular emphasis on work planning. LabourScope meets the need for a freely available tool for calculating the workload at farm level for both agricultural production as well as the farm household. By working with LabourScope in education, users gain an understanding of the variety of tasks that need to be allocated within the available time budget. On the farm, where workload analyses are often initiated or supervised by consultants, LabourScope helps to show the current workload on the one hand, but it can also show the working time requirement in the individual production branches and thus can support the decision-making process when, for example, the herd is to be enlarged or new technology purchased. Yet, little is known about the effects of a decision driven by reasons of temporal workload on social sustainability. This should be subject to further investigations.

In addition to a presentation, we prefer the option of a World Café to develop research ideas together with the participants of the working group for the further development of assessment tools and indicators for the three pillars of workload (time, physical and mental).

Keywords: modelling tools, use cases, education, research

Work, productivity and structural transformation in world agricultures (1960-2023). Using statistics as tools of evidence and government

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Following in the footsteps of Alain Desrosières (2008, 2014) and other scholars in Science and Technology Studies (STS), we aim to show here how statistics and the economic theories or models derived from them are hybrid, serving both as tools of evidence and as tools of government of agricultural work and productivity (Dorin et Joly, 2020).

To this end, we use tens of millions of country-level statistics on employment, value added, land use and food production since the 1960s to: (1) present the contrasting developments in agricultural employment and productivity of land and labour in six major regions of the world over 1960-2023 (Asia, Latin America, Sub-Saharan Africa, Middle-East and North Africa, OECD countries in 1990, Ex-USSR) ; (2) represent with these available statistics the canonical model of 'modern economic growth' or 'structural transformation' (Kuznets, 1973; Herrendorf et al., 2014) that we call the 'Lewis path' (Dorin et al, 2013); (3) show that this model only worked well in OECD countries thanks to an unprecedented emigration of labour out of agriculture which cannot be reproduced in the rest of the world for social and ecological reasons.

In doing so, we simultaneously: (i) document how current measurements of labour and production in agriculture are unbended in the western energy-intensive dominant model of industrial food and agriculture, with a high division and specialisation of both land and labour; (ii) question and recombine these available measurements and metrics to provide a robust panorama of the past six decades of worldwide structuration changes, (iii) help to show how unsustainable the dominant sociotechnical regime of industrial food and agriculture is and, more generally, the theory of 'modern economic growth' which leads to a 'world without agriculture' (Timmer, 2009) and outside nature.

This leads us to open the discussion on the alternative socio-technical regime of 'deep agroecology' such as that developed since 2016 by the Andhra Pradesh Community-managed Natural Farming (APCNF, India) (Dorin, 2022), and on the metrics that can be used to foresight and evidence its high profitability in multiple domains (Dorin et al, 2024).

Keywords: Statistics, Agriculture, Labour, Land, Productivity, Structural transformation

Workload assessment of dairy farmers and dairy farmers-cheesemakers in France

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Producing high-quality milk and a diverse range of cheeses demands considerable effort from dairy farmers and cheesemakers, who often work with little rest. This study aims to evaluate the workload of dairy farmers and dairy farmers-cheesemakers in France. During the summer of 2023, a total of 17 participants (comprising 8 dairy farmers and 9 dairy farmer-cheesemakers) from the Aveyron and Auvergne-Rhône-Alpes regions were interviewed in person. The interviews focused on: 1) workforce demographics (age, gender, number), 2) farm activities, 3) the nature and intensity of workload, 4) its personal and professional consequences, and 5) potential decisions or solutions envisaged to reduce the burden. Our results show an average of 3.34 ± 3.35 workers per farm and farm/cheese dairy, ranging in age from 28.63 ± 14.35 to 51.05 ± 8.94 years. Women constitute 39% of the workforce. For dairy production, most farmers (41%) raise cows, 35% sheep, 18% goats, and 5% raise several animals on the farm. Furthermore, more than half (53%) of them undertake activities in addition to dairy and cheese production, such as tourist visits, room or cottage rentals, raising animals for meat and egg production, and making jams and wine. In our study, a large majority of farmers and farmer-cheesemakers (88%) have a high workload, and this pressure results in restricted personal time as 71% report having no weekends and/or taking few holidays per year. The consequences are particularly acute for young working couples, where mothers specifically (36%) reported being unable to properly care for their infants, accompany their children to school, or spend sufficient time with them. However, 77 % are not interested in expanding milk production or diversifying their cheese varieties ; they complain about the administrative burdens, demanding European hygiene standards, and difficulties in finding and hiring qualified workers. Therefore, to reduce the workload, about half (47%) of farmers and farmer-cheesemakers plan to either automate certain tasks and/or hire additional help for various duties on the farm and in cheese production and sales. In conclusion, agriculture policymakers should implement strategies to alleviate administrative burdens, assist farmers by funding shared technical equipment, and promote task-delegation models. These measures would improve wellbeing of farmers and cheesemaking, boost productivity, and help make the profession more attractive to younger generations.

Keywords: Dairy farmers, cheesemakers, workload, France

Working Group 14: Climate Shocks and Labour Market Transitions in Agriculture

Convenors: Yasmine Abdelfattah (University of Prince Edward Island, Cairo campus, Egypt)

This working group engages with the effects of climate shocks and the green transition on agricultural and rural labour market dynamics. It aims i) to share recent empirical evidence and case studies on how climate shocks affect employment, informality, and decent work outcomes, ii) to explore the adjustment costs of labour reallocation, considering occupational skill specificity and mismatches, and impacts on welfare and labour mobility, iii) to discuss the implications of climate- and technology-driven changes for agricultural workforce development systems, iv) to identify policy solutions that can reduce vulnerability, support decent work, and ensure inclusive transitions for all, and v) to foster collaboration among researchers, practitioners, and policymakers.

Livelihood Vulnerability of Agrarian Tribal Households in Rural India: Assessment and Determinants

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Rural livelihoods in India remain inherently fragile due to their strong dependence on natural ecosystems, exposure to climatic variability and limited access to socio-economic and infrastructural resources. Tribal communities are particularly affected as many live in forest-fringe areas and depend largely on subsistence agriculture and forest resources for their livelihoods. In Jharkhand, despite being rich in natural resources, persistent poverty and structural marginalisation have intensified livelihood vulnerability among agrarian tribal households. However, micro-level empirical evidence identifying the household specific drivers of livelihood vulnerability within these communities remains limited. Against this backdrop, the present study examines the socio-economic and infrastructural determinants of livelihood vulnerability among agrarian tribal households in rural Jharkhand. Drawing on the Sustainable Livelihood Framework, livelihood vulnerability is assessed using the Livelihood Vulnerability Index. A Multiple Linear Regression Model is employed to identify the key factors influencing vulnerability at the household level. The analysis is based on cross-sectional primary data collected from 400 households across tribal-dominated villages. The findings indicate a moderate degree of overall livelihood vulnerability, with a composite index score of 0.539. Among the three major components of vulnerability, exposure emerges as the most significant contributor, followed by sensitivity and adaptive capacity. The regression results reveal that high dependency ratios, migration, chronic illness, lack of irrigation and sanitation facilities, reliance on borrowing, and monocropping practices significantly increase livelihood vulnerability. In contrast, access to secondary and higher education and membership in Self-Help Groups play a mitigating role by strengthening households' adaptive capacity and social capital. These findings highlight that livelihood vulnerability among tribal households is shaped by an interplay of socio-economic constraints, infrastructural deficits and environmental exposure. The study underscores the need for integrated rural development strategies that improve basic services, promote livelihood diversification, climate-resilient agriculture and reduce distress migration. By providing micro-level empirical evidence, the study contributes to the literature on livelihood vulnerability and offers policy-relevant insights for designing targeted interventions to enhance resilience and long-term sustainability among marginalised tribal communities.

Keywords: Livelihood vulnerability, Agrarian tribal households, Rural India, Sustainable Livelihood Framework, Livelihood Vulnerability Index

Climate Shocks, Employer Stratification, and Contract Labor in U.S. Agriculture

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Climate change has intensified agricultural production risk, yet empirical research largely emphasizes yield and output responses (e.g., Lachaud, et al. 2022; Yuan, et al. 2024). Agricultural labor markets are institutionally distinctive, characterized by seasonal demand and variation in employer-employee risk-sharing (e.g., Ray, et al. 2023). This paper examines how climate shocks affect labor organization in agriculture through employers' reliance on contract labor.

The study objective is to assess how climate shock-induced shifts in contract labor vary systematically with employer capacities to absorb risk. Building off theories of stratification economics (Chelwa et al., 2022; Darity, 2022) and historical social economic stratification (Davis, 2022), I apply a concept of employer-side stratification based on hierarchical differences among agricultural employers in their access to capital, insurance, and other resources. I focus on observable demographics of farm operators as a proxy for accumulated assets, balance-sheet capacity, and institutional embeddedness, which shape adjustment pathways under climate stress.

In the U.S. context, "contract labor" often refers to employment mediated through third-party labor contractors that shifts recruitment and production risk (rather than direct fixed-term contracts). Building an empirical example using data from the U.S. Census of Agriculture, I analyze trends in contract labor expenditures and usage as a share of total hired labor. Climate shocks are measured by extreme heat and drought during relevant growing seasons. The empirical strategy exploits cross-sectional and temporal variation in climate stress and operator demographic composition.

The paper highlights labor organization as a critical and understudied channel of climate adaptation and speaks to how climate shocks alter agricultural employment relationships, job stability, and risk exposure. In contexts where labor contracting weakens employer-employee ties, adjustments have implications for informality, compliance, and decent work outcomes including health and safety. The findings inform discussions of labor reallocation under climate stress by highlighting how employer risk-management strategies reshape demand for types of farm work, potentially affecting adjustment costs, skill matching, and workers' mobility, and underscore the importance of integrating labor-market considerations into agricultural policy design.

While this analysis is grounded in U.S. context, the framework of employer-side stratification and risk externalization through labor organization has broader relevance for international comparisons. Agricultural systems worldwide differ in the degree of labor intermediation, employment regulation, and social protection, yet many face similar pressures to reorganize work in response to climate shocks. The U.S. case thus serves as a comparative benchmark for understanding climate-related worker transitions out of agriculture.

Keywords: climate shocks, agricultural contract labor, labor-market transition, risk and resilience, stratification

Intergenerational Labor Market Transitions in MENA: Exploring the Impact of Climate Shocks

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This paper examines how climate shocks influence intergenerational labor market transitions in the Middle East and North Africa (MENA), with a focus on Egypt. Using panel data from the Egypt Labor Market Panel Survey (1998–2023) combined with district-level temperature anomalies from NASA POWER, we investigate the extent to which climate shock disrupt the occupational trajectories between fathers and sons, particularly transitions in and out of agricultural employment. Employing a Difference-in-Differences event-study framework with two-way fixed effects, we estimate the dynamic impact of climate anomalies on intergenerational mobility elasticities. Preliminary findings indicate that heat shocks reduce persistence in agricultural occupations across generations and modestly weaken intergenerational occupational mobility ($p \approx 0.08$), especially in Upper Egypt governorates. These effects suggest that climate shocks may exacerbate structural labor market rigidities and deepen intergenerational inequality. Policy implications include the need for climate-adaptive labor policies, targeted educational investments, and resilience-building measures for vulnerable households. The study contributes novel evidence on the long-term repercussions of climate change on intergenerational labor dynamics in developing country settings, highlighting the urgency of integrating climate resilience into labor market strategies in the MENA region.

Keywords: Labor market transitions; Climate shocks; Occupational persistence; Agriculture; Difference-in-Differences (DiD); Event-study; MENA region; Egypt.

Working Group 16: Climate Change and Transformation of Work in Animal Husbandry

Convenors: Christa Gotter (PECO-Institut, Germany)

This working group examines perspectives of workers in the animal husbandry sector on climate-related transformations, related working conditions and worker opportunities to actively shape transformations. It explores the following questions: How is climate change changing the working conditions of employees in agriculture? How do employees in agriculture perceive climate change? What experiences do workers have when farms adopt measures to reduce greenhouse gas emissions or increase biodiversity? What political measures help cushion the potential negative consequences of these changes for workers? Finally, what role do trade unions play in these transformation processes? The working group encourages cross-border knowledge exchange and will explore opportunities for cooperation on joint future projects.

Bees and beekeepers facing climate change: reconfiguration of beekeeping work

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Beekeeping is an agricultural activity as little known as it seems enchanting. Its close relationship with nature generally feeds the image of a romantic activity, the realities of which often remain hidden. In France, it is mainly practiced by hobbyists: professionals, who have more than 200 hives and make their living solely from beekeeping, represent only 4% of beekeepers. The French beekeeping worlds are facing several crises: health, Asian hornets, economic, land and now climate. The latter may seem like just “another crisis,” but we will show that it is leading to profound and unprecedented changes in beekeeping practices.

Among agricultural activities, beekeeping is undoubtedly the one that is most dependent on and sensitive to natural conditions, on which it is heavily reliant. Bees and beekeepers live and work in tune with the seasons, and mainly with flowering periods. Flower nectar and pollen are vital food resources for bees throughout the year. Their presence in bees' environment determines not only the survival, health, and development of the colony, but also the type and quantity of the honey harvest, and consequently the work and income of beekeepers. This presentation aims to analyze how climate change is affecting and transforming technical, temporal, and organizational aspects of beekeeping, revealing its very nature. We will draw on field studies conducted in France since 2022, based on sociological interviews.

Whatever the beekeeping system (sedentary or migratory), the work involves movement and travel within a territory: bees are looking for flowers and resources, and humans move from one apiary to another to harvest honey and monitor bees. Climate change manifests itself in two extreme situations: the consequences on beekeeping work will be examined. On the one hand, prolonged periods of drought and, on the other hand, periods of intense and abnormally long rainfall, as it was the case in France in spring 2024. In the first case, the living and working conditions for humans and bees become particularly difficult, and even dangerous, forcing humans to move around repeatedly. In the second case, bees can no longer forage: food shortages threaten them and compromise the harvest, forcing beekeepers to make choices that raise certain ethical issues.

Keywords: climate change, beekeepers, work, drought

Climate change impacts in mixed pigs-beef cattle systems in grasslands areas: workload and mental load of farmers

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In order to remain competitive and reduce dependence on the livestock feed market, effective forage management is essential in grass-based systems. However, in the context of global climate change, the increase of rainfall severity and the frequency of droughts may reduce grass yields and limit fodder autonomy. Many studies have shown that multi-species livestock farming (particularly sheep and cattle) increases resource use efficiency. However, the potential benefits of systems combining pigs and cattle have received less attention. In these farms, we can suppose that careful management of the different types of manure improves grass growth and, consequently, limit the impact of climate change on grass yield. Nevertheless, the efficiency of organic fertilisation is only ensured if it is carried out at a specific time close to a rainfall period. Climate variability can create tensions in the management of this practice and, thus, can impact farmers' work and mental health. A thorough study was conducted on 19 mixed pig and cattle farming systems in the French Massif Central area to assess the impacts and the perception of climate change on farmers' labour to maintain fodder autonomy in the last 5 years.

All farmers mentioned an increase in the duration of drought periods in summer and a different annual rainfall distribution which has led to a global decrease in fodder self-sufficiency and forage quality. However, only five farmers have purchased forage over the past 5 years. In order to mitigate the impact of climate change, they have implemented at least one adaptation lever, such as introducing rotational grazing, alternating grazing and harvesting in pastures, or reducing stocking rates. All farmers stated that their workload has increased, particularly during the spring and summer months, due to the need to feed and water the animals on pasture. Three of the farmers added that they feel stressed and experience increased mental strain. The increase in workload linked to climate variation difficult was due, on the one hand, to the implementation of adaptation levers and, on the other hand, to ongoing adaptability. They said that 'psychologically, it's more complicated'. They all said that their fertilisation work depends heavily on the weather, and also managing fertilisation requires flexibility in work organisation and the ability to cope with unpredictability due to climate variations while respecting the regulatory spreading periods. In conclusion, climate change could impact the management of fodder systems, leading to changes in work organisation and in workforce requirements. Further studies could provide more advice on how mixed systems can adapt to intensifying climate variations.

Keywords: Labour, bovine, porcine, manure, fodder autonomy

Laundering and Evasion in Response to Sustainable Sourcing Policies: Evidence from Brazil's Cattle Sector

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Modern slavery is a hidden and pernicious form of labor exploitation that persists in agricultural supply chains worldwide. In sectors characterized by dispersed production and weak oversight, experts emphasize the need for combined public enforcement, transparency mechanisms, and private-sector sourcing restrictions to improve labor and environmental outcomes. Yet the hidden nature of modern slave labor (MSL) has limited rigorous evaluation of whether these policies meaningfully change employer behavior.

We analyzed how a public transparency policy—the Brazilian government's "Dirty List" of employers found to use MSL—interacted with private-sector sustainability commitments in the cattle sector, a major source of both labor exploitation and environmental harm in the Amazon. Using detailed administrative data on cattle movements from 2009–2023, we tracked how ranchers changed their sales behavior when they were publicly named for labor violations and faced voluntary exclusion by export-oriented slaughterhouses that had committed to blocking suppliers with illegal deforestation or MSL.

Our results provide the first causal evidence on how sanctioned employers responded to anti-slavery supply chain policies in Brazil's cattle sector. Ranchers placed on the Dirty List did not reduce overall cattle sales, but they sharply reduced direct sales to monitored slaughterhouses and increased sales to other ranchers instead. Many of these intermediary ranches subsequently sold cattle to the same slaughterhouses that had ostensibly excluded Dirty Listed suppliers, indicating systematic laundering of cattle through "clean" properties. As a result, labor-sanctioned ranchers remained embedded in both domestic and international supply chains, including exports to major global markets such as the EU.

These findings mirror well-documented evasion strategies used to circumvent environmental sanctions for illegal deforestation, underscoring the close relationship between labor exploitation and environmental degradation in extensive livestock systems. They also highlight a key limitation of transparency-based labor policies when monitoring systems focus narrowly on first-tier suppliers. For policy makers and practitioners concerned with the future of work in animal husbandry under climate and sustainability pressures, our results point to the need for integrated traceability systems that jointly address labor and environmental risks. Strengthening supply chain monitoring for deforestation presents a critical opportunity to simultaneously improve labor conditions, ensuring that climate-oriented reforms in agriculture do not overlook the workers most vulnerable to exploitation.

Keywords: Modern slavery, Brazil, Cattle, Deforestation

Working Group 17: Impact of Animal Welfare Improvement on Working Conditions

Convenors: Jousseins (Institut de l'élevage, France), Xavier Boivin (INRAE, France)

This working group explores how regulatory, structural, technological and farming practice changes deemed to improve animal welfare impact the way farmers work, how farmers interact with animals and affect their respective welfares. The aim of this working group is to describe the impact of the changes due to animal welfare improvement on the agricultural work in all its dimensions: working hours, job content, physical or psychological strain, meaning of work, skills, fulfilment, etc. Participants will present the results of studies from a variety of production sectors, countries and disciplines (animal husbandry, ergonomics, psychology, sociology, applied ethology). One welfare approaches are welcome.

Impact of implementation of minimal confinement of lactating sows on pig husbandry and working conditions of stockpeople

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Minimal confinement of lactating sows will be implemented in Europe in the future, with these proposed changes to housing requiring a different skill set of stakeholders within the farms. A well designed and managed system without permanent crating can achieve the same performance as conventional farrowing crates, however this performance is arguably attributed to the stockpeople working within it. Although stockmanship has a direct impact on pig welfare and productivity, it is often undervalued in the production system. The application of pig husbandry by stockpeople in either conventional or minimal confinement lactations systems is rarely systematically studied. Pig husbandry procedures that are recommended tend to be delineated from pig research trials which show an effect of treatment, rather than the effect of the implementation of the procedure by stockpeople. Based on studies in social sciences, there is a discrepancy between intended policy/ practice (on paper), implemented policy/practice (by the farmer) and perceived policy/practice (by the stockpeople). The objective of this study was to identify and validate the pig husbandry procedures implemented by stockpeople working in existing minimal confinement lactation herds in Denmark. This was achieved via the application of Participatory Action Research (PAR) principles - a collaborative research, education and action oriented towards social change by involving researchers and participants (both farm owners and stockpeople in this case) working together to examine a problematic situation to change it for the better. The methodological approach of the four phases to identify and validate the implemented pig husbandry procedures can be summarised as being (1) a semi structured interview with stockpeople and farm owners (covering pig husbandry and experience learning to work with loose lactation systems), (2) observation of working routines by stockpeople in the stables, (3) a vision mapping exercise with stockpeople (to identify their observational patterns of pigs) and (4) cross checking with herd performance data (obtained from production records). Preliminary analysis identified major trends of similarities in pig husbandry procedures implemented between farms, with key factors for success including the implementation of specialist stockpeople for care and management of farrowing sows and newborn piglets, a requirement of higher attention by stockpeople to individual sows and their litter when compared to production with farrowing crates and stockmanship skills being critical for keeping both stockpeople safe and the reduction of piglet mortality. These outcomes will be the basis for the development of a learning environment, designed to be used by stockpeople transitioning to work in higher welfare pig production.

Keywords: pig, husbandry, stockperson, loose, lactation

Study of the impacts of animal welfare practices on the wellbeing of dairy and pig farmers

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As consumption and production models are being questioned, farmers must adapt their practices. Animal welfare, valuable for 92% of French people but only satisfies 59% of them, appears both as an opportunity (72%) and a constraint (45%) for farmers. It is therefore essential to assess the impact of animal welfare practices on the wellbeing of farmers and the factors that determine this impact. This collaborative work first characterized farmers' wellbeing across physical, mental, environmental and societal axis. A methodology assessing the impact of animal welfare practices on farmer' wellbeing was developed for dairy farming and then transferred to pig farming. It enables farmers to rate changes across 23 criteria after implementing the practices. A total of 36 farmers (18 dairy, 18 pig; 18 women, 18 men) assessed one to four practices implemented to improve animal welfare, representing 80 solution-farmer pairs. For each of the criteria relating to their wellbeing, respondents rated whether the practice deteriorated (-1 and -3), improved (+1 and +3) or maintained it as the initial situation (0). Then, their overall wellbeing is evaluated on a scale from -69 to +69.

The results indicate a general improvement in farmer wellbeing after implementing animal welfare practices, with an average score of +30.1 (SD=16.4) and no significant difference between the averages for dairy and pig farming, despite greater variability among pig farmers. Similarly, there is no gender-related variation in the solutions evaluated. However, the age of the respondents seems to influence the ratings: those under 30 and those aged 31-40 gave overall ratings of +35.1 (SD=15.2) and +33.9 (SD=16.5), while those aged 41-50 and over 50 rated the implementation of animal welfare practices at +24.8 and +29.2 (SD=16.9 and 18.6) respectively. The solutions implemented also influence the overall wellbeing of farmers. Especially, ending a mutilating practice (+36.4 SD=22.3) (e.g. stopping tail docking) appears to be a more significant way to improve wellbeing at work than adding (+26.0 ET=15.0) or modifying (+30.0 ET=13.4) a practice that responds to animal welfare (e.g. domesticating gilts or adding enrichment). Finally, farmers' wellbeing is improved whatever their motivation is, although the improvement is greater when the practice is chosen rather than imposed.

The variability in scores could reflect the importance that farmers attach to their own wellbeing: the greater the importance, the lower the score tends to be. Differences in context could also explain this variability: some farmers evaluated the end of tail docking very positively, while others are more mixed due to tail biting issues. The results show a tendency, particularly according to age, for which it would be interesting to see if they are due to a particular axis of well-being at work. Younger may tend to rate physical and mental aspects more highly than their elders, who are sometimes tired or weary of their work.

Keywords: animal welfare, farmer wellbeing, livestock farming, work conditions, impact assessment

Exploring Relational Practices between farmers and Limousin cattle to support One Welfare approaches in suckler systems.

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Developing a One Welfare culture in animal husbandry requires strengthening both human and animal welfare within their shared environment, particularly through positive human–animal relationships. From an ergonomic perspective, human welfare at work relates to the ability to perform tasks effectively, while animals positive welfare reflects their capacity to thrive through positive mental states, resilience, and opportunities to pursue meaningful goals. This study examines how these complementary conceptions of welfare are understood and enacted by suckler cattle farmers.

In suckler systems, farmers and animals coexist over long production cycles with relatively limited daily interactions. Such limited contact can increase cattle docility, potentially degrading working conditions, and raising accident risks due to animals' size and strength and human mis-reactions. To promote animals' docility, we hypothesise that some farmers implement specific strategies- referred to here as relational practices—to intentionally structure interactions and the living environment in ways that support both human and animal welfare. These strategies may vary according to farmers' experiences, values, attitudes towards animals, local resources and work organisation. This study, supported by INRAE and the French Ministry of Agriculture, examines the diversity of existing relational practices and their drivers and constraints to their implementation.

We ran an exploratory survey conducted on 30 French farms with Limousin beef cattle, in a major suckler-herd production region. Given the influence of genetics on animals' temperaments, half of the participants were selected from the French Limousin Herd-Book association. Recruitment followed a snowball sampling strategy. Farmers' work objectives, working conditions, attitudes toward cattle and relational practices were collected through semi-structured interviews and analysed thematically. To explore convergent validity between farmers' statements and herd temperament, a standardised human-approach test was also conducted by an unfamiliar experimenter on Limousine heifers.

First results show that farmers actively influence cattle behaviour and their own working conditions through intentional relational practices such as positive interactions during key periods, careful daily monitoring, or long-term selection for docility. However, these practices vary among farms as they require time, consistency, and emotional engagement—resources often constrained by a perceived heavy workload but also a desire for more personal time. This creates tension and trade-offs in daily management. By documenting the diversity of these practices and the factors shaping their adoption, this study enhances our understanding of how human and animal welfare can be jointly supported in suckler systems and ultimately how a One Welfare approach can be advanced in livestock farming.

Keywords: Relational practices, One Welfare, beef cattle, human-animal relationship

Evolution of Work Perceptions in a Group of Women Livestock Farmers Committed to One Welfare

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Concerned about their living and working conditions, as well as those of their partners and spouses, and challenged by the media and societal questioning of farming methods, women from the Rés'Agri 56 farmers' network have undertaken an in-depth reflection on well-being. Human and animal welfare. The first step was a workshop on well-being at work. The second was a presentation followed by a discussion on the issues and questions raised in the societal debate on animal welfare. A group of about a dozen female farmers, mostly dairy farmers, were selected as winners of the "Emergence GIEE (Group of Economic and Environmental Interest)" project grants from the DRAFF Bretagne (Regional Directorate of Food, Agriculture and Forestry) in 2019 and the GIEE grant in 2021 for three years. Together, they began reflecting on the concept of "well-being." They analyzed the strengths and areas for improvement in terms of "human well-being" and "animal welfare" on their farms, using diagnostic tools including a self-assessment of work practices, which addresses attitudes towards work, organization, working conditions, interpersonal relationships, and management. The completion of the self-assessment of their work also led to a greater awareness of the need to seek solutions rather than simply accept the situation. They thus affirmed a strong desire for change, even in areas they considered satisfactory. They participated in technical training courses on administrative management, on-call work during the winter, "easy, efficient, and painless dehorning," ethology, and acupuncture. They also participated in training courses on "cultivating one's own well-being" and "improving communication with partners, spouses, or employees" at the end of the program. These training courses and the group dynamics led to changes in perception, attitude, and practices, particularly in their relationships with both people and animals, and in facilitating the work environment. Thirty-seven changes were identified: 11 related to animal welfare, 7 to human well-being, and 19 to both. They acquired new skills, thereby affirming their status as livestock farmers. The on-farm training facilitated the transfer of knowledge to other members of the work team, although this remains a point of concern, hindering organizational changes, improvements in working conditions, and, in some cases, the willingness to change. The job dissatisfaction rate remains high (26% in 2024 compared to 23% in 2020), and the willingness to change has decreased (66% compared to 101% in 2020), likely linked to an improved attitude towards work (65% positive items in 2024 versus 57% in 2020). Women and farms have thus progressed towards One Welfare, a unified approach to well-being encompassing humans, animals, and the environment, without the goal being fully achieved.

Keywords: welfare, group, perception, attitude, practice

Working Group 18: Documenting Strategies of Preservation in Agricultural Work

Convenors: Fabienne Goutille (Université Clermont Auvergne, France), Sophie Chauvat (IDELE, France)

This working group documents and compares differentiated strategies developed by women and men farmers to sustain health, quality of work, and relationships with living beings, at different scales: within farms, within working collectives, and across territories. It explores how situated practices contribute to the vitality of farms, the transmission of knowledge, and the transformation of production models towards more decent and desirable forms of work. The group aims i) to document concrete strategies of preservation of self, others, and the living in agricultural work, ii) to identify the effects of these strategies on health, attractiveness, and sustainability, and iii) to compare practice-based approaches to documenting and transforming actual work across different agricultural contexts.

A Gender-Informed Perspective on the Work Challenges of New Entrants to Organic Farming

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Introduction: In France, the organic farming sector is relatively inclusive, attracting new entrants who seek meaningful work aligned with values of environmental sustainability. However, despite these motivations, the profession is widely perceived as physically demanding, financially precarious, and socially isolating. This study aims to understand the lived work experiences of these new entrants by considering both daily labor constraints and the values invested in their work, using a gender-informed perspective. More specifically, it asks how the particular emphasis placed on gender makes it possible to reveal differentiated experiences of the challenges associated with working in organic farming among new entrants.

Methods: This qualitative study utilized semi-structured interviews with 15 new entrants (6 women, 9 men) who established non-family certified organic farms in the Ardèche territory, southeastern France. Interviews explored personal trajectories, production practices, and challenges related to working conditions, including physical strain, self-care strategies, and work-life balance. The data was analyzed inductively using MaxQDA™, focusing on differentiating between the narratives of men and women.

Results: The analysis revealed gendered effects concerning several key challenges, including the available tools and equipment, physical strain, prevention strategies, balancing personal vs. professional life, and the social division of labor within couples. Women frequently noted the poor adaptation of tools and machinery to female morphology, contributing significantly to musculoskeletal disorders. Satisfaction with equipment was lower among women than men. Both genders view farming as a highly physical activity. However, strategies for coping with physical strain differed: women implemented preventative measures outside the workplace, such as practicing sport or physiotherapy, while men focused mainly on workplace adaptations, such as using efficient movements or relying on tools. Furthermore, women highlighted issues concerning work-life balance, specifically linking these challenges to motherhood or projected motherhood, often perceiving this as a turning point affecting professional plans. Men, conversely, tended to focus concerns directly linked to working conditions rather than parenthood articulation issues. Unlike some prior studies, no essentialist justifications for women's roles were found in the narratives.

Conclusion: The findings confirm that the challenges of work in organic farming are differentiated by gender, revealing dimensions like work-life negotiation that often remain invisible in conventional analyses. Addressing these structural and gender-specific barriers - including inadequate financial compensation, physical demands, and challenges related to parenthood - is essential to promote sustainable, attractive, and inclusive working conditions for all new entrants in the agricultural sector.

Keywords: Gender, organic farming, new entrants, work, attractiveness, sustainability

Sustainable work in diversified agricultural systems: the case of mixed fruit tree-vegetable system

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Within the agroecological transition, mixed fruit tree–vegetable systems (MFVS) represent a promising model for enhancing both cultivated and functional biodiversity. By combining fruit trees and vegetables within the same plot, these agroforestry systems are said to support pest regulation while producing a wide range of products, generally marketed through short supply chains.

Despite their attractiveness, MFVS raise questions regarding their practical implementation, particularly regarding work organization. Their high crop diversity and complexity challenge the sustainability of work, understood here as situations that are both efficient and bearable over the long term, while supporting personal fulfillments of workers. Analyzing work sustainability helps examine the viability of MFVS and their attractiveness to future entrants into agriculture, while also addressing growing concerns about quality of working life and work–life balance in the sector.

This study is based on 30 semi-structured interviews with farmers managing MFVS with trees older than five years, operating either individually or within various collective forms. We analyze work organization strategies through organizational interactions and the division of tasks related to orchards and vegetable production, as well as their evolution over time. The results reveal strong interdependencies between planned tasks, alongside tensions and ongoing adjustments driven by task urgency, labor availability, and skill levels. A recurring trend is an under-investment in long-term activities, leading some farmers to neglect fruit tree maintenance in favor of vegetable production, which demands immediate intensive labor but offers short-term economic returns.

Work organization in MFVS has both spatial and temporal dimensions, first one being determined by the initial spatial design choices and tree planting (e.g. single- or double-row arrangements). Over time, initial work organization tends to evolve toward greater productivity through technical improvements, increasing efficiency, diversification of crops, and to improve anticipation of workload peaks based on experience and training. We also noted a significant number of people abandoning this system. Given the workload and mental burden associated with crop diversity, collective forms of organization can enhance work sustainability. In such collectives, tasks and skills are often segmented according to crops and farm activities (e.g. weeding, equipment maintenance). However, managing MFVS in a collective context requires coordination abilities to carry out interdependent tasks. Work is generally not specifically organized to manage tree–vegetable interactions, which are only addressed through specific interface tasks (treatments, pruning).

Finally, the analysis shows that work sustainability in MFVS is also supported by satisfactory working conditions: the use of agroecological practices, task diversity, and a pleasant on-field workplace.

Keywords: work organization, sustainability of work, agroforestry, Mixed Fruit tree-Vegetable System

Detecting difficulties experienced by farmers at an earlier stage : a key for work prevention

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This research project examines the dynamics of early detection of farmers in difficulty and support for farmers within territories. The first survey method focused on collecting and analysing data on the daily stresses experienced by farmers and identifying the people who help them on a daily basis to overcome these stresses. A public workshop to present the findings of this initial survey was held in the municipality. A second survey focused on the process of formal requests for assistance made by farmers facing difficulties to an organization.

The informal assistance provided by the farmers' helpers is crucial in resolving or overcoming their daily tensions. Daily tensions are problems, worries and inconveniences experienced by farmers in their daily work. When they occur in isolation, they can be overcome. However, daily tensions are often multiple and intertwined (professional, personal, intimate). This research has highlighted the existence of formal and informal support surrounding farmers. Formal support is professional and organized into a network across the territory: those providing support know each other and interact, which enables them to quickly identify which healthcare professionals to refer farmers who call them to. Informal support is available to farmers on a daily basis: It is conscious or not and consists of lending a hand, listening to everyday stresses, and asking attentive and empathetic questions to find out how the person is feeling. Informal support is central to the early detection of difficulties, as it allows farmers to express themselves about everyday stresses. Two factors are therefore essential for effective early detection: the presence of the helper at the right time and the trust that the person being helped places in the helper (neighbours, friends, colleagues and family members...). When tensions become difficulties, informal helpers play a decisive role in farmers' calls for help to specialized support structures and associations. The relationship between informal helpers and those they help is complex.

For informal helpers, today's farmers are caught up in professional constraints (technical requirements, workload on their farm, etc.) that lead them to focus on their farms, and their neighbours are now mainly people who do not work in agriculture. Informal support is essential because it is an integral part of farmers' day-to-day work: it does not require making appointments or travelling, which would add to farmers' workload. This informal support is readily available and accessible without any specific effort on the part of farmers. However, new connections need to be forged in rural areas: places and times that are accessible to all, where people can meet and talk. Reaching out to others means dedicating time to them and thus free up time from work to look after themselves, others and their work. During this study, we did not observe any gender differences in the care provided to farmers.

Keywords: prevention, rural living, helpers

Exploring risk pathways and safety measures during the high-risk bovine periparturient period: A survivor informed study.

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Rationale and Objectives

Occupational injury and fatality associated with bovine handling are rising Globally. The periparturient period (around calving-time) presents a high-risk period for bovine livestock husbandry due to the protective nature of female bovine. A gap exists between formal safety guidance and the lived experience of on-farm decisions in relation to cow and calf handling and treatment at calving-time, facility usage and work organisation. This study explores how injury risks around calving-time present in practice and how farmer decision-making, animal behaviour, physical environments and cultural norms interact to shape exposure to harm. Practical outputs will include the development of safety resources designed to encourage farmer reflective judgement, improve facility use, and strengthen preventative controls around calving-time.

Methods

Using a qualitative research design, in-depth semi-structured interviews were conducted with a sample of Irish bovine livestock farmers (n=18) who had previously been involved in an incident with a cow around calving-time. Interview data were analysed using thematic analysis to develop a detailed, fully saturated thematic codebook capturing farmer behavioural, environmental, organisational, and cognitive dimensions of calving-time risk. Themes were then systematically mapped onto the formal accident causation model of Fault Tree Analysis (FTA), transforming qualitative insights into structured, prevention-focused risk pathways.

Findings

The findings show that calving-time occupational accidents are rarely the result of isolated unsafe acts. Rather, incidents arising from the juncture of animal defensiveness, constrained facilities, time pressure, informal work practices and experiential judgement in uncertain circumstances. Farmers' adaptive approaches such as monitoring labour progression, working alone, and prioritising animal welfare, often function as both protective behaviours and sources of amplified risk, depending on the context. Facilities and physical environments play a role to support farmers' ability to maintain distance, escape, or safely intervene with cow and calf. Although farmers readily cite hazardous events and near-misses, these incidents were typically managed informally and not reported, reducing their visibility within formal safety and prevention systems.

Implications

By examining and integrating farmer narratives with formal safety modelling, this research advances a context-sensitive grasp of risks present at calving-time, looking beyond the notion of "human error." The study provides a methodological framework for applying qualitative data to FTA analysis in an agricultural safety high-risk research context. The study findings will also assist extension services and policy makers to support farmers to maximise safety during the high-risk bovine periparturient period.

Keywords: Bovine periparturient period, Calving-time safety, Livestock handling risks, Fault Tree Analysis (FTA), farmer decision-making.

The role of trees and hedgerows in agricultural practices. An ethnographical approach of environmental preservation practices in the Belgian agricultural landscape

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The more-than-human relationship surrounding hedgerows and agroforestry practices significantly delve into socio-ecological issues (e.g. biodiversity, habitat and soil conservation; etc.) affecting farming practices and their production model.

Hedgerows, which became prevalent during the 18th-century enclosures and experienced a drastic decline - nearly 75% - by the late 20th century, are now included in initiatives like the European "Farm to Fork" strategy and national programs of the member state. Throughout time, the more-than-human relationships with trees and hedgerows have been drastically modified alongside those landscape and political changes.

Nowadays, those changes in relations reflect the tension between the neoliberal and ecological paradigm. Between February and March 2024, the implementation of the 2023 Common Agricultural Policy (CAP) incited widespread protests among farmers in Belgium and across Europe. From the end of 2025 until now, farmers are doing more and more protests against the decline of the CAP's budget, the MERCOSUR agreement, etc.

This unrest highlights the challenges of balancing pro-environmental policies with farmers' quality of life, acceptance of ecological standards and a form of justice in the (inter)national food market.

This presentation is based on a preliminary fieldwork of an interdisciplinary PhD, encompassing an ethnographical and socio-ecological approach in mixed farming setting in Wallonia, Belgium. The global objective of the thesis is to investigate how farmers do incorporate environmental preservation in their daily practices. The fieldwork focus on livestock farming and field crops. More precisely, I've been conducting ethnographical work in a farm practicing eco-grazing in the south of Belgium. Plus, I have conducted and participated in many interviews (individual and collective) with different type of farmers (organic, conventional farming) and stakeholders.

In terms of objectives, this presentation will abord those topics:

1. An ethnographical insight into how farmers incorporate intertwined, intimate dimensions: How do they materialize their relation to trees and hedgerows in their daily practices? Also, how land attachment; the care of their cattle are linked through trees implementation? Finally, I'll talk about how their current material, work and land-related constraints impact the potential of ecologisation of their farming settings.
2. Secondly, by explaining the ongoing institutional analysis, I'll show how environmental policies are established and applied in rural Wallonia, and how those policies impact the farmer's daily life.
3. Finally, by unfolding the sociocultural, relational and affective factors that influence trees and hedgerow management, I want to highlight how those dimensions are interconnected to environmental policies. Moreover, as part of the ethnographical approach, I'll abord more sensitive and familial dimensions that influence or impact those aspects.

Keywords: ethnography, hedgerows, mixed farming, environmental preservation, Wallonia

Working Group 19: Gendered Work and Working Gender

Convenors: Maya Rastouil (UMR LISST Dynamiques Rurales, DYNAFOR, France), Eva-Marie Meemken (ETH Zurich, Switzerland), Anna Kröplin (BFH-HAFL), Celestina Heepen (ETH Zurich), Emma Frison (UMR LISST Dynamiques Rurales), James Hogge (UMR LISST Dynamiques Rurales, Institut de l'Elevage), Johanna Jacobi (ETH Zurich), Katharina Krumbiegel (JRC), Manon Caudton-Fournier (ENSFEA – UMR LISST Dynamiques Rurales, VetAgro Sup – UMR Territoires), Marie Kammer (ETH Zurich), Marine Jouvin (ETH Zurich), Martina Bozzola (FiBL Switzerland), Martina Occelli (Cornell/ETH Zurich), Nora Komposch (University of Zurich), Patrick Illien (ETH Zurich), Prisca Pfammatter (University of Bern), Regula Züger (FiBL), Sandra Contzen (BFH-HAFL), Sophie Henrotte (UC Louvain), Zazie von Davier (Thünen Institute)

This working group explores the gendered dimensions of global agricultural labour, focusing on the specific challenges women face, including low wages, limited access to land and resources, precarious employment, and heightened health risks. It also engages with the data, methods, and theoretical frameworks needed to study gendered agricultural labour, highlighting the importance of intersectional, feminist, and transnational approaches. The aim is to bring together gender and labour researchers to share ongoing research on gendered work and conditions in global agricultural labour, identify key research gaps, advance gender sensitive methodologies and explore theoretical approaches.

Global patterns of intra-household and gender data gaps in national agriculture census

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Understanding how and why gender shapes agricultural production is essential to reduce barriers women currently face in accessing inputs, lands, markets and services in the sector. These barriers, often attributable to social and gender norms, contribute to lower incomes, agricultural yields, decision-making power, and agency of women in farming. The consequences extend far beyond individual women and narratives of inequality. They weaken national agricultural production, undermine food security, and slow progress towards the Sustainable Development Goals (SDGs), both in high- and low- income countries.

Gender analysis minimally requires sex-disaggregated data collected in national agriculture census. Without this data, researchers and policy makers remain uninformed on what is important for women farmers and may overgeneralize findings on gendered challenges and opportunities on the basis of incomplete data inputs. In addition, recent literature documents how intersecting social identities and roles in agriculture shapes women's opportunity in the sector, thus calling for interviewing women and men farmers working on the same farm.

Nonetheless, national agriculture census tend to follow a gender-blind design. This is especially true in high-income countries, where farm survey datasets, including the commonly used EU's Farm Accountancy Data Network, often omit basic gender information (such as the gender of the farm manager). This does not simply restrict the creation of gendered evidence, but makes sex-disaggregated analysis impossible. Even in countries where the gender of the farm manager is included in national statistics, the focus is only on one specific type of women farmer such as married-in women (e.g., Switzerland, where this happens since 2000s and a nationally representative survey on women farmers is carried out since 1970s).

To a lack of gendered nationally representative data in high-income agriculture census is juxtapose an abundance of sex-disaggregated and intra-household evidence on agricultural production collected by statistical offices in low-income countries. Specific quantitative modules are routinely developed and applied (e.g., women's empowerment metric for national statistics or WEMNS), generating an array of multifaceted quantitative evidence on who women farmers are, which barriers do they face and which agency do they have in farming. If - on the one hand - this wealth of information might be partially attributable to politics of gender mainstreaming in foreign aid for some specific regions (e.g., sub-Saharan Africa), it is evident that closing gender and intra-household data gaps has slowly but steadily led to the creation of better generalizable evidence and more targeted policies.

Building on this dichotomy, we conduct a scoping review on national agricultural census and identify which gendered information are collected. We explore patterns across countries and we study implications of data gaps in terms of evidence and policy development.

Keywords: national agricultural census, data gaps, intra-household, scoping review

TERRITORY, WORK, AND HEALTH IN AGROECOLOGY: GENDER ISSUES IN THE CHALLENGES OF SUSTAINABILITY FOR BRAZIL AND PORTUGAL

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This research project aims to analyze work in agroecological production systems (organic farming) in Brazil and Portugal, studying its repercussions on farmers, particularly on the relationship between health and work among female farmers, in light of the challenges to sustainability in different territories (Cunha & Lacomblez, 2024). This is a qualitative, descriptive, and applied research project that analyzes and understands living labor, informed by gender, using an interdisciplinary approach that integrates the theoretical and methodological framework of activity ergonomics (Guérin et al., 2001) with the perspective of ergology (Schwartz & Durrieu, 2021) and the psychodynamics of work - PDT (Dejours, 2013). This approach allows us to perform a differentiated analysis insofar as other aspects of the human cost of work (cognitive and psychoaffective) are investigated, and not only the physical aspects related to farm work.

The proposed methodology includes observation of farmers' activities (both free and systematic), individual and group interviews, and the formation of focus groups. The aim is to contribute to the analysis of agroecology work in order to understand its challenges for food production and issues related to agroecological transition, marketing, production certification, and agricultural succession.

Rural women represent almost half of the agricultural workforce and often face discrimination in society and within their families, impacting their right to food and food security. This is compounded by a lack of training and exclusion from decision-making, which often results in incomes up to 30% lower than those of male farmers, in addition to social representations that perpetuate the invisibility of women's work (IFOAM - Organics International).

The research is ongoing and highlights the need to work with women in agroecology to develop solutions that align productive efficiency with personal well-being and environmental preservation, as well as facilitate the design of sustainable work systems that contribute to health and efficiency by integrating a critical perspective of work that is so strongly impacted by climate change.

It is hoped that the results of the research will serve as a basis for public policies that promote the inclusion of young women farmers in both countries (Brazil and Portugal), ensure equitable access to support policies, and value local production and the reduction of food insecurity and job insecurity.

Financial support: This study was financed, in part, by the São Paulo Research Foundation (FAPESP), Brazil. Process Number # 2025/14601-3.

Keywords: Agroecology; Ergonomics of activity; Relationship between health and work; Sustainability of work; Gender and work; Occupational Health and Safety.

Invisible but Essential: A Phenomenological Analysis of Women's Embodied Labour in Accra's Informal Food Service Sector Using Photovoice

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Almost 90% of the sub-Saharan African workforce makes a living in the informal economy, with food systems in particular dominated by informal, often female, labour. Progress toward “decent work for all” (SDG 8) must therefore consider the specificities of gendered informal work. Yet informal wage workers remain largely invisible in policy discourse, unions, and official statistics alike. As a result, little is known about their lived working experiences.

We address this gap by exploring how wage workers and food operators experience everyday work in Accra's diverse informal food system, characterized by small, women-run traditional eateries of significant cultural, economic, and social importance. While existing research has highlighted the prevalence of informal self-employment, limited attention has been paid to the labour relations underpinning these establishments—particularly the experiences of hired employees, who remain virtually invisible in discussions of the informal food economy. This study is among the few to focus directly on informal wage employment in the food service sector and is the first photovoice project to include both employers and employees.

Twenty women – thirteen wage workers and seven employers – participated in semi-structured interviews and group discussions as part of an extended photovoice project. Participants documented their everyday work experiences through photography, voice notes, group workshops, and interviews, providing visual and oral reflections on their lifeworlds. While photovoice empowered participants to visualize experiences that may be inaccessible to researchers, interpretative phenomenological analysis (IPA) was used to explore how participants make sense of these experiences. This approach renders the stories of often marginalized women visible and recognizes the importance of their work.

Our findings highlight the physical, emotional, social, and temporal dimensions of informal food work. We show how these dimensions are experienced unequally by workers and employers and are intimately linked to power relations and dependencies. Furthermore, these pressures are embodied in the workers themselves through experiences of pain, ill-health, denigration, and time poverty. While emphasizing the hardships participants face, the paper also highlights the pride they take in preparing fresh traditional meals to feed a bustling city, an experience that contrasts with the alienation reported by workers in many other sectors. We conclude by discussing the implications of these insights for labour process theory, women's empowerment, and the future of work.

Keywords: embodied labour, informal economy, food system, gender, photovoice

Latina Farmworkers Navigating Childcare: Exploring Challenges and Resources

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A growing body of scholarship has recently focused on the experiences of childcare for farm owners and operators in the United States (U.S.) (Becot & Inwood 2024; Becot, Inwood, & Rissing 2022; Rissing, Inwood, & Stengel 2021; Inwood & Stengel 2020). Often considering the invisible labor of childcare, this research draws our attention to both the importance of childcare for farm families and rural communities, as well as the challenges of securing childcare in rural areas for those who own and operate farms. However, the devaluation of childcare labor in the agricultural sector extends beyond farm owners and operators. This problem also exists for farmworkers, who are not only essential to the survival of the agrifood system but also navigate multiple forms of marginalization simultaneously (Som Castellano et al. 2022). In U.S., the percentage of farm labor performed by those outside of a farm household has increased over time (Wang et al. 2022), and farmworkers in the U.S. are predominantly low-income and people of color (NAWS 2019-2020). To understand the experiences of childcare for farmworkers, we need to consider the challenges articulated by previous scholarship through an intersectional lens.

This presentation aims to deepen our understanding of the dynamics of securing and managing childcare during work hours in the agricultural sector, paying particular attention to the reproductive labor of Latina farmworkers. We ask, what are the experiences of securing and maintaining childcare for Latina farmworkers? In what ways do occupational factors and intersectional forms of marginalization shape these experiences? To answer these questions, we utilize data from 32 qualitative, semi-structured interviews with Latina farmworkers in Southern Idaho. We engage in an intersectional analysis and utilize a carework perspective to frame the challenges farmworkers face in securing childcare, how these challenges are shaped by structural inequalities, and the resources they use to address them. Our preliminary results suggest that several factors likely exacerbate the challenges of managing the work-family interface for Latina farmworkers. For instance, occupational factors such as the hours and seasonality of the work, as well as factors associated with gender, race and social class, such as low wages, make managing childcare more difficult. Despite the high costs of babysitters and childcare centers, research participants shared a willingness to pay more for quality childcare. In addition, respondents enacted survival strategies for their family through self-sacrifice, by utilizing institutional supports, and by relying upon relationships and social networks. By considering how Latina farmworkers experience and manage childcare, we can more fully recognize the challenges of being both a mother and a farm worker, particularly for Latina farm workers in the United States, contributing to both theory and practice.

Keywords: Farmworker Well-being; Agrifood Systems; Carework; Gendered Labor

Hard-to-Reach Workers, Hard-to-Fill Data Gaps: Lessons from Web-Based Respondent-Driven Sampling in Swiss Horticulture

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Agricultural production is highly labour-dependent. While qualitative research has documented precarious conditions such as low wages and health risks, their prevalence remains unclear due to limited quantitative data. Absent sampling frames (such as official registries) make farm workers—particularly seasonal migrants—difficult to sample with standard approaches. We address this gap by testing respondent-driven sampling (RDS), a health research approach for hard-to-reach populations. Its intuition is similar to snowball sampling (where respondents recruit subsequent respondents), but, if certain assumptions are met, yielding more representative data. Though promising for addressing farm worker data gaps, the tool has not been tested for this population. We focus on Swiss horticulture, where data collection is particularly difficult, due to linguistic diversity among both workers and farmers, in addition to the common problem of missing official registries and strict data protection laws. To manage language diversity (ca. 15 languages), we use web-based RDS. Testing RDS, we first recruited workers through farm employers who forwarded the survey, using contacts from the Federal Office of Agriculture. This yielded few responses, despite incentives, reflecting farmers' reluctance to forward the survey and migrants' hesitation about an employer-distributed study on working conditions. We then expanded recruitment to the entire workforce, including self-employed farmers and permanently Switzerland-based workers, hypothesising that this would increase the willingness and options to forward the survey. Yet few participants completed and forwarded the survey, still yielding short chains. We implemented other stepwise modifications, like using worker-organisation as starting points (aka seeds), rather than farmers. In total, the survey yielded 210 responses (78 workers, 132 employers) and the following key results: First, reaching representative samples of geographically dispersed, linguistically diverse, and poorly organised populations cannot be fully addressed by web-based RDS, at least not in our language-diverse setting. Second, despite the limitations of RDS, relevant insights can be drawn from the data. Working conditions generally align with national regulations, though high working hours concern some farmers and low pay some workers. We conclude that web-based RDS is less ideal for (migrant) farm worker populations. Thus, collecting farm worker data remains an important challenge. The most effective approach is for governments to extend labour-force surveys to seasonal migrant workers, leveraging their access to contact details. More data and research are needed, given the increasing policy attention to social sustainability in European farm, labour and corporate due diligence policy, where seasonal migrant workers are currently typically not captured in policy evaluations.

Keywords: Respondent-driven sampling, farm work, migrant workers, working conditions

The gender of the researchers as a prism for accessing data in agricultural fieldwork

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Gender-related relational dynamics are increasingly taken into account when analysing the construction of research relationships, often through researchers' reflective feedback on their difficulties in accessing the field (Arendell, 1997; Darmon, 2005). However, these dynamics are less well understood in terms of how they allow access to certain types of data. Yet sharing a gender identity can enable a deeper understanding of a specific group (Le Renard, 2011). When studying the same subject, differences in how researchers are treated depending on their identity produce data on how gender structures the investigated field, but also create differences in the type of data collected by each person involved (Bessin and Lechien, 2014). Within the agricultural world, although the proportion of women among farmers is increasing [1], they remain a small minority among employees [2]. This gendered construction of the agricultural sector invites us to question our identity as researchers and how this impacts access to data in a masculine sector. We therefore propose to show how proximity or, conversely, differences in gender identity enable access to different types of thematic data on the same subject, namely 'non-work' domains, among a population of outsourced agricultural workers.

Based on two ethnographic studies, one observational, conducted by a woman among employees of agricultural contractors involved in large-scale crop farming, and the other participatory, conducted by a man among employees working in dairy farms, this paper aims to revisit the implications of the gender of researchers in the field.

Our class and gender identities, and the roles assigned to us, impact our relationship with our respondents from the moment we arrive in the farmyard. While one of us has to establish her place upon arrival, the other has to shed the role of producer assigned to him. Gender identity also determines our ability to approach/receive information, whether solicited or not. Thus, defining oneself and being perceived as a 'woman' in the field will encourage discussions about women in the sector, their scarcity, and the difficulty of finding one's place in it, while a masculine gender identity will make such discussions difficult. Consequently, these respective positions give us access to data regarding gendered domains of 'non-work'. Intimate matters are addressed without difficulty and often voluntarily by respondents in the presence of a female interviewer, whereas for a male interviewer, the focus is mainly on "side work" (Weber, 1989).

By bringing together two contrasted field experiences, this paper highlights the richness that emerges from a systematic examination of the effects of gender on the production of knowledge.

[1] *Portrait des femmes exploitantes dans l'agriculture française*, Agreste 2020

[2] *Les chiffres utiles de la MSA*, édition 2025, MSA, p. 8

Keywords: gender, reflexivity, Practice-as-Research, wage workers, agriculture

The (Non)Performativity of Social Sustainability: Queer Farmworkers in Switzerland

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Can social sustainability be straight? While agricultural social sustainability is increasingly promoted as a response to agrarian crises and as a pathway toward justice, equity, and inclusion (Anderson et al., 2016; Christen and Schmidt, 2012; Janker and Mann, 2020), its meanings remain fuzzy and its empirics anchored in a heterosexual cisgender framework of farms organized around straight couples. While theoretically framed to center intra- and intergenerational justice, equity, participation, and care (Anderson et al., 2016; Christen and Schmidt, 2012; Janker and Mann, 2020), we show that attention to “the social” is insufficient—and potentially harmful—when it leaves unexamined the power relations and normative assumptions embedded in agrarian systems.

By rooting our analysis in performativity theory (Butler, 1988) and Queer of Color Critiques (Ahmed, 2007; Cohen, 1997), we critically interrogate what social sustainability *does* in practice: whose lives, labor, and relations does it sustain—and whose does it render invisible? Empirically, we draw on twelve months of ethnographic research with queer farmworkers in Switzerland to argue that social sustainability operates as a (non)performative: it promises justice while reproducing the very exclusions it claims to remedy.

We identify three critical interventions that queer farming practices offer to debates on social sustainability. First, they reveal how conventional metrics and policies are built around the traditional family farm and systematically render queer agrarian lives invisible. Second, they show that social sustainability is not inherently emancipatory: without intersectional approaches, it reproduces racialized, cisheteropatriarchal, and nationalist structures, functioning as a mechanism of labor extraction rather than liberation. Third, looking closely at the daily ways queer farmworkers adapt, push back, and rework agrarian life unsettles dominant ideas about labor, kinship, and more-than-human relations, showing that social sustainability can be transformative when it grows out of the fundamentally relational practice of farming.

We thus return to our provocative starting question: can social sustainability be straight? Our fieldwork shows that agriculture is already queer—organized through orientations, intimacies, dependencies, and more-than-human relations that exceed the cisheteronormative family farm imaginary. In its current form, however, social sustainability acts as a straightening force, aligning agrarian life with white, cisheteropatriarchal, and normative expectations. We argue that for social sustainability to reach its transformative potential, attention must shift from the traditional family farm toward the diverse human and more-than-human relations that actually sustain agriculture.

Keywords: queer, performativity, social sustainability, agriculture, Switzerland, more-than-human

« Force autant que t'es con, ça ne marchera pas » (“The harder you push, the stupider you look—it won't work”) : The Making of Agricultural Masculinities in Sciences and Techniques of Agro-equipment

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In agricultural worlds, the tractorisation of farms during the period of modernisation constitutes a key example of the gendering process (Chabaud-Rychter and Gardey, 2002). The introduction of the tractor contributed to pushing women and girls out of the farm and today occupies a central place in traditional agricultural masculinity (Brandth, 1995; Martin, 2025a; Saugeres, 2002). In France, this tractorisation has gone hand in hand with a symbolic revalorisation of land work. The tractor visibly embodies the change in status from peasant to farmer (Martin, 2025b). The machine elevates the person who drives it, “sitting upright on the seat,” distancing them from a peasant becoming characterised by direct contact with the land (Laferté, 2018a).

In agricultural worlds, the sexual division of labour—particularly around the tractor—was justified by constraints related to arduousness and physical strength. One might therefore expect that technological developments in mechanics, hydraulics, and cab comfort would facilitate access to these machines for all, especially women. However, women's access to certain occupations, even when made less physically demanding by technology, remains largely theoretical, as observed in the construction sector (Gallioz, 2006). This suggests that the issue is less technical than one of appropriation (Rivoal, 2018).

This paper examines the learning of agricultural techniques around the tractor as part of a gender system (Dahache, 2014; Lamamra, 2016) within vocational agricultural education, which mainly concerns boys (for exemple, The baccalaureate in agro-equipment included only “thirty-five girls during the 2022–2023 school year out of 1,399 students” (Guétat Bernard and Benet, 2023). The paper presents the first results of an ongoing PhD thesis on the making of agricultural masculinities, based on an ethnography of the course *Sciences and Techniques of Agro-equipment* in two tracks (agricultural production and agro-equipment), across several public agricultural education institutions located in different social spaces (Bruneau et al., 2018).

The analysis focuses on the masculine norms shaping this subject in relation to teachers' trajectories and social properties. Farmer-teachers promote a popular culture of tinkering and hands-on work, relying on improvisation within an “economy of makeshift solutions” (Giordano, 2020; Hugues, 2024), with limited attention to safety. Conversely, teachers socialised into mechanics emphasise safety and value soft skills (*savoir-être*) such as patience, gentleness, and anticipation (Delabie, 2019). Technical norms and physical formulas structure their discourse, distancing them from “amateur tinkering, [and] poor people's voices” (Laferté, 2018b).

Keywords: masculinity/masculinities, tractor, gender, agricultural education

Women's wine, women of the vineyards: reconfiguring femininity by working on wine farms in the Loire Valley.

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For a long time, women in viticulture have occupied a marginal position, being mainly confined to manual labor and often part-time jobs (Escudier, 2014), because of the essentialization of so-called feminine qualities, such as meticulousness or speed. This division of labor contributes to maintaining hierarchical relationships of domination. On the contrary, this paper considers the role of work in agroecological farming in the emancipation of women, whether they are farm managers or seasonal workers, by placing the discussion in the context of a just food transition.

The central hypothesis is that organic farms run by neo-farmers place greater value on women's work by better recognizing their rights and skills. Alternative agricultural systems are more likely to promote a more inclusive and socially just model of work by empowering social groups that have traditionally been dominated in agriculture.

The research is based on a qualitative survey conducted among wine-growing estates in the Loire Valley. It combines a long immersion through seasonal employment in two estates (one producing natural wine, the other partly organic and partly conventional) during the harvests between 2022 and 2025, and in-depth interviews with 10 winegrowers (including 4 women). This approach allows for the collection of diverse verbal and nonverbal material that complements each other, enabling analysis of the work experience and its organization (in terms of task distribution, for example) on the estates, as well as the career paths of women farm managers and seasonal workers, while giving a voice to minority groups.

The findings reveal ambivalent reconfigurations of women's place on the farm, between emancipation and social reproduction. On the one hand, natural wine farms are challenging the gendered order that dominates agriculture, which is akin to « silent feminism » (Lagrave, 1987): better legal recognition of women's status, access to valued tasks such as winemaking, improved quality of life and sense of purpose, and increased visibility of femininity. Efforts are also being made to empower seasonal women workers, who often occupy a disadvantaged social position. Their experience is being recognized, by playing a central role in the organization of work and the transmission of know-how.

On the other hand, forms of social reproduction persist. Seasonal women workers often remain confined to precarious, low-skilled jobs, particularly in harvesting. The loyalty of a core group of seasonal workers reflects the lack of prospects for professional advancement. Analysis of interviews reveals an internalization of the status of women in low-skilled, undervalued jobs, and a sense of fatalism. Finally, wine-growing projects initiated by “wives” remain ambivalent: they illustrate a form of dependence on the spouse who owns the vineyards, and an opportunity to become independent through their own wine project.

Keywords: women, agroecological transition, wine farm, gendered division of work, seasonal workers

A driving masculinity : the commitment of outsourced workers in arable farming

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The share of outsourced labour in agriculture has been growing since the 1990s, alongside an increase in the use of salaried workers. This communication proposes to study the population at the intersection of these two phenomena: employees of agricultural contractors. These workers, who are mainly men, find themselves in a 'double' wage relationship, caught between customers' demands and efficiency requirements from their employers. If this context could already explain an important investment in their activity to keep their job, the difficulty employers face in recruiting could allow these workers to show more resistance to illegal work hours or low wages. We propose to examine the role of masculinities as another mechanism that puts this subordinate population at work. The feminist literature on gender and technology consider machinery as elements that contribute to the shaping of masculine identities and masculine spaces, including the workspace. Agricultural masculinities are characterised by the possession and technical mastery of machines such as tractors and the domination of nature through these machines, even though those masculinities are reconfigured in line with professional evolutions such as the rise of managerialism. The literature on working-class masculinities has long associated them with spending behaviour and investment in work to the detriment of health or family life. This association is now nuanced, emphasising that these elements can characterize a 'virile' form of masculinity at work among others. In this communication, we will show how these outsourced workers construct and are constructed by a working-class masculinity that is shaped by their work with machines.

This communication is based on a qualitative study on employees of agricultural contractors, conducted through interviews (n=28, twenty-five with men and three with women) and non-participant observations of work in agricultural firms (one month). We will show how driving agricultural machinery as an activity plays a crucial role in structuring work groups around a 'machine culture'. This activity determines hierarchies among men according to their abilities, in parallel with professional hierarchy. The organisation of cereal farming and its constraints – temporal, physical and economic, which require a significant investment on the part of workers – lead to an over-selection of men, who are more socially available to fill these positions. In this context, a virile masculinity, widespread in work collectives, acts as a catalyst through an ideal of performance and validates investment in work at the expense of personal life. Finally, working relationships between bosses, clients and employees encourage this investment through professional and gender proximity, which tends to obscure wage subordination. Faced with this pressure to work, rare resistance may emerge through a defense of 'non-work' life (relationships, leisure activities) in workers' discourse.

Keywords: outsourced labour, masculinities, technology

Invisibility and Recognition of Women's Agricultural Work in the Bengal Delta: Between Empowerment and Constraint

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Women's labour is central to agricultural production in the Bengal delta (India and Bangladesh), yet it remains persistently undervalued, informalised, and rendered invisible within agrarian economies and policy frameworks. This paper examines the specific challenges faced by women engaged in agricultural work in deltaic environments marked by hydromorphological instability, agrarian transitions, and socio-ecological change. Drawing on qualitative fieldwork conducted in the Bengal delta, it analyses how women's contributions—ranging from farming and aquaculture to resource management and care work—are obscured by gendered divisions of labour, land tenure regimes, and development narratives that privilege male farmers and market-oriented production.

Beyond documenting invisibility, the paper critically engages with processes of (re)recognition promoted through development interventions, state policies, and NGO programmes aimed at empowering women and making their work visible. While recognition can open access to resources, rights, and political voice, it also generates new forms of regulation, surveillance, and normative expectations that may reinforce gendered responsibilities and intensify women's workloads. The paper highlights this ambivalence, showing how visibility can simultaneously enable recognition and impose new constraints within increasingly technocratic, project-driven governance frameworks.

By situating women's agricultural labour within the socio-ecological dynamics of the Bengal delta, the paper contributes to feminist political ecology by questioning the assumption that visibility is inherently emancipatory. It argues for a more nuanced understanding of recognition that accounts for power relations, environmental uncertainty, and women's own strategies of negotiation, partial visibility, and resistance in deltaic agrarian systems.

Keywords: Gender, agricultural labour, environmental justice

Prioritising business success over the financial security of women in agriculture

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As is the case worldwide, Swiss agriculture is a male domain, and women are often confined to the role of farmer's wife. Due to factors such as education, traditional values and legislation, Swiss farming households are closely linked to the farming business, involving exchanges of money, unpaid labour, etc.

To date, no database exists on the financial flows between the farm business and the farm household and on the corresponding money-management systems of farming couples. To shed light on this data gap, 28 qualitative interviews were conducted with women on Swiss farms, differing in the way they are involved in farm business.

The existing literature on money management systems for dual-earning couples has been utilized as a theoretical framework, as it is frequently employed to analyse gender equality in couple relationships. The framework under discussion identifies three types of money management system: separate, partially separate, and joint. The interviews provided a comprehensive insight into the allocation of financial resources between the farm business and the farm household, along with the potential implications of this distribution for the women involved.

The three types of management system of the framework were also used by couples in the study, sometimes with slight variations. In joint systems the most problematic situations for gender equality have been found. Due to interlinkage of business and household, joint means that all income and expenses, whether they belong to the farm or the household, are managed on one bank account. However, business needs are often prioritized over family and household needs. This entails potential financial risks for the women as they depend on their spouses' financial decisions. Ensuring equal legal status for both parties, fair salaries, and separate financial management can help mitigate such risks.

The analysis of the money management systems of couples running farm businesses revealed not only the sometimes precarious situation of women in agriculture but equally avenues for their avoidance. This could be achieved by raising awareness, fostering separate accounting, implementing legislative changes and ensuring transparency. This requires a change in perception of women's relevance to the agricultural system and ultimately valuing their work accordingly.

Keywords: money-management-systems, resource distribution, farm business – farm household interface

Gender-Gaps in German Agriculture - what we know regarding female labour, income and participation

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Gender equality is the fifth of the United Nations Sustainable Development Goals. Many international organisations dealing with gender equality issues, such as the OECD, the World Bank or the FAO, recommend the systematic collection and publication of gender-disaggregated data in order to provide information on the status of equality in a country or a particular sector. The overall aim of collecting this data should be to analyse this information and derive the need for action by various stakeholders. A lot of gender-disaggregated data is already collected in Germany as part of official statistics also for the agricultural sector. This includes the labour force survey as part of the agricultural census, the statistic on vocational training of farm managers, farm succession statistics and the earnings survey. However, this data is often not evaluated and reported in a gender-disaggregated manner. In many cases, it is almost impossible for interest groups, such as rural women's associations, but also other interest groups (e. g. journalists), to determine whether this data has not been collected, and thus whether there is a concrete lack of gender-differentiated data, or whether it has been collected but simply not reported. The aim of this presentation is to use official agricultural statistics in Germany and other national data sources, such as the Farm Accountancy Data Network, to show which existing data on key indicators of gender equality in agriculture are already being collected. The article focuses on the areas of 'female labour', 'education and career choice', 'women in leadership positions and farm succession', 'income' and 'access to capital and subsidies'. In addition to the existing data and the conclusions that can be drawn from possible gender gaps, the article also aims to identify gaps in data and research. Furthermore, the contribution outlines specific survey methods and data access options that would be useful in closing existing knowledge gaps on gender equality indicators in agriculture.

Keywords: gender-disaggregated data, agricultural census, FADN, gender equality

Working Beyond the Field: Gender, Social Reproduction and Seasonal Farm Labour in Spain

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Agricultural work cannot be fully understood without considering the role of social reproduction, including care work, household labour, and other practices that sustain workers' lives. Building on broader debates in feminist geography and feminist economic theory, which challenge the public–private divide and highlight the entanglement of productive and reproductive labour, this presentation examines how these insights illuminate contemporary agricultural labour.

The arguments are illustrated through ethnographic fieldwork in Huelva, Spain, one of Europe's main regions of export-oriented berry production. In this context, seasonal agricultural labour is organised through a highly gendered recruitment system that specifically targets women from Morocco with dependent children. Drawing on existing analyses of labour migration and gendered work, the case shows how social reproductive responsibilities are mobilised as part of labour management, influencing workers' mobility and ensuring their return at the end of the harvest season. This demonstrates that social reproduction is not merely a background condition, but can be actively implicated in the organisation of agricultural labour.

The presentation also examines the challenges arising from the entanglement of agricultural work and reproductive responsibilities for female farmworkers, including prolonged family separation, limited access to healthcare and reproductive services, emotional strain, and the physical and temporal pressures of combining intensive fieldwork with ongoing care obligations across borders. By foregrounding women's lived experiences, the presentation contributes to ongoing feminist debates on how productive labour and social reproduction intersect and shape inequalities in work.

Keywords: social reproduction, production, feminist geography, Spain, Morocco

Gender and labour management strategies in field crops: Evidence from Belgium

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CONTEXT

In recent years, civil society and policy makers have started to recognize the crucial role women play in agricultural systems as well as the gender disparities they face. The few case studies on gender and agriculture in high-income countries identify significant ways in which the gender of farmers influences their farm management strategies. Most of these studies focus on alternative systems, such as small-scale organic or agroecological farms, and they often exclude the majority of farming systems, such as field crops and conventional farms. Recent evidence indicates that women farm managers in field crops are increasingly associated with a labour model where most of the field work is outsourced. This trend towards labour outsourcing and full management delegation has been described in France as an emerging phenomenon associated with major challenges for agriculture as a whole, but few other studies exist on this topic.

OBJECTIVES

Building on this evidence, this study will explore the trend of labour outsourcing, and its relationships with gender, generational renewal, and farm characteristics. We focus on the field crop sector in Wallonia (Belgium), where outsourcing is recently expanding.

METHODS

Our research is based on a mixed methods approach. Secondary data from the agricultural census and social security administration will allow us to describe the agricultural and rural contractor (ARC) sector, and the evolution of farm labour in Wallonia from 1980 to 2020. Farm Accountancy Data Network (FADN) data for 92 farms will then be used to describe the trends in farm labour management strategies from 2014 to 2024, and how farmer and farm characteristics influence these trends.

Complementary to these quantitative analyses, semi-structured interviews with 50 Walloon field crop farmers and 30 ARC workers will enable a deeper understanding of how gender influences these trends. Using a thematic analysis, alongside multinomial models with FADN data, we will explore the interactions between generational renewal, gender, and labour management strategies.

RESULTS

Based on our preliminary analyses of secondary data, we observe a decreasing share of family labour, and an increasing share of hired labour in the Walloon field crop sector. National social security employment data indicate that the number of workers in the ARC sector has increased over time. While in 2007, the ratio of the number of ARC workers to farmers was 1/53, it consistently increased to reach 1/29 in 2020. Furthermore, the FADN database reveals a general increase in the amount of outsourcing in Walloon field crop farms.

IMPLICATIONS

The increased outsourcing of farm labour in the Walloon field crop sector will have important implications for environmental, social and economic sustainability of the agricultural sector. Understanding the underlying drivers of outsourcing, particularly using a gender lens, will be paramount to shape these transitions.

Keywords: Gender, Outsourcing, Labour management models, Field crops, Sustainability

Caring for Nature by Caring for People – The Invisible Relational Sustainability Labour of Landfrauen

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How do the rural women and female farmers understand and practice sustainability in their everyday lives? What values and emotions drive their actions and what structural conditions foster or hinder their sustainability practice? These are the questions that guided me through 15 semi-structured interviews with "Landfrauen" association members in the canton of Aargau that created the foundation of my Master's Thesis. Nine of the interviewees agreed to cooking interviews - a method that turned out to be highly successful in eliciting values and emotions in a familiar environment, allowed me to observe everyday routines, and practice research through connection and care - principles that were central to my feminist methodology.

My findings reveal that Landfrauen, often stereotyped as merely "specialists for crumble cakes", are critical yet systemically underrecognized drivers of ecological sustainability. Their practice of sustainability – such as food self-provisioning, mending clothes, or buying local – is rooted in an ethics of care and relationality and is driven by values of modesty, continuity, diligence and self-determination. Participants reported that their practices evoke positive emotions, although negative emotions are possible when structural conditions, like time availability or infrastructure, are insufficient. Moreover, many sustainability practices are deeply gendered: Women often shoulder recurring, taken-for-granted household tasks while men usually perform the more visible, more socially acknowledged technical work, thus perpetuating the structural invisibility of their contributions.

The approach of the Landfrauen offers a distinct alternative to dominant technocratic models in sustainability governance and shows potential for scaling deep – a fundamental shift in values, ethics, and relationships with nature – thanks to its patient, locally rooted, and counterhegemonic character.

Keywords: Eco-feminism, agroecology, women, double discourse

Legitimation in a “contested territory”: an intersectional approach to vegetable crop association knowledge

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In response to the environmental impasses of the conventional agricultural model, agroecology has emerged as a credible alternative (Levard & Mathieu, 2018; Leu, 2014), notably within the “One Health” paradigm (Dumat et al., 2024). This knowledge-intensive form of agriculture relies on the mobilization of renewed and situated forms of knowledge (Altieri & Nicholls, 2012; De Schutter, 2012; Meynard, 2017). Its growing prominence is part of a broader reconfiguration of “ecologized agricultures,” characterized by transformations in the modes of production and circulation of knowledge and a shift from a “monoculture of scientific knowledge” toward an ecology of knowledges that embraces plurality (Santos, 2011; Compagnone et al., 2018; Tisenkopfs et al., 2015a). Within this context, vegetable crop associations (VCA) have received increasing attention due to their agronomic and environmental benefits (Bedoussac et al., 2015). However, their adoption remains constrained by technical, organizational, economic, and social factors (Jensen et al., 2020; Rodriguez et al., 2021), and data remain scarce in the French market-gardening context.

This paper presents the first results of an ongoing PhD project examining the processes of appropriation, recognition, and legitimation of VCAs. The study is based on a comparative analysis of two contrasting sites: professional market-gardening farms and urban community gardens, the latter considered as “privileged spaces for the diffusion of an agroecological culture” (Scheromm, 2015). By conceptualizing agroecology as a “contested territory” (Giraldo & Rosset, 2018), the research investigates the evolving status of VCAs and the social, ecological, and symbolic requalification processes they undergo. Once marginalized under the productivist paradigm, these practices are now experiencing a reversal of stigma and are increasingly framed as innovative. This revalorization extends beyond the agronomic register to encompass dynamics of social differentiation: the ability to manage vegetal complexity and to articulate scientific knowledge, experiential knowledge, and sensitive relationships with nature has become a marker of legitimacy and distinction, prompting the renegotiation of professional hierarchies and identities. Drawing on an analysis of actors’ discourses and justificatory repertoires, the study pursues two objectives: to make visible the plurality of knowledges involved in VCAs, and to interrogate the social relations of gender, class, and race that shape their recognition or, conversely, their invisibilization. An intersectional approach (Kergoat, 2012; Dorlin, 2009; Lépinard & Mazouz, 2021) allows for the identification of processes of symbolic dispossession, as well as the logics of whiteness (White, 2018; Ferdinand, 2019) and green gentrification (McClintock, 2018; Paddeu, 2021) that traverse agricultural and gardening spaces and influence dominant imaginaries of ecological and agroecological transition.

Keywords: Agroecology, Crop Association, Intersectionality, Market Gardening, Community Gardens

The Invisible Hours: Gendered Time Use and the ‘Double Burden’ in India’s Agri-Food Systems

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Unpaid domestic and care work (UDCW) continue to be significant aspects of daily life worldwide, with notable and persistent disparities between men and women. Globally, women spend significantly more time on UDCW than men whereas in India, the gender gap is even larger with women spending over 5 hours a day on unpaid domestic and care work, compared with less than 2 hours for men. Recent studies increasingly recognize how agri-food systems (AFS) are a key employer of women in South Asia. However, the current body of research examining gendered time use, especially in rural contexts where UDCW intersects with high levels of informal labour, remains critically understudied. This is particularly true in India where current studies of women’s time burdens neglect to assess three key missing elements: firstly, the full breadth of women’s economic involvement which embraces off-farm downstream activities across the entire value chain; secondly, the simultaneity of women’s unpaid labour which often goes unrecognized in traditional time-use surveys and economic analyses and; thirdly, an assessment into the dynamic nature of gendered time use. To the best of our knowledge, no published study has yet examined temporal changes in gendered unpaid care and domestic work through an AFS labour lens, while also accounting for simultaneous activities.

We contribute towards the research by exploiting gendered time use as a lens to reveal women’s hidden economic contributions in AFS sectors and highlight the disproportionate double burden. We employ recent data from India’s cross-sectional Time Use Surveys conducted in 2019 and 2024 which provide detailed insights into the gendered distribution of UDCW. We compute descriptive statistics and tested for sex-based differences and p-values. We further explore temporal participation patterns of secondary activity across 30-minute intervals in a 24-hour period to analyse simultaneity and offer insights into time poverty.

Our findings suggest that, among participants, Indian women spend a large block of daily time on UDCW tasks whereas men spend virtually none with the gap persisting across rural and urban India. Rural women consistently engage in more time in domestic care in both years compared to rural men. Women’s days are ‘crowded out’ by UDCW responsibilities while men’s days are ‘crowded’ by paid work and education. AFS employment increases the unpaid workload for women in both years. Women spend their daily in a more fragmented and overloaded way where they disproportionately engage in multitasking roles compared to rural men. This is especially true for female AFS workers in agriculture and unpaid family helpers who experience high participation in UDCW as primary and secondary activities simultaneously, inducing time poverty. The evidence points toward an urgent need to mainstream time use data into rural development and social protection policy, ensuring recognition, redistribution, and reduction of UDCW.

Keywords: Gender, unpaid domestic and care work, time use patterns, rural transformation

Working Group 20: The Human Element of Sustainable Farming

Convenors: Prathamesh Bachche (ATB-Potsdam, Germany)

This working group explores how to effectively implement policy relevant to workplace health and safety by using practical tools from ergonomics and risk assessment. It aims i) to showcase new knowledge on how a proactive, ergonomic approach can solve long-standing health and safety challenges in agriculture, ii) to discuss various risk assessment methodologies that prioritize the degree and the severity of the risks, enabling farmers to make targeted changes, iii) to develop a collaborative, actionable plan for implementing ergonomic solutions on different types of farms, from small-scale to large-scale operations, and iv) foster networking and future collaborations among participants to continue sharing best practices in agricultural health, safety, and policy compliance.

Comparison of farmers' real protective practices with protection standards in apple growing in Quebec

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Pesticides remain widely used in agriculture to ensure productivity, meet quality standards congruent with current marketing. The health effects of pesticides can be acute or chronic, possibly resulting from exposure to a single event or repeated exposure to low doses. The scientific literature documents numerous effects on physical and psychological health. Reduction of pesticide exposure in Quebec, Canada, is based on the NIOSH "Hierarchy of Controls" model. It is based on five levels of control, from the most effective to the least effective to reduce exposure to occupational hazards: elimination, substitution, engineering controls, administrative controls, and personal protective equipment (PPE). Although they are usually considered as the last line of defense, the use of PPE is most of the time required by health and safety regulations worldwide. As several authors mention the importance of the skin as the main exposure route for pesticides, gloves and protective clothing are of paramount importance. International standards, like ISO 27065 for and ISO 18889 were recently published to define performance requirements for PPE against pesticides and improve protection for farmers.

The aims of this project were to develop a multidisciplinary methodology for evaluating the efficiency of protective clothing dedicated to pesticides and compare the ISO 27065 protective clothing with the usual protective clothing worn by Canadian farmers. The project was conducted in collaboration with Canadian 11 apple growers, all of whom were responsible for pesticide spraying in their orchards. Preliminary interviews to describe the participants' socio-demographic profile and their use of pesticides and protective clothing were conducted prior to the spraying season. Filmed observations, coupled with measurement of external skin exposure, were carried out with the apple growers during the pesticide spray preparation-filling and spraying tasks. Thematic analysis, of the verbatim and videos document the task adaptation of these protective clothing on the different phases of the use of pesticides.

In accordance with the scientific literature, our results demonstrated that the efficiency use of protective clothing was varying from one producer to another, but also, for the same producer, from one task to another (e.g., mixing vs. spraying), depend on environmental conditions (e.g., temperature) and pesticide formulation. The use of protective clothing can be seen as a "protective practice" aimed at reducing exposure to pesticides. This proposal focuses on the comparison of protection practices. Protective practices will be presented according to the tasks performed, such as mixing and spraying, but also according to the working environment designed by the producer. We will discuss these results in terms of managed and regulated safety concepts to suggest a method for evaluating the effectiveness of protective practices under actual conditions of use.

Keywords: protective practice, protective clothing, work activity, pesticide, regulated safety

Community-Based Participatory Research to Improve Farm Labor Health and Safety in the U.S. South

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Concerns about the social, health, and economic conditions of farmworkers and agricultural laborers in the U.S. have long been central to research, policy, and program interventions. From public health to economic inquiries, approaches to addressing farm labor practices and conditions vary, emphasizing both structural patterns and lived experiences. Recent literature raises new questions about farmworker health, safety, and wellness, particularly highlighted during the COVID-19 pandemic. We argue that farmworkers and agricultural laborers are not a monolithic group, as health disparities and vulnerabilities differ across communities. Our research applies the Centers for Disease Control and Prevention's (CDC) social vulnerability framework through a community-based participatory research (CBPR) approach to examine the social, economic, and environmental vulnerabilities of farmworkers and agricultural laborers in the U.S. state of Virginia, emphasizing structural and workplace perspectives about health and safety. Virginia presents a distinctive agricultural context, characterized by dominant poultry and row crop industries, small-scale diversified farms, active sustainable farming movement initiatives, and complex labor policies that shape farm labor experiences. Our mixed-method pilot study, conducted in partnership with Virginia Tech, Virginia State University, Cooperative Extension, and the Legal Aid Justice Center, engaged farmworkers, employers, and practitioners to address farm labor health and occupational safety needs through a systems-level, social vulnerability lens. Data collection combined surveys, qualitative interviews, and stakeholder workshops aligned with social vulnerability indicators, ensuring methodological rigor, participatory validity, and culturally responsive engagement. Findings reveal disparities in healthcare access, housing stability, and workplace safety, compounded by language barriers, immigration status, and limited transportation options. These vulnerabilities intersect with structural factors such as labor protections, economic precarity, and policy gaps, creating heightened risks for physical and mental health outcomes for farmworkers. Implications include recommendations for expanding research to reach more farmworkers and employers, as well as actionable program development for extension and community-based practitioners. Emphasis is placed on cross-sector collaboration, culturally competent outreach, and community-driven strategies for sustainable farming. By integrating farmworker and farmer voices with institutional partnerships, this research illustrates how CBPR can advance health and occupational safety in agricultural communities. The session will also share methodological insights and guidance for participatory research design, offering practical direction for researchers and practitioners dedicated to promoting sustainable well-being in farm labor systems as a core principle of the CBPR model.

Keywords: farm labor, health, safety, community-based participatory research

Does the New EU CAP Social Conditionality Align with Current Social Issues in Farming? A Multi-Level Assessment Using the MLSAT Methodology

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The 2023–2027 reform of the EU Common Agricultural Policy (CAP) introduces social conditionality, making agricultural subsidies contingent on compliance with existing labour, employment, and occupational safety and health (OSH) legislation. From January 2025 onwards, Member States are required to ensure that CAP beneficiaries respect rules on declared employment, wages, working time, OSH, housing conditions, gender equality, and access to social security. Although this reform marks an important shift in EU agricultural governance, its actual alignment with the structural social challenges of contemporary farming remains insufficiently examined.

This study assesses whether CAP social conditionality corresponds to the severity and distribution of key social issues in European agriculture using the Multi-Level Social Assessment Tool (MLSAT). The MLSAT framework enables a systematic, multi-level analysis linking EU policy objectives, national implementation and enforcement arrangements, and farm-level labour practices. The methodology is applied to identify labour and OSH risks, assess enforcement capacity, and reveal mismatches between regulatory intent and everyday working conditions.

The analysis focuses on labour-intensive agricultural sectors—including fruit and vegetable production, viticulture, floriculture, olive farming, and greenhouse cultivation—where dependence on seasonal, migrant, and informal labour is high. These sectors are prevalent in Member States such as Spain, Italy, Greece, the Netherlands, Poland, and France, and are often characterised by fragmented farm structures, limited mechanisation, and persistent gaps in labour inspection and enforcement.

By triangulating MLSAT indicators with sectoral labour intensity, farm structural characteristics, and OSH enforcement data, the study identifies where social conditionality has realistic enforcement potential and where structural constraints undermine its effectiveness. The findings provide new empirical insights into the operational limits of CAP social conditionality and offer targeted recommendations to strengthen enforcement, improve policy coherence, and enhance social protection for vulnerable agricultural workers across the EU.

Keywords: CAP social conditionality, agricultural labour, occupational safety and health, enforcement gaps, MLSAT

Digital and Robotic Farming in Europe: Implications for Occupational Safety and Health from a Regulatory and Labour Perspective

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Digitalisation is progressively transforming agricultural production systems through smart machinery, robotics, sensor technologies, and AI-supported decision tools. These developments create opportunities to improve productivity, resource efficiency, and work organisation, while also shaping occupational safety and health (OSH) and labour conditions. This contribution examines how European regulatory and policy frameworks address OSH and labour aspects associated with digital and robotic agriculture, with particular attention to risk profiles, protective arrangements, and implementation patterns.

The analysis is based on a mapping of more than 100 EU-level and international regulatory, policy, and standardisation documents published between 2001 and 2025, conducted within the Horizon Europe project AGRO-WELL. A thematic mapping and cross-cutting synthesis approach is applied, covering OSH, labour rights, machinery safety, artificial intelligence governance, data governance, and training and advisory frameworks relevant to smart farming systems.

The findings show that European regulatory frameworks are expanding and increasingly responsive to digitalisation, while their application in agriculture reflects the sector's organisational and workforce characteristics. OSH frameworks provide a robust preventive basis, although coverage and implementation vary across Member States, particularly in contexts dominated by self-employment and family labour. Smart farming technologies show potential to reduce physical strain and exposure to hazardous tasks, while also introducing considerations related to human-machine interaction, system complexity, lone working, and psychosocial demands. These issues are addressed to varying extents across policy domains and often depend on national implementation and advisory capacity. Overall, the mapping provides the basis for an evidence gap map that visualises areas of regulatory concentration, partial coverage, and limited or absent evidence across OSH- and labour-relevant domains of digital agriculture.

Keywords: Digital agriculture; agricultural robotics; occupational safety and health; regulatory mapping; labour policy

Working Group 22: Health and Safety in Farming

Convenors: Elisabeth Quendler (BOKU University, Austria)

This working group dedicates itself to the challenges of health and safety in agriculture, a matter often overlooked yet essential. Beyond physical perils such as accidents and health strains caused by heavy lifting, machinery operations, and harsh environmental influences, increasing attention is given to psychological aspects such as burnout, stress, and isolation. Hence, the working group covers i) physical hazards and preventative measures; ii) mental health (burnout, stress, and social isolation) and strategies for prevention; iii) political and legal frameworks to prevent and reduce workplace hazards, and iv) innovative approaches and technologies to improve working conditions. It aims at exchange of knowledge, discussion and networking, development of recommendation and exploration of future perspectives.

Evaluation of User Satisfaction with Respiratory Protective Masks in Poultry and Pig Farming

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In poultry and pig farming, exposure to dust and ammonia represents a major risk to workers' respiratory health. This risk is often underestimated due to the low sensory perception of these contaminants. While reducing exposure at the source remains a priority, the use of respiratory protective equipment (RPE) is essential in certain situations. However, the effectiveness of such equipment strongly depends on its acceptability and actual use by farmers and employees.

The QualiAir project aims to support professionals through a comprehensive approach combining self-assessment of respiratory risks, prevention recommendations, and guidance on the selection of RPE. Within this framework, the present study seeks to evaluate user satisfaction with different respiratory masks tested under real farming conditions, in order to identify the equipment best suited to on-farm practices.

An inventory identified 56 mask models from 12 different suppliers available on the French market. Following several selection stages involving occupational health and poultry and pig farming experts, farmers, and employees—based on criteria related to protective performance, comfort, and ease of use—19 masks from five suppliers were selected for on-farm trials conducted between autumn 2024 and summer 2025. Fifty-eight participants (farmers, employees, experimental station technicians, and future agricultural workers) tested these masks during a variety of tasks, for durations ranging from a few minutes to more than three hours. After each trial, participants completed an evaluation form including an overall satisfaction score (0–4), ratings for 14 specific criterias, and qualitative comments.

Statistical analysis, based on adjusted scores to correct for tester effects, identified six masks with an overall satisfaction score above 3: three reusable half-masks (3M Série6000 demi-masque, 3M Série6500, Drager X-Plore Série3300), one full-face mask (3M Série 6000 complet), one powered air-purifying respirator (JSP Powercap), and one disposable half-mask (3M Série 9322+). These models were mainly distinguished by skin comfort, good facial fit, ease of donning and doffing, breathability, and field of vision. In contrast, most of the masks tested showed limited compatibility with glasses or hearing protection and restricted communication with animals or during teamwork.

Qualitative analysis confirms the decisive importance of comfort-related factors (weight, facial fit, breathability, absence of irritation) and highlights a lack of practicality of some equipment under real farming conditions. Participants described the ideal mask as lightweight, low-profile, well-fitted, and easy to adjust, while remaining adaptable to specific tasks and working contexts. These findings indicate that no universal mask exists and emphasize the relevance of a modular approach combining collective prevention measures with informed selection of respiratory protective equipment.

Keywords: Respiratory protective equipment (RPE), Poultry and pig farming, Occupational health and safety, Dust exposure, Ammonia exposure

Assessment of Physical Workload in Viticultural Tasks for the Development of an Evaluation Framework for the Socially Sustainable Selection of Exoskeletons in Viticulture

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Viticulture is characterized by high physical workloads and an increasing shortage of labor, which has led to growing interest in ergonomic support systems such as exoskeletons. While their effectiveness has already been extensively studied in industrial applications, there is a clear research gap in the agricultural context, particularly regarding task-specific workload profiles of repetitive viticultural activities. This master's thesis addresses this gap by systematically investigating the applicability of active and passive exoskeletons as well as their usability, with a specific focus on evaluating their practical suitability for use in viticulture and expanding knowledge on their ergonomic load-reduction potential. Based on the current international state of research, typical physical stressors – such as constrained posture, overhead work, and manual material handling – are analyzed and linked to known risk factors for work-related musculoskeletal disorders in agriculture.

The Objective of the study is therefore to identify suitable methods for assessing physical workloads in viticulture in order to enable a task-specific selection of commercially available exoskeletons.

To quantify ergonomic workloads associated with individual viticultural tasks, established work science assessment methods are applied, including the key indicator methods developed by the German Federal Institute for Occupational Safety and Health (BAuA) and the Ergonomic Assessment Worksheet (EAWS) of the European Union. Both methods allow for a differentiated evaluation of viticulture-specific activities across multiple workload dimensions, such as force exertion, constrained postures, repetition frequency, and manual load handling. The results of the task-based assessments are presented comparatively and incorporated into the development of a standardized evaluation framework that integrates ergonomic, technical, and practical criteria, thereby enabling the usability-based comparison of different exoskeleton systems.

Through the comparative assessment of physical workloads in viticulture, this study makes a significant contribution to the development of an evaluation framework for the socially sustainable implementation of exoskeletons in viticulture, as well as to the human-centered improvement of working conditions and the preservation of occupational health within a shrinking workforce in industrialized countries.

Keywords: exoskeletons, viticulture, workload assessment, ergonomics

From practice to design: rethinking orchard sprayers for risk prevention in apple growing beyond pesticide spraying

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In 2021, Canada's agricultural sector comprised 189,874 farms, 15% of which were located in Quebec. Agricultural work involves several health risks, notably those related to pesticide use and machinery handling. Accident statistics in this sector often involve machinery. The literature highlights the inadequacy of certain sprayer design elements in terms of environmental protection and occupational health and safety. More specifically in Quebec, tree crop sprayers are designed and manufactured outside Quebec, based on contexts that do not align with the province's occupational health and safety (OHS) standards.

With the aim of intrinsically preventing risks for apple growers' OHS and protecting production and the environment, this action-research project brings together a multidisciplinary team and uses a mixed-method approach. Its main objective is to define, with ecosystem stakeholders, design criteria for tree crop sprayers based on the actual work activity of Quebec apple growers.

Following an ergonomic approach, the project includes data collection through interviews with agricultural centers selling sprayers, as well as interviews, observations, and alloconfrontation interviews with apple growers. These data collections allowed us to document the process from sprayer acquisition to usage practices. Data collection also revealed various tasks related to sprayer use, such as preparing pesticide mixtures, spraying, cleaning, and also commissioning the equipment, performing inspections, maintenance, repairs, and winterizing the machines. In fruit production, the literature mainly identifies OHS risks during pesticide mixture preparation and spraying in orchards. However, sprayer use goes beyond pesticide spraying. Tasks considered complementary, often performed before and after spraying, are poorly documented, yet essential to ensure equipment longevity. This project hypothesizes that risks are also present in these complementary tasks.

This presentation will highlight OSH barriers and facilitators lived by Quebec apple growers during these complementary tasks. It will also shed light on design criteria for sprayers, considering the evolution of practices in Quebec apple production. Although this communication focuses on sprayers in apple production, several findings are transferable to other agricultural machinery and contexts.

Keywords: Sprayer, fruit grower, ergonomic, health and safety, design criteria

Everyday work and use of assistive technologies among farmers with physical disabilities in Austria: a qualitative study

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Agricultural work is characterized by high physical demand and safety risks. In Austria, many people with a recognized disability work in farming. There is little evidence how disabled farmers perceive their daily work and which practical assistive tools and adaptations they use. This study addresses this gap through a qualitative interview study with ten farmers with physical and sensory disabilities in Austria.

Semi-structured interviews were conducted between August and November 2025 via telephone, video calls, and face-to-face meetings, depending on participants availability and accessibility. The sample includes a wide range of disabilities (e.g. mobility impairments, amputations, visual impairments), farm types (livestock, arable farming, viticulture), and regions. Data were analyzed using qualitative content analysis with a deductive category system focusing on everyday work, technical aids and devices, challenges, and support needs.

The results show that most participants continue to perform core agricultural tasks but adapt their work through individualized strategies, task reorganization, and selective use of technical aids. Also help of family members is crucial. Those affected use simple built aids such as handrails and extra steps. They prefer robust and easy-to-use solutions. Digital or „smart“ technologies are partially perceived as unsuitable due to high costs, energy dependence, and limited reparability. Instead, farmers emphasize the importance of robust, mechanical and easily maintainable solutions.

The study highlights that disability in agriculture does not primarily result in withdrawal from work but in increased effort, risk awareness, and dependence on adaptive practices. Advisory services, peer exchange, and targeted grants for retrofits are needed. The findings underline the need for participatory development of agricultural technologies, improved funding mechanisms and policy measures that recognize the specific working conditions of small-scale farms. Manufacturers should co-design with users and test for farm conditions.

Keywords: Farming, disability, everyday work, assistive technology, qualitative study

Considerations for Supporting Farmer and Rancher Mental Health

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Mental health concerns are prevalent within farm and ranch communities. Faced with daily stressors, often beyond their control, farmers and ranchers experience higher levels of psychological distress and a higher suicide rate than the general public. The North Central Farm and Ranch Stress Assistance Center (NCFRSAC) aims to create and share mental health resources for agricultural producers and those who support them across 12 states in the North Central region of the United States. The research team utilized a quantitative, conceptual content analysis to a). identify the medium of the resources reported on the NCFRSAC website, b). evaluate at what levels of the Farm and Farm Family Risk and Resilience socio-ecological model resources on the NCFRSAC website are targeted, and c). identify potential gaps in resources shared on the website. Content analysis determined that hub pages are the most common resources on the web page, with most resources targeted at the individual level of the socio-ecological model. The current research suggests a programmatic gap in resources targeted toward the farm, community, organizational, and policy levels of the model. Previous research suggests that mental health literacy campaigns may not lead to farmers' behavior change or result in fewer suicides. While resources assisting at the individual level are meaningful, addressing each level of the socio-ecologic model is most influential in suicide prevention efforts. This content analysis suggests there is room for additional resources supporting the farm, community, organizational, and policy levels of the model. Providing resources that strengthen mental health literacy to those who interact with farmers in businesses, communities, and organizations can help strengthen a mental health safety net (Cuthbertson et al., 2020). Imagine a world where every agricultural lender, every seed dealer, every veterinary clinic, and every feed and seed store has mental health and wellness resources and program opportunities (designed with farmers and ranchers in mind) lying out on the counter for customers to see every single time they walk into the business. Quantitative research should be conducted to determine the level of effectiveness of interventions at each level of the model. Qualitative work exploring not only what resources were useful, but how and why those resources were used could also strengthen this work. Additionally, research that helps provide insight to practitioners and illuminates how individuals, families, and communities involved in agriculture experience a mental health crisis, is critical to build empathy about and understanding of the problem. This content analysis research contributes to an international discussion about farmer and rancher mental health and may provide insight for other practitioners and researchers.

Keywords: mental health, farmer, rancher, socio-ecological model

Understanding and managing fatigue risk in Australian agriculture sectors

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Fatigue occurs when work demands limit the ability to obtain sufficient sleep. As fatigue increases, workers experience declines in physical and cognitive functioning that can compromise safety and productivity, in addition to negatively impacting broader health and wellbeing outcomes. Within Australian agriculture, a range of sector-specific characteristics may increase these risks. Seasonal periods such as sowing and harvest can require extended work periods over multiple weeks, while early morning starts, night work and consecutive days are routine on some farms. This project aimed to co-develop practical tools with industry to support farmers in mitigating the impacts of fatigue on health, safety, and productivity in their operations.

A four-phase program of work was undertaken. Phase 1 involved qualitative workshops (n = 45; 26 managers/owners, 19 workers) to identify the causes and consequences of fatigue and current controls in Australian cotton, grain, dairy, and egg farms. Phase 2 involved a national survey (n = 126; 82 managers/owners, 44 workers) to capture broader perspectives on these topics. Phase 3 comprised co-design workshops to develop a fatigue management toolkit. Phase 4 trialled this toolkit across three agricultural sites: a family-owned ~ grain enterprise; a corporate cotton enterprise spanning multiple production sites; and a family-owned dairy farm with minimal hired labour. Qualitative data (Phases 1 and 3) were thematically analysed, and survey data (Phase 2) were examined using descriptive statistics. Trial feedback focused on feasibility, usability, and tool refinement, including a structured fatigue risk assessment process.

Findings indicated substantial similarities in fatigue risk profiles across sectors. Long work hours, intense seasonal peaks, high workloads, and reduced opportunities for sleep were consistently reported. However, sector-specific challenges were also identified (e.g., split shifts in dairy; harvest periods in cotton and grain). Participants identified a range of current and potential strategies for mitigating fatigue-related risk, including rostering practices, in-shift breaks, prioritisation of rest, work design, supervision and communication, self-assessment strategies, work culture, education, and the provision of food and accommodation. Across sectors, participants emphasised the need for clear, practical approaches to mitigating fatigue risk. The toolkit was viewed positively across trial sites, with users highlighting the importance of tailoring tools to suit operational contexts, staffing structures, and seasonal demands.

This project demonstrates that effective fatigue risk management in Australian agriculture requires flexible, context-appropriate controls, a consistent assessment process, and an understanding of sector-specific and enterprise-level risk profiles. Phase 4 of the project is ongoing, with future research needed to evaluate the safety implications of the co-developed toolkit.

Keywords: fatigue, grain, cotton, dairy, eggs

Psychological Safety as One Key Constant in Providing Motivation and Engagement in a Storm of Change for Farming Enterprises

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Production systems dynamically impact farm workplaces and thereby the experience of work for farm employees. This constant change acts as a stressor for farm leaders as well as workers, having an adverse impact on engagement and job commitment. In this environment, it is important to have a strong understanding of what type of workplace culture can weather the storms of change and underwrite consistently attractive and motivating work. Psychological safety has been studied in most industries globally, but very little is understood about how it is activated in agriculture. Psychological safety is an emergent property of workplace interactions that affords employees the ability to engage in speaking up in high risk circumstances without fear of castigation or reputational damage. In this climate, feedback is readily requested and given, innovation and learning is encouraged from all levels in the hierarchy, and communication is the tool that ensures every worker feels valued and heard. Further still, a psychological safe climate is shown in the literature to aid in meeting basic psychological needs, developing thriving employees who readily engage in their work. Preliminary investigations in to the nature of psychological safety among Australian cotton farming teams have shown a positive relationship with team learning behaviour, and engagement, and lower turnover intention. Furthermore, it is proposed that the process by which psychological safety encourages greater team learning behaviour and leads to lowered turnover intention is as a result of employees' basic psychological needs being met when they are able to learn free from fear and shame, thus improving opportunity for autonomous work, competent task implementation, and stronger more authentic work relationships.

Recent developments in the Psychology of Working Theory link the concept of decent work to meaningful work through basic psychological needs satisfaction (BPNS) (Blustein et al., 2023). In seeking to understand how this may be applied to agriculture, we propose a framework for a psychologically safe workplace that meets the basic psychological needs of farm employees and how it can be advocated to agricultural leaders, including industry bodies and farm owners and managers, to assist farming enterprises through dynamic change, no matter the production system. Furthermore, we propose that more research needs to be done in to the investigation of the antecedents and outcomes of psychological safety in farm workplaces in order to understand how this factor can be best utilised by the agricultural industry to attract and retain workers.

Blustein, D. L., Lysova, E. I., & Duffy, R. D. (2023). Understanding decent work and meaningful work. *Annual Review of Organizational Psychology and Organizational Behavior*, 10(1), 289-314.

Keywords: psychological safety, basic psychological needs

Farming Mental Health: Co-produced Approaches to Promoting Wellbeing in Irish Agricultural Communities

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Background

Farmers experience unique working conditions characterised by long hours, heavy physical demands, financial pressure, regulatory complexity, climate-related uncertainty, and geographic and social isolation. Collectively, these factors heighten vulnerability to stress, loneliness, and mental-health challenges. Irish qualitative research highlights how eroding autonomy, regulatory pressure, identity-based expectations, and persistent isolation intersect with deeply rooted norms of stoicism, self-reliance, and the “good farmer” ideal, shaping both distress and delayed help-seeking among farming populations.

Aims and Approach

This paper presents practice-based analysis of Irish rural mental-health initiatives co-produced by the presenter in partnership with agricultural organisations, statutory bodies, EU-funded networks, and community-led groups. Drawing on the Farm Well Hub, the FARMRes Erasmus+ programme, and interventions informed by the Five Ways to Wellbeing framework. The paper examines how co-design and co-production enhance cultural relevance, trust, and engagement within farming communities.”

Conceptual Framing

While “stoicism” is often framed as a barrier to help-seeking, farmers themselves frequently describe it as a protective and inherited strength, passed down through generations much like the land itself. Mental health in agricultural communities therefore sits at the intersection of this dichotomy between vulnerability and cultural resources. Understanding how these risks and strengths interact is essential to developing interventions that are both effective and culturally legitimate.

Key Implications

The paper advocates that strengthening mental-health literacy, embedding structured peer-support, and grounding interventions in farming norms and culture are central to effective rural mental health promotion. Co-produced initiatives -- designed with farmers rather than for farmers -- offer meaningful partnership and support, and can create powerful pathways for shared resilience and wellbeing across farming.

Keywords: rural wellbeing, farming mental health, resilience, co-production, Five Ways to Wellbeing, community-based mental health, farmer support programmes

Mental Health among Farmers in Rural Germany: A Mixed-Methods Approach to Assess Symptom Prevalence, Risk Factors, and Implications for Occupational Health

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Background: Agricultural work is characterized by unique occupational stressors affecting both physical and mental health. While physical hazards in farming have received considerable attention, mental health remains a neglected aspect of occupational health in German agriculture. International studies indicate elevated rates of depression, anxiety, and suicidality among farmers, with financial uncertainty, social isolation, long working hours, and regulatory pressures contributing to poor outcomes. In Germany's agricultural sector, systematic research on farmers' mental health is lacking, creating a critical knowledge gap. Understanding mental health status and associated risk factors is essential for developing comprehensive occupational health strategies in agriculture.

Research Aims: This research specifically addresses farmers' mental health in rural Germany, focusing on: (1) prevalence of depression, anxiety, and suicide ideation among German farmers; (2) occupational, sociodemographic, and farm-structural risk factors in the German agricultural context; (3) German farmers' perspectives on mental health challenges, coping mechanisms, and barriers to support services.

Methods: The approach employs a sequential explanatory mixed-methods design in Lower Saxony, Germany. The quantitative phase comprises a population-based cross-sectional survey using validated instruments (PHQ-9, GAD-7, PSS-10, SBQ-R) combined with an agriculture-specific stressor questionnaire. The qualitative phase includes semi-structured interviews with purposively sampled farmers. Analysis integrates multivariate regression modeling for risk factor identification and thematic analysis of interview data.

Contributions: This research aims to provide comprehensive insights into German farmers' mental health, establish validated assessment tools for the agricultural context, and identify specific risk groups and protective factors. Findings will inform evidence-based prevention strategies, workplace interventions, and policy recommendations to improve occupational health and safety in agriculture. By addressing mental health as integral to occupational health, this approach contributes to understanding health risks in agricultural work, supports development of decent work conditions in the agri-food sector, and provides empirical evidence for discussing prevention measures and innovative approaches to improve worker wellbeing within agricultural health and safety contexts.

Keywords: mental health, occupational health, mixed-methods, Germany, risk factors

Mental illness as an occupational hazard: Neurotoxicity and psychosocial risks in agriculture

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Rationale and Objectives: Occupational health protocols in agriculture have historically prioritized physical safety, overlooking the silent epidemic of mental illness devastating the workforce. This study shifts the focus from the fatal outcome, as suicide, to its root causes: the severe occupational mental disorders that precede these tragedies. We argue that the hegemonic industrial model exposes farmers to a lethal combination of neurotoxic and psychosocial risks, distinct from the challenges found in agroecological contexts. Grounded in the Psychodynamics of Work and a critical perspective on Worker's Health, the objective is to demonstrate how the organization of work acts as a structural hazard, generating specific forms of suffering determined by the labor bond, crop type, and social markers such as race and gender.

Methods: We conducted a narrative literature review analyzing the relation between work conditions and mental suffering in Brazil. The analysis distinguished between production models, labor bonds, and demographic profiles. The data was interpreted through the Psychodynamics of Work framework, classifying workplace exposures not merely as individual troubles, but as determinants of mental suffering linked to the hierarchies of agricultural labor organization.

Findings: Occupational hazards are unevenly distributed across the agricultural workforce. On the chemical front, the hegemonic industrial model subjects workers to chronic neurotoxic exposure, a risk significantly reduced in agroecological contexts. This chemical violence is particularly acute for wage laborers and the Black rural population, where the hazardous environment erodes mental stability and provides accessible lethal means. Intertwined with this is moral suffering, which varies by labor bond. For family farmers, the loss of autonomy and rigid production prescriptions transform financial pressure into guilt. Gender dynamics further stratify these risks: while men bear the weight of the provider role, women face the invisible burden of reproductive toxicity and double duty. Ultimately, the worker internalizes systemic pressures as personal incompetence, dismantling psychic defenses and leading to burnout.

Implications: Suicide in agriculture must be reframed not as an isolated event, but as the terminal consequence of untreated occupational diseases rooted in the hegemonic production model. Current safety frameworks are insufficient because they fail to address how race, gender, and labor bonds modulate vulnerability. Therefore, ensuring safety demands political frameworks that go beyond generic protective equipment. Effective prevention requires distinct strategies: promoting agroecology as a health-oriented transition, stricter regulation on neurotoxins to protect wage laborers, and economic autonomy policies for family farmers. Recognizing these stratified risks is essential to mitigate the structural hazards before they evolve into irreversible fatal outcomes.

Keywords: Mental suffering; Suicide; Neurotoxicity; Psychodynamics of work; Agroecology

Pesticide use practices among farmers in a region of Eastern Algeria

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A descriptive cross-sectional survey was conducted among 110 farmers working in a region of eastern Algeria between January and June 2022. The objective was to describe the socio-professional characteristics of farmers, estimate the prevalence of pesticide use, and analyze conditions of use.

Data were collected using a questionnaire administered directly on agricultural farms. The majority of farms were open-type (85.5%), while 14.5% were mixed-type. Market gardening was the predominant activity (53.6%), followed by cereal farming (49.1%), arboriculture (36.4%), and forage production (3.6%).

The study population was almost exclusively male (97.3%), with a mean age of 42.1 ± 15.7 years. More than three-quarters of the farmers were non-smokers (76.4%). Educational level was university-level in 28.2%, primary in 26.4%, middle school in 21.8%, secondary in 17.3%, while 6.4% were illiterate or nearly illiterate. The mean duration of agricultural activity was 15.7 ± 12.6 years.

All farmers participating in the study reported using pesticides, mainly herbicides (83.6%), followed by insecticides (53.6%) and fungicides (49.1%). The most commonly used personal protective equipment included gloves (80%), boots (68.2%), and masks (61.8%), whereas coveralls (37.3%), hats (36.4%), goggles (22.7%), and aprons (19.1%) were less frequently used.

Consumption of food or beverages during pesticide application was rare ($\leq 2\%$). Nearly all farmers (97.3%) reported washing their hands and face after use, 65.5% took a shower, and 49.1% washed contaminated clothing separately. However, only 7.3% had received specific training on the use of plant protection products.

Pesticides were mainly stored in dedicated storage facilities (63.6%), 30.0% of farmers stored them in general-purpose storage areas, 9.1% in the field, and 6.4% in gardens or homes.

Unwanted pesticides were disposed of together with other waste in 37.3% of cases, buried in 15.5%, or abandoned on-site in 8.2% of cases.

Empty containers were often disposed of inappropriately, mainly through incineration (70%) or with household waste (23.6%); they were left on-site in 4.5% of cases and reused for other purposes in 3.6%.

These findings highlight widespread pesticide use associated with insufficient training and hazardous waste management practices, emphasizing the need to strengthen awareness and preventive actions in the agricultural sector.

Keywords: Farmers, Pesticides, Conditions of Use, Prevention

Health as determinant of farm injury risk: evidence and implications

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Farm injuries remain a major occupational health problem in Irish agriculture. Most farm safety interventions focus on the farm environment and farmer behaviour. Less attention is given to how farmer health affects farm safety. This paper explores the links between physical and mental health and farm injury risk and examines the prevalence of these conditions among Irish farmers using a narrative literature review of international peer-reviewed studies examining links between farmer physical and mental health and farm injury risk. The evidence was synthesised to outline the health-related mechanisms and pathways contributing to occupational injury in agriculture. Irish data were included to show the prevalence of these health conditions in Irish agriculture.

Several health-injury pathways were identified. Physical conditions such as musculoskeletal disorders or obesity reduce strength, balance, and mobility, increasing the risk of falls and machinery accidents. Cardiovascular disease affects stamina and can cause breathlessness, impairing energy and reaction times.

Mental health issues, like stress or fatigue, affect focus and task performance, while mental illnesses like depression impair cognition and reaction time. Medications for mental or physical health conditions can also contribute to cognitive impairment. Age and comorbidities intensify these pathways.

Irish data showed high prevalence of these conditions: 74% of farmers have four or more cardiovascular risk factors, 56% reported musculoskeletal disorders, 24% experienced burnout, and 50% had significant sleep problems. These health-related risk factors indicate significant injury vulnerability in the Irish farming population.

Farm safety and farmer health are interconnected and cannot be addressed in isolation. The evidence showed bidirectional relationships: injuries cause pain, limit mobility, and increased stress. This leads to further health decline, creating a reinforcing cycle. Many health conditions are preventable through health interventions, ergonomic modifications, and improved work organisation.

Current safety interventions rarely address farmer health directly. Integrating health screening, wellbeing support, and tailored interventions, such as cardiovascular and weight management, sleep support, and ergonomic farm design, can reduce injury risk while improving overall wellbeing. Interventions should be farmer-centred, evidence-based, and tailored to enterprise type, season, age, and gender. Interventions should be farmer-centred, evidence-based and tailored to seasonal demands, enterprise type, age, and gender.

Policy should recognise farmer health as a core component of farm safety. Implementation requires a multi-actor approach and coordination between agricultural extension services, occupational health providers, mental health services, and primary care. This integrated approach can reduce injury risk while improving farmer health and wellbeing.

Keywords: farm injury; farmer health, farm safety

Working Group 24: Landscapes and Lifescapes of Support

Convenors: David Christian Rose (Harper Adams University, United Kingdom), Jennifer Howse (Royal Agricultural University, United Kingdom), Rebecca Wheeler (University of Exeter, United Kingdom), Sarah Kyle (University of Exeter, United Kingdom), Conor Hammersley (New York Center for Agricultural Medicine and Health, USA), Tomás Russell (University College Dublin, Ireland), Linda Reissig (Agroscope, Switzerland), Uta Devries (Thünen-Institut)

This working group explores how life and work (in all its forms) in the agricultural sector can affect mental health and what types of support networks and interventions, including those provided through, or for, networks of advisors or other so-called 'accidental counsellors', can help to reduce stressors and help individuals cope with challenging situations. It investigates how strengthening mental health across these interconnected groups not only reduces harm but also enhances the sustainability and attractiveness of farm work, helping to retain a skilled and healthy rural workforce. The working groups aims to shed further light on how the mental health of those who live and work in farming communities (including farmers, workers, family members, and 'accidental counsellors') can be better supported including from a structural or psychological perspective.

Dairy Consolidation, Identity, and Mental Health: Landscapes and Lifescapes of Support in Rural New York

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Dairy farm consolidation in the northeastern United States has accelerated in recent decades, reshaping the social, cultural, and psychological foundations of rural life. In New York -- where small and mid-sized dairies have declined sharply and farmer suicide rates remain among the highest nationally -- these structural changes have significant implications for identity, continuity, and mental health. This study examines how farmers navigate shifting landscapes and lifescapes of support, including family networks, community ties, and “accidental counsellors” such as veterinarians, extension agents, hauliers, and lenders.

A qualitative, phenomenological study was conducted in Delaware County, New York, a region marked by rapid farm loss, weakened rural infrastructures, and elevated distress. Thirty-six farmers and key informants participated in interviews and focus groups (40+ hours, December 2024–August 2025). Reflexive thematic analysis explored how structural pressures, cultural expectations, and emotional wellbeing intersect.

Four themes emerged. First, consolidation, price opacity, and administrative volatility undermined autonomy and dignity, creating “rules you can’t win by” and fostering chronic stress. Second, dependence on a shrinking set of processors and auditors produced persistent vulnerability and ontological insecurity. Third, masculine ideals of competence, provision, and intergenerational stewardship persisted even as structural conditions made them increasingly unattainable, intensifying shame and perceived failure. Fourth, the degradation of rural lifescapes -- including the loss of neighboring farms, community institutions, and local services -- deepened grief, isolation, and hopelessness.

Support networks were uneven: informal relationships remained vital, while many accidental counsellors felt underprepared for mental-health conversations, and formal services were often distant or culturally mismatched. Strengthening advisory networks, building the capacity of accidental counsellors, and improving rural behavioral-health infrastructures are essential to supporting identity, dignity, and the sustainability of agricultural lifescapes.

Keywords: Dairy farm consolidation, Farmer mental health, Support networks, and accidental counsellors, Masculine identity and ontological security

Supporting the Supporters; Lived Experiences of the ‘Accidental Counsellor’

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Rationale: Farmer well-being is recognised as an area of concern with farmers facing high levels of stress, depression, and above average suicide rates. Farmers are less likely than the general population to seek professional well-being support although research suggests some gain support from those around them, individuals referred as ‘accidental counsellors’. Despite increased awareness, farmer well-being continues to decline and there have been initiatives to equip ‘accidental counsellors’ with training and tools to aid them in supporting farmer well-being. There is limited exploration of the lived experiences of these ‘accidental counsellors’, their role in supporting farmers, the impact of doing so on their own well-being, and how equipped they are to offer well-being support.

Objectives: (1) Understand of the lived experiences of individuals occupationally aligned with livestock farmers, (2) appraise how well equipped those occupationally aligned with livestock farmers are to support farmer well-being, (3) understand how supporting livestock farmers well-being may impact the well-being of those in aligned industries.

Methods: A total of 80 semi-structured interviews were completed with individuals occupationally aligned with UK and ROI livestock farmers. Individuals were grouped according to their primary role into one of four categories; veterinary professionals (n=20), buying and selling of livestock (n=18), assurance and inspection (n=15), and business consultants or advisors (n=27). Interviews were conducted either at the individuals’ place of employment or online and recorded to allow for qualitative data analysis using reflexive thematic analysis within NVivo version 15.

Findings: Many interviewees felt the term ‘accidental counsellor’ well described their role in supporting farmer well-being. Repeated reference was made to being a ‘farmers’ confidant’, a valued position which arose from repeated interactions, emersion within the agricultural community and trust from farmers. Although many interviewees saw their position in supporting farmer well-being positively, a number had been exposed to traumatic events which had long lasting effects on their own well-being. Interviewees were often placed in challenging positions where conflict between their primary role and supporting farmer well-being occurred and difficult decisions needed to be made. Few individuals felt equipped to support farmer well-being, unaware of where to direct farmers, what they should say or do, and how to balance farmer needs alongside the needs of their primary role. Many suggested a need for support from their employers and colleagues, as well as wider organisations.

Implications: Whilst equipping ‘accidental counsellors’ with training likely holds benefit for farmer well-being, a greater awareness of the experiences of ‘accidental counsellors’ will ensure training is tailored and effective, and that ‘accidental counsellor’ well-being is also promoted.

Keywords: me

Toward better support for mental workload: comparing dairy and poultry farmers' definitions and perceptions

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Mental workload is a growing concern for farmer mental health and farm sustainability, yet it remains under-researched among livestock farmers. Defined as the total cognitive effort required to perform a specific task within a given time frame (Longo, 2022), excessive workload can impair health and work motivation. This exploratory study aims to identify and weight key factors contributing to mental workload, farmers' perceptions of these factors, and their coping strategies, with implications for support networks. Dairy and poultry farmers have been chosen to capture production- and sector-specific determinants.

16 Breton farmers (8 dairy, 4 laying hen, 4 broiler ; 5 men, 5 women, all farm owners) were selected to capture diverse working situations. Semi-structured interviews were conducted in spring 2024 and analyzed using thematic analysis. A qualitative approach was chosen to explore subjective experiences and context-specific determinants across production systems, allowing for transferability of findings to comparable farming contexts.

Most farmers reported high mental workload, with only 4 considering it well balanced. Despite this, 11 of 16 expressed general satisfaction with farming, while 3 considered leaving. Respondents showed heterogeneous workloads and varying ability to take time off; most found work–life balance difficult to achieve and in need of improvement.

A key contribution of this study is the identification of multidimensional, sector-specific contributors to mental workload, enriching our understanding of farmer mental health. The components of mental load are numerous and perceived differently by farmers. Animal care was demanding but well-accepted. Routine work burden was central for dairy farmers, especially those working alone or in couple, while poultry farmers emphasized sanitary management stress. Technical and economic pressure was a major shared stressor, though satisfactory remuneration helped make it bearable. Administrative tasks were increasingly burdensome, with fear of inspections more pronounced among dairy farmers. Paid labor was both a strain (due to human relations and administrative management for dairy farmers, and logistics and labor shortages for poultry farmers) and a lever for better time organization.

Learning to communicate and share one's difficulties, whether with family, peers, or technical advisors, is often perceived as challenging but remains essential for alleviating mental burden. Many also pointed to perfectionism as a key mental strain amplifier. Farmers emphasized the importance of peer groups and local support—such as accountants, veterinarians, and advisors—in understanding and managing their mental workload.

These findings underscore that mental workload management requires both on-farm strategies and a broader, better-equipped or sensitized professional support ecosystem.

Keywords: livestock farmer, poultry, dairy, mental workload, support

Talking Futures: Supporting Farmer and Advisor Wellbeing Through Future-Oriented Conversations

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Rationale: Farming communities face significant mental and physical demands, including economic pressures, regulatory instability, social isolation, long working hours, and climate-related stressors. These pressures can reduce farmers' capacity to reflect, plan, and engage in adaptive decision-making as a result of impacted wellbeing. Advisors, educators, and other trusted contacts often act as "accidental counsellors", supporting farmers beyond their formal role whether professional or voluntary. This can create exposure to secondary stress and inability to maintain personal boundaries, highlighting the need for approaches that support wellbeing for both farmers and advisors within non-clinical interactions and alongside appropriate professional support.

Objectives: This paper introduces Talking Futures, a practical framework designed to enable advisors to engage farmers in future-oriented conversations where awareness of wellbeing is enhanced through relational and goal oriented engagement while protecting advisor wellbeing and role boundaries.

Methods: The framework was developed through conceptual synthesis of peer-reviewed empirical research on farming wellbeing, both physiological and psychological, extension and advisory practice, and psychosocial competence, alongside theory-informed integration of Emotional and Social Competence (ESC), Psychological Safety (PS), and Holistic Goal (HG) setting.

Findings: Embedding ESC and PS within conversations around HG enables advisors to recognise early indicators of strain, gauge farmers' cognitive, emotional, and motivational capacity, and support adaptive, future-oriented planning. HG functions both as an indicator and generator of wellbeing, revealing whether farmers have capacity for forward planning while enhancing agency, directionality, and motivation. At the same time, the framework can equip advisors with relational tools to maintain boundaries, notice wellbeing indicators requiring more specialist focus, moderate emotional load, and safeguard their own wellbeing.

Implications: Talking Futures offers a low-stigma, non-intrusive approach to supporting farmer wellbeing that aligns with the everyday realities of advisory work. The framework has implications for advisor training, organisational support, and policy, contributing to more resilient advisory relationships, sustained wellbeing among accidental counsellors, and enhanced adaptive capacity and therefore social sustainability within farming systems.

Keywords: Agricultural Extension, Farming Communities, Wellbeing, Holistic Goal Setting, Psychological Safety

Informal support for mental health in farming: Understanding the experiences of ‘accidental counsellors’

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Informal support networks are increasingly recognised as vital for promoting wellbeing within farming populations. This paper presents findings from a research project examining the experiences of professionals who regularly interact with farmers—such as farm advisors and veterinarians—who are frequently drawn into providing unplanned emotional support as part of their everyday work. These ‘accidental counsellors’ play an important role in sustaining informal care within agricultural communities but their motivations for offering support, and the challenges they encounter in doing so, had received limited attention prior to this research, particularly in the UK context. Drawing on qualitative interviews and focus groups conducted in southwest England, the paper examines the emotional and ethical complexities faced by accidental counsellors, including issues around maintaining professional boundaries, managing emotional distress and ensuring personal safety, and explores potential strategies for improving training and support. The findings are conceptualised through a relational ethics of care perspective, which offers an holistic understanding of health that emphasises the mutual, interdependent and co-constructed nature of caring relationships between farmers and accidental counsellors. Our conclusions highlight the need for tailored training and support to safeguard the wellbeing of accidental counsellors and sustain the resilience of these informal care networks.

Keywords: Mental health, Informal support, Accidental counsellors, Relational care

Overview of potential stress measures applicable in the agricultural context

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Rapid transformations in agriculture, driven by economic pressure, ecological requirements, digitalisation, labour shortages, and site-adapted farming, have profound implications for farmers' mental health. Research consistently shows that farmers experience higher levels of stress-related outcomes, including anxiety, burnout, depression, and reduced well-being, compared to the general population. In Switzerland, burnout prevalence among farmers is notably elevated, posing risks to long-term productivity, resilience, and social sustainability. Despite growing awareness, stress remains a poorly operationalised concept within agricultural sustainability frameworks.

This research builds on prior research on digital transformation and burnout in Swiss agriculture and aims to identify a suitable, robust instrument for measuring stress in the agricultural context. Stress in agriculture is conceptualised along a continuum ranging from well-being and resilience to anxiety, burnout, depression, and, in extreme cases, suicide. While psychology offers validated instruments for assessing stress-related constructs, their integration into agricultural and social sustainability research remains limited and inconsistent. Conversely, social sustainability indicators often address well-being only vaguely and without validated measurement tools.

Using a systematic literature review combined with expert interviews, this project evaluates existing stress measurement instruments from clinical, occupational, and organisational psychology and assesses their applicability to agriculture. The objective is to propose a stress assessment tool that is both scientifically validated and suitable for use as an indicator of social sustainability in farming systems. The research further explores conceptual overlaps and distinctions between psychological stress measures and social sustainability indicators.

A transdisciplinary, participatory research design is adopted, integrating perspectives from psychology, agricultural sciences, sustainability research, and ICT and human interaction studies. Farmers and other stakeholders are actively involved in the early, exploratory phase through qualitative methods, including participatory workshops (World Café). This approach ensures contextual relevance and practical applicability.

By systematically developing and embedding a validated stress measure within social sustainability indicator frameworks, this research advances current approaches that have relied on fragmented concepts and unvalidated tools. The resulting instrument aims to support evidence-based interventions, inform agricultural policy, and contribute to the long-term resilience and social sustainability of Swiss agriculture.

Keywords: stress, mental health, burnout, social sustainability, measure

Putting the Farmer First: Collaborating to support the physical and behavioral health of people working in agriculture

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Since 1998, Colorado AgrAbility Project (CAP) has promoted independence and enhanced the quality of life among producers by providing the support they need to begin, remain in, or regain employment in agriculture. CAP has developed a comprehensive collaborative framework that integrates multiple evidence-informed training programs to address the physical and behavioral health needs of people working in agriculture throughout Colorado. CAP combines the strengths of in-person on-farm assessments[1] with four key behavioral health programs: COMET (Changing Our Mental and Emotional Trajectory) training[2], LandLogic Model trainings for practicing mental health providers[3], Legacy video community screenings with community workshops, and the ag-tailored counseling voucher program known as the Colorado Agricultural Addiction and Mental Health Program (CAAMHP).

Together, these programs create a comprehensive physical and behavioral health support ecosystem that addresses the elevated suicide rates, injury risks, and unique psychological challenges faced by Colorado's agricultural workforce. Grounded in research, these collaborations represent a model for rural mental health intervention that other states and countries can adapt; demonstrating how targeted, culturally relevant programming can effectively serve populations traditionally underserved by conventional mental health services.

By integrating prevention, intervention, and direct service across multiple delivery mechanisms, the Colorado AgrAbility Project's collaborative framework provides a sustainable, evidence-informed model supporting physical and behavioral health challenges while respecting the unique cultural and practical needs of rural agricultural communities.

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[3] Farmers face one of the highest rates of suicide. This social worker believes the solution is buried in their land. (2025, April 10). *The Guardian*. <https://www.theguardian.com/environment/2025/apr/10/farmers-mental-health-crisis-trump>

Keywords: Mental, Physical, Well-being, Health, Human

Expanding Rural Community Mental Health Systems in Farming Communities: A Case Study in Intergroup Dialogue among Faith Leaders and Behavioral Health Providers

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Purpose. Rural areas face challenges accessing behavioral health care services, and faith leaders and behavioral health providers are critical, trusted leaders in the community. However, collaboration between these groups is often hindered by conflicting perceptions of their roles in addressing rural mental health needs. Intergroup dialogue (IGD) is an evidence-based technique to increase communication processes and bridge differences. Our study aimed to develop and pilot test an IGD curriculum in a rural Nebraska community to improve collaboration among faith leaders and behavioral health providers and expand behavioral health services.

Methods. Using the National Institute for Mental Health levels of intervention as articulated in the Clergy Outreach and Professional Engagement (COPE) model, we developed an IGD curriculum by interviewing content experts representing faith leaders, behavioral health providers, extension agents, and IGD facilitator perspectives. Two pilot sessions were conducted with six behavioral health providers and six faith leaders in Nebraska across two groups (with three of each role in each group). Sessions focused on trust-building, sharing experiences, honoring differences, and identifying common ground.

Evaluation included a post-survey assessing group climate, self-reflection, COPE model outcomes, and curriculum feasibility and acceptability, plus review of session notes and qualitative feedback. Data were analyzed using one-sample t-tests.

Results. A two-session, 3-hour IGD curriculum was implemented with six behavioral health providers and six faith leaders across two groups. Sessions resulted in strong potential for ongoing collaboration. Faith leaders rated positive group climate highest (mean = 9.7/10, SD = 1.3), while self-reflection had the lowest mean (6.0/7, SD = 4.7). Behavioral health providers scored COPE model outcomes highest (mean = 22.8/25, SD = 2.6) but noted challenges in IGD feasibility (mean = 20.0/25, SD = 4.0).

Qualitative feedback emphasized the importance of connection-building and trust, yet highlighted barriers such as faith leaders' hesitance to refer congregants without understanding providers' methods. Participant recommendations included creating community forums and shared resources. Following discussions, participants created a resource listing local behavioral health services and specialties for faith leaders to share with congregants. The group identified the local chamber of commerce as a key partner in promoting farmer mental health through their support of thriving small businesses.

Conclusions. This pilot study demonstrates the feasibility of using IGD to foster collaboration between faith leaders and behavioral health providers in rural communities. With further refinement and testing, the curriculum may serve as a scalable tool for rural communities to improve the availability, accessibility, and acceptability of behavioral health services.

Keywords: Agricultural Mental Health, Faith Leaders, Behavioral Health Providers, Dialogue

The Mental Health of Farm Wives

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Rationale

Farming is a high-stress occupation with poorer levels of mental wellbeing than the general population. As a result, research into farmers' mental health has increased significantly in recent years. Most studies understandably focus on farmers and farm workers; however, very little attention has been paid to those living and working alongside them. This is potentially an oversight given the family-based nature of many farming businesses.

Approaching this topic with both professional experience as a rural counsellor and lived experience as the wife of a fourth-generation farmer, I chose to focus specifically on the mental health of farm wives (including girlfriends and partners). This research formed part of my Master's degree in Counselling and Psychotherapy Practice and met all Bath Spa University ethical requirements.

Objectives

The aims of the research were to:

1. Develop a clear picture of mental health among farm wives
2. Gain deeper understanding of the struggles they face and contributing factors
3. Identify available support, levels of engagement, and barriers to accessing that support
4. Give a voice to a significantly under-represented group in research

Methods

The study used a questionnaire completed by 466 UK participants to explore the role of farm wives, prevalence of mental health difficulties, contributing factors, and support accessed. Findings from the questionnaire informed four semi-structured interviews, enabling a deeper exploration of lived experience of being a farm wife and its impact on mental health.

Findings

The findings centred on the theme of support. Farm wives often hold multiple supportive roles, providing financial, logistical, and emotional support to the farm business, household, and family. Many reported that while they support others, they receive little support themselves, leading to isolation and negative impacts on mental health.

Overall, 91% of respondents reported struggling with their mental health at some point, over 50% within the previous six months, and 65% felt agriculture contributed to these difficulties. Additionally, 51% reported that supporting a partner with mental health difficulties negatively affected their own wellbeing and family life.

Although many participants were aware of support services, few accessed them. Cultural factors such as self-stigmatisation, feelings of failure, and identity were key barriers to help-seeking.

Implications

All too often there is an expectation in mental health support provision that you can reach the "hard to access" farmer via their spouse or partner. The toll this adds to a group who are already overburdened and struggling with their own mental health raises the question "how do we support the supporters?" Information from this study can help address the absence of targeted support for those in farming outside of the primary "farmer" role, and help to break down some of the stigma and barriers to accessing that support.

Keywords: Mental Health, Agriculture, Support Burden

Addressing Suicide In Agriculture. Supporting and Preventing the biggest hidden danger today.

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Suicide remains one of the most significant yet under-recognised dangers facing agricultural communities worldwide. This presentation draws on insights from a Nuffield Farming Scholarship that explored suicide, mental health, and support systems within farming communities across a range of countries worldwide.

The author has a unique position in that they are a trained mental health nurse, currently living on a dairy farm and working as a Clinical Lead with oversight of all mental health cases in the NHS in their rural area. The author is also a trustee for the Farming Community Network, one of the largest agricultural charities in the UK. They have used this experience and network to complete their Nuffield Farming Scholarship journey and travels.

Based on international travel, interviews, and engagement with farmers, rural professionals, and support organisations, the presentation examines how suicide risk in agriculture is shaped by the interaction of structural pressures. Pressures which include financial volatility, regulatory demands, isolation, labour shortages, and succession challenges - and cultural norms of stoicism and self-reliance. These pressures are experienced differently across age, gender, role, and life stage, with important implications for how mental health support is accessed and delivered.

The presentation highlights examples of successful programmes and regimes across difference countries. As well as identifying persistent gaps in research being delivered to those working in agriculture, the limited reach of charitable organisations despite their critical role, the importance of the effective framing - particularly the use of positive, non-stigmatising language and safe story telling practice.

The presentation will argue for more coordinated, role-specific approaches to suicide prevention in agriculture that move beyond individual resilience, and aims to stimulate discussion around research priorities, practice, and cross-national collaboration.

The presentation frames suicide prevention as a psychosocial continuum - spanning prevention, early intervention (which is where often the 'accidental counsellors' are), intervention, recovery, and outcomes that are sustainable - demonstrating that responsibility must be shared across individuals, relationships, organisations, and systems. It highlights practical strategies for strengthening support networks, improving access to services, and promoting evidence-informed, context-sensitive approaches in agricultural communities.

Keywords: Mental Health

Mental Health in Agricultural Contexts: Does the issue lie with farmers or farming?

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Rationale: In the context of the stark figures relating to ongoing issues for farmers' mental health internationally, there is a growing body of work examining the accumulative nature of stressors on farmers' wellbeing in contemporary agriculture. The problem is framed as a dissonance between the dynamic demands of policy, economic and environmental compliance, outpacing the capacity of 'agricultural' advisors and farmers on the ground to adequately respond to these changes. This study builds on this work, by moving beyond seeing this as a binary of whether the issues underpinning farmer mental health 'lie with farmers or with farming'. Rather, it frames 'the problem' within a socio-ecological model of health and applies the concept of intersectionality to provide a framework to understand how the issues impacting on farmer mental health are a consequence of multiple intersecting interpersonal, structural and socio-cultural factors.

Objectives: A dual conceptual lens, moves beyond looking at 'farmers' as a single, uniform category, to examine their position at the nexus of multiple overlapping spheres of influence, moving away from an individualistic or reductive approach to mental health, towards a more 'environmental' fit. Further, situating farmers' struggles within an intersectional lens, recognises that the accumulation of stressors themselves is not homogenous, rather the impact of shifts in ecological spheres, are different for discrete groups or individual farmers.

Method: Online qualitative interviews (n=15) were conducted with policy developers, designers and facilitators of the 'On Feirm Ground' training and agricultural advisors. Purposive sampling and thematic analysis were used to explore participants' perspectives

Findings: Analysis revealed three main themes reflecting macro and micro perspectives within farming.

- i) **'Pressure pots':** farmers and advisors navigate dynamic and accumulative, intersectional; constant transitions within policy/compliance, changing socio-cultural role/identity as farmers and resources.
- ii) **Evolving advisor roles:** transitioning from supportive allies to farmers, to creep of 'surveillance role', corresponds to accumulative compliance demands at policy level.
- iii) **Embracing the complexity of mental health:** willingness to acknowledge the complexity of mental health issues, and commitment to understanding and responding to them, at all ecological levels e.g. departmental collaboration, farmers openness to embracing change.

Implications: The paper argues that the framing of farmer mental health within broader agricultural agencies, is critical to understanding the resilience of challenging mental health outcomes. A socio-ecological and intersectional approach, provides a framework for all stakeholders to understand the dynamic and accumulative impact of change and transitions in contemporary farming, and how they create both challenges and opportunities for supportive landscapes/lifescapes in farmer mental health.

Keywords: Mental Health, Farming, Ecological Model, Intersectionality

Expanding access to professional behavioral health services: Lessons learned and recommendations from the U.S.

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Agricultural producers and workers experience unique stressors and circumstances and experience barriers to accessing beneficial mental health services. In the US, the United States Department of Agriculture (USDA) established four regional networks to expand access to professional behavioral health services to agricultural communities. The objectives of this study are to describe and compare the various types of professional behavioral health programs in four US states, share lessons learned, and make recommendations for program best practices.

In a 12-state region in the US, four states are providing free professional behavioral health care; Illinois, Missouri, North Dakota, and South Dakota. These programs differ but share a common goal of reducing barriers to mental health services for agricultural communities. Illinois Extension issues vouchers to agriculturalists upon request. The vouchers are then redeemed with any of the 80+ mental health providers affiliated with the program. Similarly, Missouri Extension accepts requests for services and refers agriculturalists to the University of Missouri Psychological Services Clinic (MU PSC). The MU PSC established a rural telehealth counseling service to connect agricultural clients with a licensed mental health professional counselor. North Dakota State Extension and South Dakota State Extension contract with a behavioral health clinic system in their respective states to provide similar services to agricultural communities. In both states, the multi-site clinics offer good geographics coverage and multiple modalities for patient participation.

While demand for these programs has remained consistent since 2021, there are challenges to developing and administering programs to expand professional behavioral health services. Program set up and administration is time and resource intensive, requiring contracts and other legal agreements between partnering organizations. Building program awareness and trust, especially among rural and remote communities, requires statewide partnerships and industry buy-in. Program evaluation is critical, but being considerate of confidentiality and anonymity, especially when stigma continues to preclude agricultural populations from participation in mental health care, makes evaluating changes in mental health status challenging.

Recommendations for new programs include building timelines and investing in personnel to get programs established and building partnerships with organizations that can serve as ambassadors and proponents of the programs. Providers should have experience working with agricultural communities or be provided necessary competency training. Finally, program evaluation should be designed and implemented early in the program process.

In the US, Extension Services can help reduce barriers to mental health care among agricultural communities, however, programs should be thoughtfully designed and developed in partnership with trusted agricultural organizations.

Keywords: agriculture, mental health, services

Thinking Landscapes of Support through the Interpretative Frameworks of Wellbeings and Moral Economy

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The concept of the 'landscape of support' has only recently been introduced in the context of farming and mental health, leaving considerable scope to connect it with other theoretical frameworks. Landscapes of support refer to the complex embodied and organisational spatialities that emerge through formal and informal support relationships. To move beyond approaches that focus mainly on identifying and locating trusted organisations and individuals for farmers and farm workers, and to better integrate individual experiences with social and structural conditions, this paper connects the concept of the landscape of support with the theoretical approaches of wellbeings and moral economy. For both wellbeings and moral economy, there is no definitional specificity or conceptual consensus across disciplines. Therefore, the paper addresses these theorisations through a critical review and update of the literature, considering them as interpretative frameworks. Research on wellbeings is highly interdisciplinary. This paper reviews several theoretical approaches to wellbeings from across the social sciences, enabling a better understanding of how people create, conceptualise, experience, express, and imagine their own and others' wellbeings within various social and cultural contexts. This is relevant, as farmers' trustees, or so-called 'accidental counsellors', may come from diverse professional and social backgrounds, not only farming, and bring their own perspectives on agricultural systems and their social and political implications for their own and others' mental wellbeings. To further understand structural, social, and subjective dynamics, the paper adopts the theoretical approach of moral economy as interpreted by Andrew Sayer and Susan Narotzky. This framework assumes that people live and experience their lives within complex processes of judgement involving moral, material, and social power differentials in relation to others, and according to experienced, expected, and desired wellbeings. Applying a moral economy perspective highlights the moral sentiments and dilemmas, social relationships, and perceived injustices that may influence conceptions of wellbeings among accidental counsellors. Connecting the concept of the landscape of support with the interpretative frameworks of wellbeings and moral economy involves integrating the research agenda into the morally, politically, and emotionally distressing agricultural and related dynamics that promote or hinder the emergence of wellbeings in rural communities. This may enable a better understanding of the root causes of poor mental wellbeings among both farmers and those who support them, and ultimately may lead to more effective and just interventions to promote their mental health and wellbeings.

Keywords: Landscapes of support, wellbeings, moral economy, accidental counsellors

Working Group 25: Living and Working in Agriculture

Convenors: Florence Becot (Pennsylvania State University, USA), David Meredith (Teagasc, Ireland), Sandra Contzen (Bern University of Applied Sciences, Switzerland), Majda Černič Istenič (University of Ljubljana/The Research Centre of the Slovenian Academy of Sciences and Arts, Slovenia), Duška Knežević Hočevar (The Research Centre of the Slovenian Academy of Sciences and Arts, Slovenia), Julie Sorensen (Northeast Center for Occupational Health and Safety, USA)

This working group is about understanding farm populations' lived realities in agriculture and identifying solutions that support decent and fair living conditions as a conduit to increasing social sustainability and the attractiveness of the agricultural sector. It conceives social sustainability as that farmers, farm workers, and their families can meet their households' social and economic needs along their life course and are satisfied with their quality of life. The aim of this working group is 1) to further the scientific debates on social sustainability in agriculture with an eye towards understanding who works on the farm, under what conditions, and how to best support them and 2) to develop new networks of scholars to work towards transnational and transdisciplinary collaborations. The group invites theoretical, empirical, and discussion paper submissions along with interactive session proposals that explore aspects connected to the social sustainability of farming.

Health and Healthcare Access Issues: Disturbing Trends in our Nation's Producer Communities

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Although the U.S. has been routinely recognized amongst developed nations for its comparatively poor population-level, health outcomes, pockets of the U.S. population are reporting health outcomes that are of particular concern. In this paper we look at healthcare access, as well as the economic and political trends that are severely impacting the health and welfare of many U.S. food producers. Experiences and observations from industry advocates offering health and case management assistance to producers are supplemented with population level data to demonstrate the considerable inequities and alarming trends impacting the wellbeing of these workers and business owners. In highlighting these issues we seek to alert policy-makers, health providers and public health professionals to the need for a more proactive and tailored approach for ensuring the health of producer communities.

Putting the researchers in context: *Julie Sorensen (PhD)* is a social epidemiologist who has worked to address health and safety issues in the Northeast agricultural and commercial fishing populations since 2001. Her interests include qualitative, human behavior and intervention development research. *John May (MD)* is a physician who has served agricultural producers and commercial fishermen in the Northeast for over 30 years, providing occupational healthcare, conducting research and developing programs to improve the health and safety of producer populations.

Producer industry advocates: *JJ Bartlett (MBA)* serves as the President of Fishing Partnership Support Services. Mr. Bartlett has worked in the health care industry for over twenty years and in 1997 created, launched and managed the Fishing Partnership Health Plan. This plan reduced the number of uninsured fishing families in Massachusetts from 40% to 13%. Mr. Bartlett continues to advocate for fishing families in and has offered testimony to the White House Office of Health Reform on rural health issues and hard-to-reach populations. *Julianna Simons (MSPH, CHES)* is a Program Manager at the Migrant Clinician's Network, serving the farmworker community in this capacity since 2014. Her areas of interest and advocacy have largely focused on environmental health and worker health and safety. She has conducted research with farmworker families to identify their barriers to addressing occupational health concerns in primary care settings. *Patrick O'Hara (MSW)* is as a social worker at the New York Center for Agricultural Medicine and Health, where he has worked with farmers, farmworkers, and farm family members for nearly two decades, offering case management and counseling services. In his role as a case manager, he has assisted producers with filing disability claims, gaining access to healthcare and health insurance and applying for assistive technology for those producers who are permanently disabled due to an occupational injury.

Keywords: Health, healthcare, occupational health, occupational safety, health disparities, ethics, agriculture, farmworker, commercial fishing

“Psychological Support Only Puts Out Fires”: Farmers’ Accounts of Health, Responsibility, and Well-Being in Post-1991 Slovenia

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Rationale and objectives: Since Slovenia’s independence in 1991, agriculture has shifted from a planned economy to a market- and EU-CAP–oriented model that increasingly promotes sustainability, while simultaneously demanding that farmers be both competitive entrepreneurs and socially and environmentally responsible actors. This restructuring has coincided with farm closures, sectoral insecurity, and serious occupational health risks, suggesting that standard statistics may not fully capture farmers’ lived suffering. Motivated by these trends, the author examines how farmers understand, experience, and express their physical and mental well-being.

Methods: The author applies the “good farmer” and “ordinary ethics” approaches to explore whether a good farmer is also a healthy farmer. The thematic analysis is based on anthropological field research conducted between 2021 and 2022 in the rural region of Pomurje. In addition to participant observation, semi-structured interviews were conducted with approximately 40 adult participants from 24 farms about their understanding of well-being and health.

Findings: The study shows that farmers’ well-being is often subordinated to a work ethic that normalises endurance and continuous labour, making health a moral and culturally embedded ideal rather than a universal category. Men frequently conceal problems due to shame and responsibility, while women more often voice distress related to relationships and caregiving. Although health is seen as essential for “good work,” it is commonly neglected due to overload and structural pressures. Participants largely attribute poor well-being to wider social and economic conditions – weather extremes, low prices, labour shortages, patriarchal farm relations, and weak social recognition – rather than individual fault.

Consequences: The findings suggest that distress is often hidden or postponed because endurance is a moral standard of a “good farmer”, shaped by gendered expectations. As farmers attribute poor well-being to structural pressures rather than personal failure, purely individualised psychological support may not fit their lived realities. The study shows that health is not only a biological or medical condition, but also a moral imperative and an expression of the social and cultural worlds of farmers. It therefore argues for understanding health in agriculture as a multidimensional phenomenon that can only be addressed within the context of cultural practices, local meanings, and social inequalities, which place farmers in tension between normative expectations and daily survival.

Keywords: well-being and health, the good farmer and the ordinary ethics approaches, anthropological study, Slovenia

The health and wellbeing of women in farming: Initial results from a survey in England and Wales

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Research on mental health in agriculture has predominantly focused on men and women who live and work as farmers. In doing so, studies often overlook the many other roles that women in farming occupy, including those who work on farms or provide essential support as spouses, partners, or family members. To address this gap, we conducted a cross-sectional survey of women who live and/or work on farms in England and Wales. The study aimed to improve understanding of the prevalence of mental, physical, and reproductive health issues in this group. It also aimed to identify protective factors to inform targeted interventions designed to increase support, social sustainability, and the living conditions of women in farming.

The survey was completed by 2,058 women, including farmers, wives, farm workers, and farm daughters. Measures assessed multiple indicators of mental health including subjective mental wellbeing, perceived stress, loneliness, and resilience. We also measured self-rated physical health and sleep quality. Farming specific factors, including stress, care-giving, decision-making involvement, and the perceived positive and challenging aspects of farming, were also assessed. Data were analysed using MANOVA and Structural Equation Modelling.

Findings indicated high levels of poor mental health and wellbeing, which were consistently worse when compared to national norms. We also found significant differences across the life course with women aged 75 and over and reporting significantly better mental wellbeing outcomes than those aged 45 and under. We consider our findings in relation to broader social sustainability challenges in agriculture, including access to support services, isolation, and the value of women's contributions to farm labour.

These findings expand the evidence base on social sustainability in agriculture by focusing on a population that has been largely overlooked in research. The identification of protective factors offers evidence-based targets to design interventions to improve the quality of life of those who live and work on farms. This study provides a replicable framework that can be applied in other national contexts to support transnational, collaborative development of targeted interventions.

Keywords: women; wellbeing; stress; isolation; sustainability

Enhancing farmers' well-being and the social sustainability of farming through good practices: translating Agricall in Slovenia

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Rationale and objectives: Improving occupational safety, health, and well-being (OSH-W) in agriculture requires comprehensive, well-considered, and proven measures. Transferring successful or effective practices from one environment to another is one option. However, such a transfer cannot be direct/definitive; it requires thorough knowledge/understanding of the barriers/incentives in both the original social context and the one to which good practices are transferred. This work discusses the transfer of the Belgian service Agricall – an interdisciplinary, confidential support for farmers in distress (telephone calls and farm visits to address technical/legal/economic/psychosocial issues)—to the Slovenian environment, which differs from the Belgian one, e.g. in farm structure, social, cultural, and institutional context. The objectives are to identify barriers and incentives for transferring this service to the Slovenian context and to develop policy recommendations to strengthen OSH-W support in EU agriculture.

Methods: This case study employs a structured transfer plan. Evidence sources include document analysis, a detailed description of the Agricall practice, and qualitative feedback from the community of practice (public agricultural advisory services, agricultural organisations, occupational safety and health actors). Transmission conditions are examined at the micro level (needs and obstacles of farmers and families), meso level (organisational capacities, inter-institutional cooperation, staff skills and competencies), and macro level (policy and legal frameworks, funding, governance). Feasibility is assessed by acceptability, appropriateness, practicality, and sustainability, distinguishing core functions from flexible components.

Findings: The study is ongoing, but preliminary results indicate a strong need for such services, as farmers face a combination of social, economic, and psychosocial pressures. Barriers at the micro level include stigmatisation, concerns about confidentiality, and access issues. At the meso level, incentives include synergies with existing public advisory service capacities, while barriers include fragmented sectoral responsibilities, varying organisational readiness, and insufficient staff capacity. At the macro level, incentives relate to EU and Member State commitments to improve OSH-W in agriculture; barriers include unclear funding, cross-sectoral management, educational and legal gaps.

Consequences: By mapping the various conditions for transfer, the study identifies what must be preserved (e.g. confidentiality, interdisciplinary response, rapid access) and what can be adapted (e.g. institutional arrangements, mix of funding sources). This can inform EU policymakers about the conditions for scaling up OSH-W support services for farmers in all Member States, including sustainable financing models, cross-sector coordination, minimum standards for confidentiality and quality, and support for national adaptation.

Keywords: farmers' well-being, advisory service, support for farmers in distress, translation of good practices

Farming under Pressure: A Scoping Review of Stress–Coping–Well-Being Pathways Among European Farmers Using the Stress Process Model (2000–2025)

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Rationale: Farm work in Europe is increasingly shaped by sustained pressure arising from volatile markets, expanding regulatory demands, environmental uncertainty, and changing social expectations. Although farmers are widely recognised as a high-risk occupational group for stress, burnout, and reduced well-being, the evidence base remains fragmented across disciplines, outcomes, and methods, with disproportionate emphasis on adverse mental-health endpoints and limited integration of coping processes and resources. Guided by the Stress Process Model (SPM), this scoping review addresses the following question: How are occupational stressors, coping processes and resources, and well-being outcomes conceptualised as interacting to shape farmer well-being in Europe?

Objectives: To (i) identify dominant work-related and contextual stressors examined in European farming research; (ii) synthesise how coping strategies and coping resources are conceptualised and measured; (iii) map and characterise the range and patterning of multidimensional well-being outcomes; and (iv) assess the extent to which studies model stressor–resource–outcome pathways, including moderators (e.g., gender and farm-household structure).

Methods: Following JBI guidance and PRISMA-ScR, we searched bibliographic databases and targeted grey literature for empirical studies on farmers and farm families in European contexts (2000–2025). Data from 115 included studies were charted against core SPM domains (contextual and work-related stressors; coping strategies and coping resources; moderators; and well-being outcomes) and synthesised thematically.

Findings: Farmer well-being emerges from interlocking stressor configurations under uneven resource conditions, rather than isolated exposures. Key stressors include seasonal workload intensity, income volatility, administrative and compliance burdens, climate uncertainty, safety risks, social isolation, and perceived public devaluation. Stress processes are strongly patterned by gender and farm-household structure: men more often report stoic, productivist coping (overwork, emotional suppression, delayed help-seeking), whereas women more often buffer farm and household roles, contributing to cumulative role overload. Across contexts, protective resources repeatedly identified include social support and peer networks, trusted advisory relationships, autonomy in work organisation, and income diversification; however, these resources are measured less consistently than stressors and outcomes, and full stressor–resource–outcome pathways are infrequently modelled.

Implications: The review reframes farmer well-being as a modifiable outcome of how agricultural work is organised and supported. Effective responses require multi-level strategies that reduce structural stressors while strengthening coping resources within farm households, advisory systems, and rural communities, with explicit attention to gendered roles and differential vulnerability.

Keywords: Farmer stress; coping; coping resources; Stress Process Model; well-being; Europe.

Conceptualising the burden of farm injury beyond individual occupational hazard

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Abstract:

Farm injuries are traditionally conceptualised as individual occupational health issues, measured through morbidity, mortality, or direct economic costs. This narrow framing fails to capture the cascading impacts that injuries have on spouses, family, farm businesses, and rural communities.

While the dominance of the research focus on injury prevention is justified by the high levels of deaths and injuries experienced by farm workers, this has resulted in less evidence base to inform policy development supporting those impacted by occupational injuries. Hence, this paper explores farm injuries within a socio-ecological perspective to understand how they affect multiple actors across interconnected systems. This paper develops a conceptual framework for understanding farm injury burden across multiple system levels.

Through a comprehensive narrative literature review spanning occupational health, family systems theory, agricultural economics, rural sociology, and disability studies, we identify a key gap: existing frameworks inadequately account for the life-changing consequences experienced by farm families and communities beyond the injured individual. This conceptual paper proposes a multilevel framework – the Farm Injury Burden Model – that integrates both quantifiable dimensions (direct and indirect economic costs across household and business) and non-quantifiable dimensions (mental and emotional hardships, family adaptation processes, and community-level impacts). The framework operates across the interconnected levels in the socio-ecological model: individual, family/household, farm business, community and policy and maps how an injury's consequences cascade and interact across these domains. The model identifies pathways through which individual injuries create system-wide burden: economic disruption, caregiving redistribution, and social network strain. This foundational work establishes a conceptual basis for future empirical research on how farm families navigate and adapt to injury burden and provides a structural framework for developing support interventions that can address the full spectrum of injury impacts in an agricultural context.

Keywords: Farm injury, burden, agriculture, socio-ecological, conceptual framework

The role of foreign workers in a segmented labour market, the case of Italian Agriculture and Fisheries

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Foreign workers are crucial in Italy's agriculture and fisheries, accounting for 20% of the primary sector workforce in 2024 – almost double their share in total employment (10.5%) and above their population share (9%).

The agricultural workforce has undergone profound changes. Family labour has declined, while paid employment has grown, increasing the share of dependent workers. However, working conditions remain poor, and the sector continues to rank low compared to others. As a result, agriculture increasingly attracts workers with limited bargaining power.

According to a CREA survey, foreign workers face significant challenges, mainly linked to seasonal and low-skilled jobs, often aggravated by widespread irregular employment. Women are particularly underrepresented, penalised by the lack of care services and discouraged by multiple forms of discrimination and violence.

The sector's low attractiveness is also evident in the changing composition of nationalities. Romanian workers have decreased, likely due to improved economic conditions in their country, while workers from India, Pakistan, Morocco, and Senegal have grown in number.

Italian agriculture appears to rely on vulnerable workers with few alternatives. At the same time, there is an acute shortage of qualified personnel capable of managing data and operating advanced machinery. This dual gap – manual labour for strenuous, low-paid tasks and skilled professionals for sustainable and digital agriculture – threatens the sector's competitiveness and long-term viability.

Although the CAP has not yet addressed this issue adequately, it is essential to create a more favourable environment, invest in human capital, and guarantee decent working conditions for all employees, including foreign nationals. Only through these measures can the sector face future challenges equitably and sustainably.

Similar challenges are observed in the fisheries sector, where labour shortages and reliance on foreign workers pose additional economic and social concerns. This is particularly evident in large-scale fishing, which requires numerous crews, while small-scale fishing remains limited by regulatory constraints and high costs. Persistent obstacles – complex procedures, language barriers, integration issues, and lack of housing – further hinder regular employment.

Foreign labour is indispensable for Italian fisheries. Urgent measures are needed, including regulatory simplification, recognition of qualifications, practical internships, language courses, and the creation of a centralised placement system. These actions are crucial to ensure regularity, training, and economic sustainability in the sector.

Labour shortages and the growing reliance on foreign workers in both agriculture and fisheries threaten the competitiveness and sustainability of Italy's primary sector, making integrated policies and improved working conditions essential for its future.

Keywords: Foreign workers, Working conditions, Labour shortages, Seasonal employment, Social sustainability

Identifying Farmer Engagement Preferences for Occupational Safety and Health Information: A Cross-National Cluster Analysis of 1,078 European Farmers

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Rationale

Agriculture remains one of the most hazardous occupations in the European Union despite decades of prevention efforts ranging from regulation to on-farm education. Farmers (including farmworkers and in many cases family members) are the primary managers of occupational safety and health on their holdings, and engaging with them at every level is vital to reducing risk. Understanding different farming populations' preferences for engagement is therefore essential for designing effective interventions.

Objectives

This study's objective was to identify how European farmers prefer to engage with health and safety information.

Methods

Using a multi-actor approach, we surveyed 1,078 farmers, farmworkers, family members, and agricultural students across 11 European countries. The survey combined an expanded Hierarchy of Controls (HOC) framework with the Socioecological Model (SEM) into two rank-order questions that identified farmers priority (1) safety issues and (2) learning preferences. We conducted Categorical Principal Components Analysis and K-means clustering to identify four distinct farmer profiles based on engagement preferences alone.

Findings

Farmer profiles differed strongly in their prioritisation of safety interventions at different levels of the HOC and engagement with different services across the SEM. Interpersonal Learners (40% of sample) rely on personal social networks for acquisition of safety knowledge and prefer informal, relationship-based learning over formal organisational engagement.

Knowledge First farmers (22% of sample) focus on safety awareness and training through structured, didactic learning, showing a preference for classroom-based approaches and individual risk assessment tools.

Risk Preventers (20% of sample) prioritise material resources, equipment, and engineering solutions rather than any specific engagement approach. They are best reached through investment mechanisms and practical support rather than educational programmes.

Organisational Learners (18% of sample) actively engage with multiple organisations through structured learning environments while also valuing experiential application.

Implications

The HOC and SEM provide useful lenses to identify farmers' heterogeneous engagement preferences. Organisational Learners represent the smallest group but are generally well-served by current advisory and extension services. Interpersonal learners, however, represent the largest group but currently receive only sporadic and often under-evaluated support. Therefore, we recommend these four farmer profiles as useful tools to tailor safety services to end-user's diverse needs. However, we identified no meaningful demographic differences between farmer subgroups, indicating further unexamined factors. Therefore, further research should prioritise identifying possible distinguishing variables (e.g. learning styles or personality factors) to further improve farm safety engagement services across Europe.

Keywords: Occupational Safety and Health (OSH), Farmer Engagement, Knowledge-Transfer, Cluster Analysis, Multi-Actor-Approach

Living and Working with Volunteers on Alpine Farms: Moral Economies and Social Sustainability in Mountain Agriculture

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In Swiss alpine regions, mountain farming is increasingly challenged by economic pressure, climate unpredictability, demands stemming from intensive production requirements, and fragile economic viability. In this context, new forms of non-monetary labour have emerged, notably volunteer work on farms, reshaping, in subtle yet meaningful ways, both living and working conditions in mountain agriculture. This paper draws on the Swiss National Science Foundation project *Volunteers in the Alps: An Ethnography of Non-Monetary Aid to Mountain Farmers in Valais*.

Based on sixteen months of immersive fieldwork and eighty interviews with farmers, volunteers, and intermediary organisations, the talk examines how volunteer labour operates at the intersection of work, care, moral economy, and social sustainability. Volunteers contribute to agricultural and para-agricultural activities – animal care, haymaking, maintenance, and domestic tasks – while receiving accommodation, food, learning opportunities, and what many describe as “a feeling of having received so much.” Farmers frequently emphasise that these encounters provide “breathing space” during particularly demanding periods.

Hosting volunteers, however, is not self-evident. It requires time, emotional and pedagogical investment, and a willingness to open one’s home and everyday life to outsiders. Volunteer labour therefore also entails a form of giving on the farmers’ side. In return, farmers often receive symbolic recognition, interest in their way of life, and a renewed sense of social value beyond economic productivity. What is exchanged is thus not only labour, but relationships forged through shared work and everyday interactions, blurring conventional distinctions between work and leisure, employment and help, market and gift.

The paper shows how volunteer work can temporarily ease farmers’ workload and support the continuity of small-scale mountain farms, particularly the most vulnerable holdings in disadvantaged mountain areas. At the same time, it highlights ambivalences and tensions: unequal access to volunteers, asymmetries in expectations, mental and relational burdens for farmers, and the risk of masking structural problems related to agricultural incomes, working hours, workforce shortages, and the social devaluation of agricultural skills.

By focusing on lived experiences, the paper contributes to debates on who works on farms, under what conditions, and how social sustainability is practically negotiated over the life course. It argues that volunteer labour should be understood neither as a simple solution nor as exploitation, but as a situated and relational response to contemporary transformations of agricultural work, with implications for policy, rural development, and the future of decent work in mountain agriculture.

Keywords: Volunteer labour ; Mountain agriculture; Moral economy; Social sustainability; Non-monetary work

Supporting the development of decent work on family farms

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Supporting the reflections and transformations of work among family farm workers requires the development of new skills, approaches, mandates and legitimacy for those supporting the agricultural sector. This text aims to present a training programme for those working with French farmers to support the transformation of their work. We discuss the principles and background of this training programme on work, how support workers use it to support the changes in the work of farmers, the contribution of these interventions to decent work for the farmers receiving support, but also for the support workers themselves.

The work training course is intended for advisors and support workers who assist farmers with support related to their work activities. The scope is therefore broad, as farmers' work activities encompass everything that farmers experience on a daily basis, as well as the compromises they have to make between agricultural work, domestic work, family work, etc. The work training course is built around support on a farm to be provided by the group of trainees during the training period (3 days). The support workers in training re-engage with and question their experience, and the trainers (agronomist, occupational psychologist and ergonomist) provide new theoretical frameworks for questioning in order to understand the work activity of those being supported (6 frameworks), understanding aimed at making hypotheses about this work activity (4 frameworks), and reflexivity aimed at questioning the relative positions of those being supported and those providing support within the framework of this support (1 framework).

As part of the May 2025 training session, the accompanied farmers were a married couple with three children who, with the help of two volunteer parents and one employee, worked on a self-sufficient, organic mixed farming and livestock farm. The couple had developed a farming system that was highly sustainable from an ecological point of view but did not provide sufficient remuneration for the work involved: although they were satisfied in terms of values, they were overworked and wanted to move forward and find a way to make their work more comfortable and peaceful. This difficult situation was very relevant from an educational point of view for the trainees: a farm and work that were sustainable on paper, but a form of cultural alienation from the 'stereotype of sustainable agriculture' by the farming couple, leading them to deny the overload of productive activity by means of a defense mechanism to avoid suffering: activism. How can we help them build an ideal type of sustainable farm that leaves room for their family life? What is our mandate as agricultural advisers to support the deconstruction/reconstruction of this ideal type? ...

Through this training, support workers and advisers examine their experience, their role and their mandate within their support structure.

Keywords: support, work training, decent work

Stress And Mental Wellbeing in International Farming Communities: Introducing A New Measurement Approach

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Farmers, their families, and farm employees face daily stressors that adversely affect their mental well-being. To improve our understanding of how stress and mental well-being relate in farming communities, we examined this relationship among farming community members in the United Kingdom (UK) and Canada. Cross-country comparisons can help identify structural or contextual influences on farm stress and inform the design of effective interventions.

Using an online cross-sectional survey, 569 adults from farming communities in the UK and Canada completed measures of stress, comprising personal vulnerability and event load, and subjective mental well-being (37% male, 63% female; $M_{age} = 47.57$, $SD = 12.55$).

Both high stress event load and personal vulnerability were associated with lower mental well-being, though personal vulnerability demonstrated consistently strong negative effects regardless of stress event load. Members of the UK farming community reported significantly lower mental well-being ($M = 19.04$, $SD = 2.85$) than Canadian participants ($M = 20.83$, $SD = 3.11$) ($p < .001$) and were within a range indicative of mild depression. However, the levels of mental well-being reported in both countries demonstrate the need for targeted support.

Given our identification of the importance of personal vulnerability to stress for well-being, we need to move beyond measuring only the causes and frequencies of farm stressors to assessing their psychological impacts. We introduce the Causes and Impacts of Farm Stress Scale. Our novel measure captures the prevalence of 12 farm-specific stressors alongside individuals' psychological responses, including pressure, overwhelm, and loss of control. Evidence from the scale can inform the design of interventions to strengthen individuals' psychological capital and improve mental well-being across international farming communities.

Keywords: Well-being, Cross country, Stress

Impact of adopting agroecological practices on household food security around Lake Guiers in Senegal

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The objective of this article is to analyze the impact of adopting agroecological practices on household food security around Lake Guiers in Senegal. This research is based on a survey of 280 households located in the municipalities of Mbane, Ngnith, and Ndombo Sandjiry. Using a one-parameter Rasch model, we constructed a food insecurity scale based on the Food Insecurity Experience Scale (FIES), which reveals that 6.07% of households are severely food insecure, 38.93% are moderately food insecure, and 55.00% are food secure. The adoption of agroecological practices remains low: only 40.36% of households have implemented at least four practices. A generalized ordered logit model shows that each additional unit in the agroecological practices adoption score reduces the risk of falling into food insecurity by 37.3% and the risk of falling into severe insecurity by 63.1%. At the same time, this study also shows that owning agricultural assets increases resilience, while being a female head of household or experiencing a death increases the risk of food insecurity. The results argue in favor of promoting agroecological practices, capacity building, and access to information, particularly for female heads of households and households facing shocks such as death, to foster an inclusive agroecological transition and strengthen food resilience.

Keywords: Agroecology, Food security, impact, Adoption, Lac de Guiers, Sustainable agricultural practices, Rasch model

Advancing living and working in agriculture by addressing psychological sustainability.

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Sustainability in agriculture is commonly addressed across economic, environmental, and social domains. While the area of vocational psychology has been utilised to better understand aspects of social sustainability such as the career choices of young people for a career in agriculture, we propose that wider applications that explore the interaction between individuals and the work environment when developing sustainable agricultural careers are warranted.

The Vocational Psychology of Agriculture (VPA, McIlveen et al., 2025) seeks to apply a range of theories when investigating individuals experiences of agricultural careers including the systems theory framework of career (STF; Patton & McMahon, 2021), Social Cognitive Career Theory (SCCT; Lent & Brown, 2013); Self-Determination Theory (SDT; Deci & Ryan, 2012), and the Theory of Work Adjustment (TWA; Dawis & Lofquist, 1984). These theories are being utilised across a number of projects to understand the adaptability, employability, attraction, retention, skills development, wellbeing, work engagement and job satisfaction of Australian agriculture workers.

In seeking to translate theory and research insights to practice, the SHIFT project is an emerging VPA intervention (McDonald et al., 2025). The project addresses agricultural workforce sustainability by upskilling farm workers to build team cultures where people are enabled to grow their careers and adapt at work. The program has had some success in terms of acceptance and adoption by Australian cotton farming teams.

We propose that further research is needed globally to better understand (a) how vocational psychology may provide insights that support sustainable careers in agriculture, and (b) how research findings may be translated into adoptable programs that develop an on-farm workforce equipped to adapt and thrive into the future.

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Keywords: Vocational Psychology, Sustainable Careers, Adaptability, Agricultural Work

Seasonal Debt, Cash-Flow Insecurity, and Social Sustainability in Rice Farming: Lived Realities and Support Pathways in Indonesia

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The social sustainability of agriculture is examined in this study by understanding the impacts of seasonal debt and inconsistent cash flow on rice farming households in Lembor, East Nusa Tenggara, Indonesia. The just farm life notion, in this case, concerns the ability of farmers, farm workers, and their households to systematically and sufficiently handle everyday and extended responsibilities, including their children's schooling, healthcare, adequate housing, and social inclusion and belonging, which is a source of social stability and enables long-term planning. The study focuses on local financial structures and how they define the 'who, what, and under what conditions' scenarios for farming and the implications of these structures for farmers' socioeconomic standing. The study builds on the author's original and comprehensive longitudinal ethnographic field studies conducted over multiple farming seasons. It includes participant observation and interviews with smallholder farmers, leaseholders, commercial landholders, and local agricultural cooperatives, and intra-family financial transaction and payment cycle case study documentation. The findings indicate distinct patterns in the agricultural calendar.

At times, all families face household financial constraints because they have to secure money to buy agricultural inputs before the planting season and money to buy food and other items needed for upcoming community celebrations, all of which have long delays before the next harvest. Local cooperatives and informal lenders fill this gap, and often synchronize the loan repayment schedule with the harvest season, enabling families to repay loans after the harvest and clear cash. However, this can trap households into what is termed structural seasonality. If the harvest is unachieved because of adverse weather, pests, or the unavailability of hired labor, families will default on the debt. So, they will postpone payment, and debts will start accumulating. Subsequently, food, school fees, or medical care become more difficult to afford. This hits most of the sharecroppers and those with tiny land holdings. They face the full farming risk without any safety net and inadequate returns.

This research contributes to the wider discourse on social sustainability by showing that the problem of stable cash flow is more than a technical problem. It goes to the heart of why agrarian work is unquantifiably valuable, why it sustains whole families, and why it gives hope to the young to stay in farming.

Keywords: social sustainability; ethnography; seasonal debt; cooperatives; rice farming; Indonesia

How Farmers Perceive Their Work: Comparing Working Conditions at CSA-Farms with other Farming Contexts

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Primary food production in Germany faces significant economic, ecological, and social challenges. Increasing production costs, climate change impacts, and growing societal expectations regarding environmental standards and animal welfare put considerable pressure on farmers. Community-supported agriculture (CSA) offers an alternative approach to address these challenges and to create pathways towards a more sustainable and resilient food system. CSA is characterized by ecological farming practices, close collaborations between producers and consumers, and shared risks associated with crop failures among the community. CSA initiatives aim to enhance the financial stability of farms and to reduce the dependence on fluctuating markets by ensuring guaranteed food purchases, fair payment and planning security. The member community usually commits to cover the full production costs for one year and in return they receive regular harvest shares of farm products. Although there is a growing interest in CSA as a socially innovative model, little is known about the implications of the CSA model for farmers and their working realities. Some studies report that agricultural work in CSA does not always meet decent work standards, in particular regarding occupational safety, working time, income stability, and mental health. At the same time, farmers often report high job satisfaction and a strong sense of meaningful work, with CSA farmers associating their work with income stability, social recognition and a sense of contributing to a more sustainable food system. Our study explores the potential of CSA as a socially sustainable farming model and examines how farmers in Germany perceive their working conditions with regard to decent and meaningful work. In early 2026, we will conduct a quantitative survey with CSA farmers and non-CSA farmers across Germany. Subsequently, we will host a participatory workshop with CSA representatives to collect qualitative data on their understanding of sustainable farm work. Based on that, we will transdisciplinarily identify characteristics of socially sustainable work in CSA. We hypothesize that while CSA may mitigate certain work-related challenges, many deficits in decent work are structurally embedded across farming systems. We expect our results to contribute to the debate on the social sustainability dimensions in agriculture. We will discuss our findings within the broader context of agriculture, providing a comparative overview of decent and meaningful work perceptions of CSA farmers and non-CSA farmers in Germany. By identifying key characteristics of sustainable work in CSA, we aim to offer practical insights for policymakers and networks seeking to promote resilient rural livelihoods and equitable working conditions in agriculture.

Keywords: decent work, meaningful work, community supported agriculture, social sustainability, transdisciplinary research

Strategies used by farmers when facing financial and mental challenges

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Farmers are often portrayed as independent individuals who do not want to seek help when facing challenges. This is particularly the case when it comes to farmers' mental health. While well-intended, such framing appears simplistic, and recent evidence suggests that it may be hurtful. In addition, even though financial challenges are a major stressor, how farmers navigate these challenges has received little attention in the farmer mental health literature. To broaden our understanding of when farmers seek help and how for financial and mental health challenges, we bring into conversation two bodies of literature that rarely intersect but offer complementary insights. First, the farmer help-seeking strategies literature provides the most insights on how farmers navigate mental health challenges. Yet and beyond its limited attention to financial challenges, this body of work often emphasizes farmers' barriers and deficits, at times framing them as helpless. Second, the farm persistence literature has a long history of studying financial challenges that farm families face and what enables them to keep the farm going amidst external pressures and ongoing changes. That said, its emphasis on maintaining the farm operation at all costs has overshadowed the consequences for farm households' well-being. Our data are from interviews with 55 farmers in three U.S. Midwest states and a short background survey representing a diversity of demographic characteristics and farm types. Our preliminary findings indicate that many research participants had navigated mental health challenges (i.e., mental illness, suicide) and financial challenges within their families and/or communities. Help-seeking was common for both types of challenges, ranging from seeking guidance from family and informal networks to adjusting farming practices to lower costs, diversifying production and processing to access new markets, and having an off-farm job. Critical in the adoption of these strategies was the households' ability to leverage internal and external resources and adapt to the prevailing conditions. Still, many expressed concerns around seeking help from their local community due to the competitive nature of securing land and labor and the fear that revealing vulnerability would threaten their livelihoods and reputation. Taken together, our findings so far complicate narratives in the help-seeking literature by showing the wide range of strategies that farmers use when facing challenges. Meanwhile, our findings echo the farm persistence literature through the primacy of actions taken to address financial challenges to maintain the farm operation. Lastly, our findings illustrate how strategies to support mental health and finances are interlinked but can also conflict with one another.

Keywords: Help-seeking - Financial challenges - Mental health challenges - social sustainability

Living and working through ecological transition in family farming

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This paper presents preliminary results from the AGRICONVERT project, an ethnographic study conducted in the Walloon Region (Belgium) that explores how farmers from multigenerational family farms experience ecological change in their everyday lives and work. While much of the literature on agroecological transitions has focused on alternative farming projects, newcomers or activist movements, AGRICONVERT shifts attention toward farmers embedded in inherited family farming systems, whose livelihoods and working conditions are shaped by long-term economic constraints, intergenerational relations and expectations of continuity.

Drawing on fieldwork with male and female farmers working and living on family farms, this paper examines how ecological transitions are experienced, negotiated or resisted within the everyday organisation of farm work and family life. Heritage, indebtedness, gender relations and intergenerational dynamics strongly shape the possibilities for change. In particular, the symbolic and material weight of agricultural inheritance emerges as a central dimension shaping farmers' room for manoeuvre, as ecological conversion often involves negotiating loyalty to inherited farming models, family expectations and intergenerational relations. The analysis suggests that ecological conversion cannot be understood solely as a technical or ideological shift, but needs to be approached as a process embedded in household arrangements, working conditions and concerns about maintaining viable living standards, and, in fine, social sustainability.

Preliminary findings point to ambivalent experiences of ecological transition. While some farmers associate ecological practices with renewed meaning, professional recognition or greater coherence between values and work, others express concerns related to workload, economic uncertainty and doubts about the suitability and feasibility of specific farming techniques (e.g. organic farming, reduced tillage, no-till practices). Rather than drawing clear-cut conclusions, the analysis highlights tensions and trade-offs that farmers face when ecological objectives intersect with the realities of everyday work and life on family farms.

By foregrounding these lived experiences, this contribution aims to contribute to debates on social sustainability in agriculture by examining how ecological transitions unfold within family farming contexts marked by inherited structures, gendered divisions of labour and economic constraints. It calls for greater attention to farmers' working and living conditions, as well as to intergenerational and family dynamics, when designing policies intended to support ecological transitions and the long-term sustainability of family farming.

Keywords: social sustainability, family farming, ecological transition, working and living conditions, inheritance