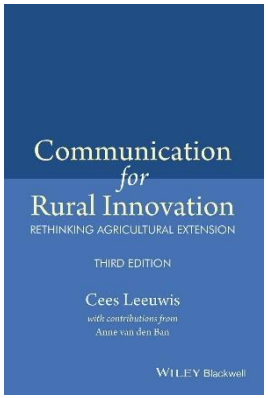
Transformation, disruption and plurality in agrifood systems: emerging directions for research on extension

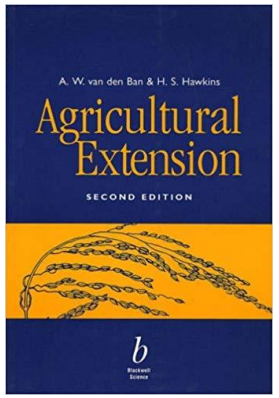
Laurens Klerkx – Knowledge, Technology and Innovation Group - Wageningen University

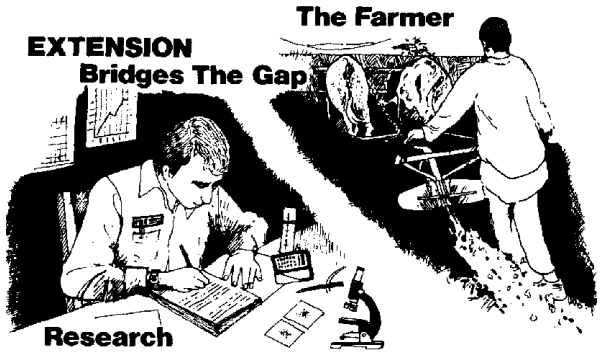
IDEAS network – Paris, 4-2-2020

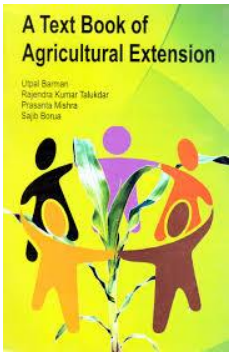
Current understanding of extension

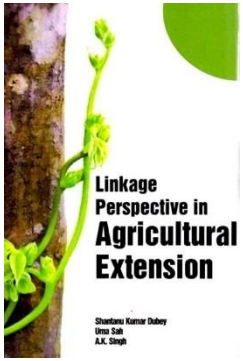
- Broad range of advisory, facilitation and intermediation roles (innovation support services)
- Provided by public, private, farmer organization and NGO actors
- Provided as a core business or as part of a broader package of goods and services
- Focused on agriculture, but also rural areas and communities and also urban areas











Consolidated streams of work in recent years

- Renewed attention to AKIS development, performance and inclusion, public/private/collective roles
- Documentation of a wide range of (new) intermediary roles fulfilled by extension/advisory services
- Continuous attention to development of methodologies, tools, pedagogy
- Critical studies on role advisory services within policy and practice
- Behaviour change and adoption continue on the agenda

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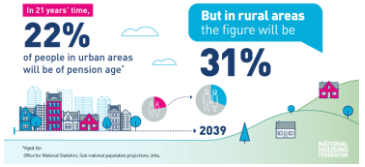
Does this mean we can sit back and relax?

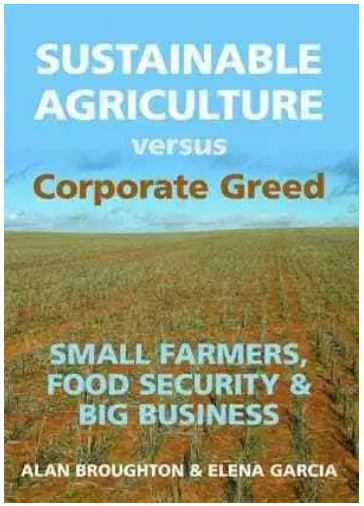
No, there's work to be done!

- We need to critically assess current paradigms (e.g. multi-actor approach)
- We need to keep abreast of fast changing agri-food environments
- We need to engage with new theoretical orientations and methodologies to renew/refresh the field
- What follows are some ideas and suggestions....

Several major challenges, developments and trends are influencing agriculture

- Growing demand for food, fibre and energy
- Climate change, resource degradation
- Growing middle class and more critical consumers
- Ageing rural population and decline (in some places), rural population growth (in other places) – but farm succession issues virtually everywhere
- Corporatization of agriculture versus family (smallholder) farms, specialization vs multifunctionality
- Shift towards food systems approach and new technologies and perspectives coming in (vertical, circular, regenerative, digital, synthetic ...)





Transformation and disruption

- Transition and transformation are key pillars of policy agendas worldwide
- Different drivers: both natural, economic, and technological
- Some of these have a (potentially) disruptive nature
- May affect both agricultural and advisory 'regimes'

Research Policy 47 (2018) 1554–1567

Contents lists available at ScienceDirect

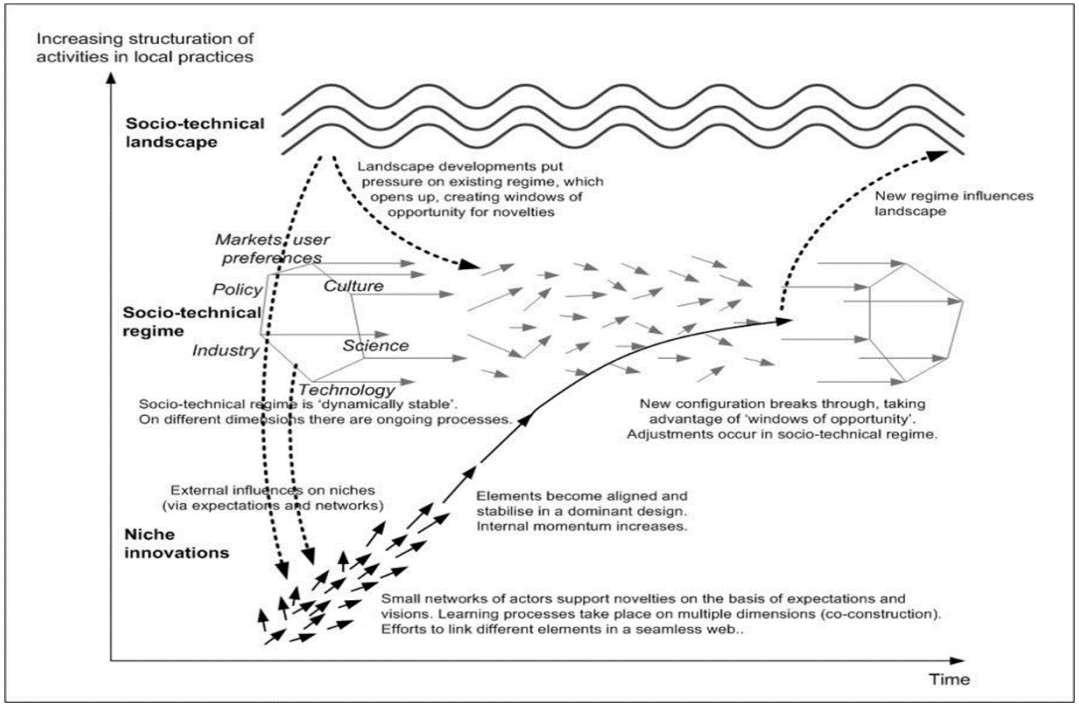
Research Policy

journal homepage: www.elsevier.com/locate/respol

Three frames for innovation policy: R&D, systems of innovation and transformative change

Johan Schot*, W. Edward Steinmueller

Science Policy Research Unit (SPRU), University of Sussex, United States



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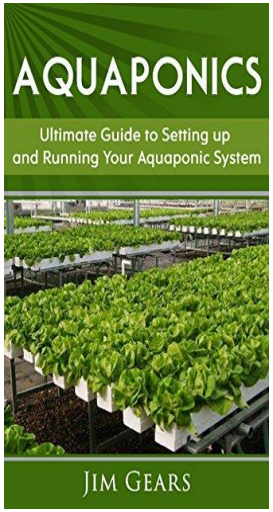
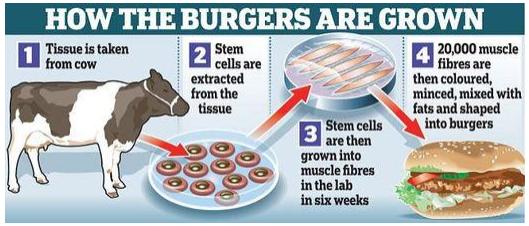
Plurality

- Transformation and disruption are not value free and have (competing/collaborating/co-existing) networks of actors and underlying values, visions and paradigms: *sustainable intensification, ecological intensification, agriculture 4.0, etc., etc., etc.*





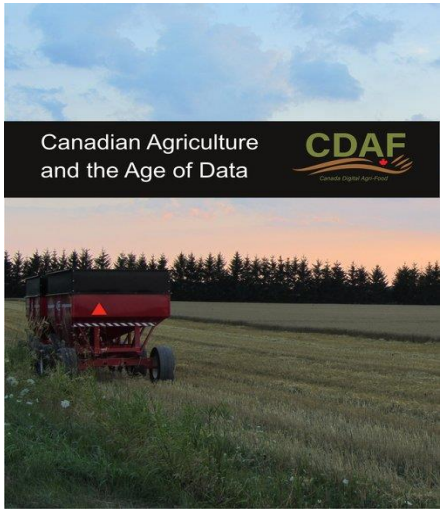
What do future(s) of agriculture imply for our extension research agenda?

Understanding transformation and extension

Ministerie van Landbouw, Natuur en Voedselkwaliteit

Landbouw, natuur en voedsel: waardevol en verbonden

Nederland als koploper in kringlooplandbouw



sustainability

MDPI

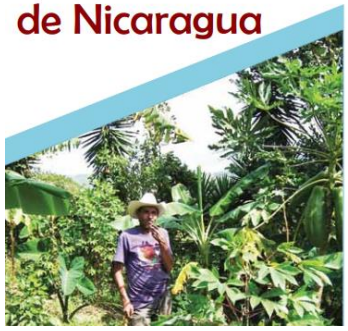
Article

Translating Agroecology into Policy: The Case of France and the United Kingdom

Raquel Ajates Gonzalez [1,*], Jessica Thomas [2] and Marina Chang [3]

Marco Jurídico y Normativo de la Producción Agroecológica de Nicaragua

MAONIC



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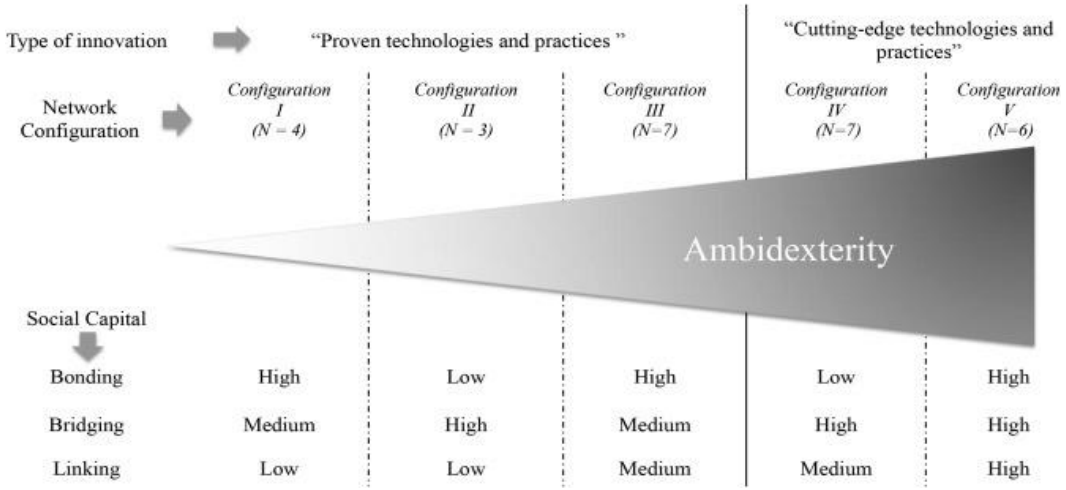
Understanding transformation and extension

- Looking at questions such as:
  - How do advisory systems respond to and connect to different transition pathways?
  - How do 'grassroots advisory movements' develop?
  - How are value dilemmas managed?
  - What shapes the "politics of policy attention" to different transition pathways (niche AKIS/ regime AKIS)?
  - How are (dis)continuities managed in the advisory profession?

Understanding plurality and extension

- Recent work on 'sub-AKIS' and 'micro-AKIS'
- Depending on farming style/orientation & transition pathway, great diversity in advisory networks



JOURNAL OF AGRICULTURAL EDUCATION AND EXTENSION, 2017
https://doi.org/10.1080/1389224X.2017.1320640

Routledge
Taylor & Francis Group

ORIGINAL ARTICLE

OPEN ACCESS

Achieving best-fit configurations through advisory subsystems in AKIS: case studies of advisory service provisioning for diverse types of farmers in Norway

Laurens Klerkx[a], Egil Petter Stræte[b], Gunn-Turid Kvam[b], Eystein Ystad[c] and Renate Marie Butli Hårstad[b]

AgriLink

Journal of Rural Studies 69 (2019) 53–64

Contents lists available at ScienceDirect

Journal of Rural Studies

journal homepage: www.elsevier.com/locate/jrurstud

Combinations of bonding, bridging, and linking social capital for farm innovation: How farmers configure different support networks

Gabriela Cofré-Bravo[a], Laurens Klerkx[b], Alejandra Engler[a,c,*]

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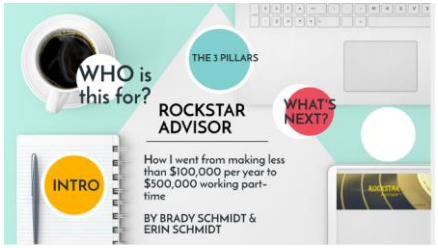
Understanding plurality and extension

- Need for understanding better:
  - Advice consumption styles: reasons for choosing independent advisors, agribusiness, 'one-stop-shop', etc. – strategic combinations
  - How advisors switch between advisory styles
  - 'Average' and 'rockstar advisors': how reputation is built
  - Advisory synergies and 'advisory bubbles': advantages and risks of closed networks
  - How different advisory networks engage with different 'back-offices'
  - Age/experience/gender composition of advisory organisations and collegial & generational interaction

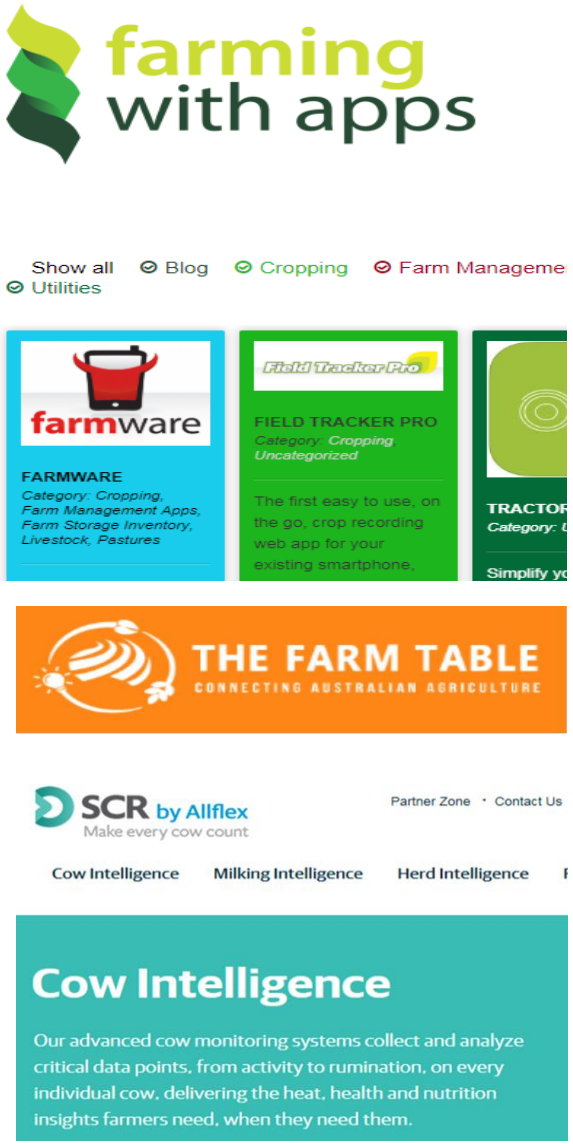


Understanding disruption and extension

- Digitalization, circularity, synthetization, urbanization, financialization, corporatization, etc.

Emerging work: Digital AKIS

- Macro–level: e.g. work on DAIS (Fielke et al.), 'Digiware' (Ayre et al.), PA innovation systems (Eastwood et al.), SMART AKIS (Knierim et al.)
- Meso–level: e.g. work on farmer-advisor interaction, apps, social media (Eastwood et al., Inwood and Dale, Choudhury et al., Munthali et al.)
- Micro–level: cyber-physical-social systems (Lioutas et al., Brunori et al.)



Example: Digital citizen & data science and social media

- Apps used by citizens to monitor agri-ecosystems (e.g. biodiversity) or by farmers to monitor water/crops/pests/weeds (biosecurity, etc)
- Social media to measure sentiments of farmers or the public (social license to produce)
- Social media as exchange and connection strategy

Research paper

Reflections on the potential of virtual citizen science platforms to address collective action challenges: Lessons and implications for future research

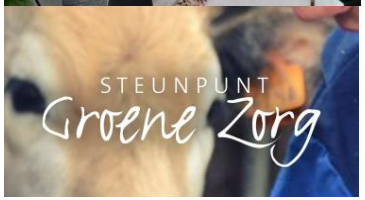
Cees Leeuwis [a], K.J. Cieslik [a, d], M.N.C. Aarts [b, c], A.R.P.J. Dewulf [d], F. Ludwig [e], S.E. Werners [e], P.C. Struik [f]

Social media as a new playing field for the governance of agro-food sustainability

TM Stevens [1], N Aarts [1], CJAM Termeer [2], A Dewulf [2]

Understanding disruption and extension

- Answering questions such as:
  - How do extension providers adjust? Start-ups, new business models?
  - New advisory alliances for cross-sectoral systems and emerging issues (e.g. data cooperatives)
  - Interaction data-farmer- advisor, the rise of the 'augmented advisor', virtual advisory encounters?
  - Data science on extension
  - Advisory platform technologies?



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SMARTFARMING

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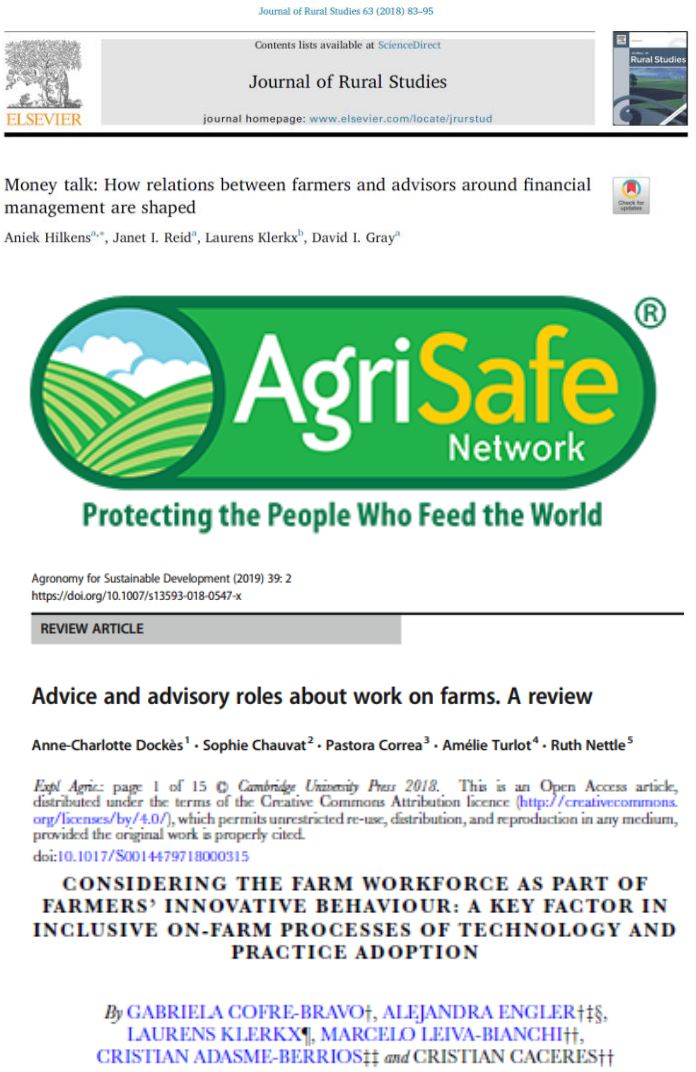
THE CATALYST FOR CHANGE

FAIRshare
DIGITAL TOOLS FOR FARM ADVISORS

The human/organisational side of transformation and disruption and extension

- Financialization, scale increase, disruptive technologies, migrant labour, multifunctionality etc. impact on the farmer and workers
- Questions:
  - How does extension deal with finance, worker management, succession planning?
  - How does extension engage with the human side of farming, e.g. joy, stress and mental health issues? What does this mean for the professional profile?



Journal of Rural Studies 63 (2018) 83–95

Contents lists available at ScienceDirect

Journal of Rural Studies

journal homepage: www.elsevier.com/locate/jrurstud

Money talk: How relations between farmers and advisors around financial management are shaped

Aniek Hilkens[a,*], Janet I. Reid[a], Laurens Klerkx[b], David I. Gray[a]

AgriSafe Network

Protecting the People Who Feed the World

Agronomy for Sustainable Development (2019) 39: 2
https://doi.org/10.1007/s13593-018-0547-x

REVIEW ARTICLE

Advice and advisory roles about work on farms. A review

Anne-Charlotte Dockès[1] · Sophie Chauvat[2] · Pastora Correa[3] · Amélie Turlot[4] · Ruth Nettle[5]

Exptl Agric.: page 1 of 15 © *Cambridge University Press 2018*. This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted re-use, distribution, and reproduction in any medium, provided the original work is properly cited.

doi:10.1017/S0014479718000315

CONSIDERING THE FARM WORKFORCE AS PART OF FARMERS' INNOVATIVE BEHAVIOUR: A KEY FACTOR IN INCLUSIVE ON-FARM PROCESSES OF TECHNOLOGY AND PRACTICE ADOPTION

By GABRIELA COFRE-BRAVO†, ALEJANDRA ENGLER†‡§, LAURENS KLERKX¶, MARCELO LEIVA-BIANCHI††, CRISTIAN ADASME-BERRIOS‡‡ *and* CRISTIAN CACERES††

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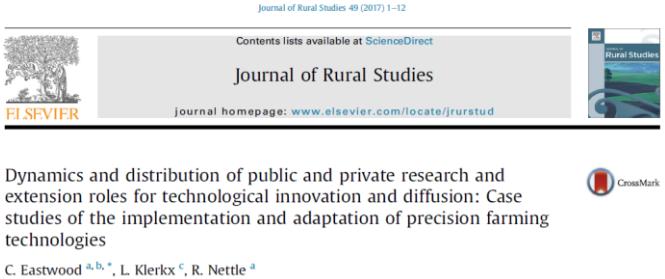
The international dimension of extension

- Internationalization of extension in view of global transition pathways
- Global flow of extension models versus context specificity
- Global social media networks
- Questions such as:
  - How do (formal and informal) advisors operate cross-culturally?
  - What adaptation dynamics (do not) take place? In terms of technologies and methodologies?

Delphy

Costa Rica
Poland
UK
Middle East
Ethiopia
Russia


Journal of Rural Studies 49 (2017) 1–12

Contents lists available at ScienceDirect

Journal of Rural Studies

journal homepage: www.elsevier.com/locate/jrurstud

Dynamics and distribution of public and private research and extension roles for technological innovation and diffusion: Case studies of the implementation and adaptation of precision farming technologies

C. Eastwood [a, b, *], L. Klerkx [c], R. Nettle [a]

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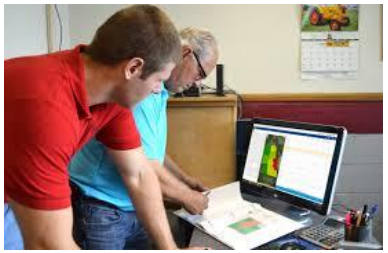
The eco-material side of extension

- Different farming styles and transition pathways have different and new (im)material contexts
- Sometime also 'hybrid' material contexts (e.g. agroecology + digital)
- Raises question such as:
  - How do farmers and advisors engage with these hybrid material contexts?
  - How does it affect their advisory encounters?
  - What does it imply for tool affordances and method design?
  - What does it imply for advisor training?
  - The influence of data vs. the human advisor in advisory encounters?

PLAID
PEER-TO-PEER LEARNING: ACCESSING INNOVATION THROUGH DEMONSTRATION



AGRIDEMO
FARMER TO FARMER

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Education and training

- Renewed attention to advisor training and learning. Emerging questions:
  - Digital natives and advisory services: what does it imply for training next generation advisors?
  - What about advisory ethics in view of diversity and power dynamics?
  - How do social and natural science graduates and different sorts students at technical schools perceive and enact transition pathways?

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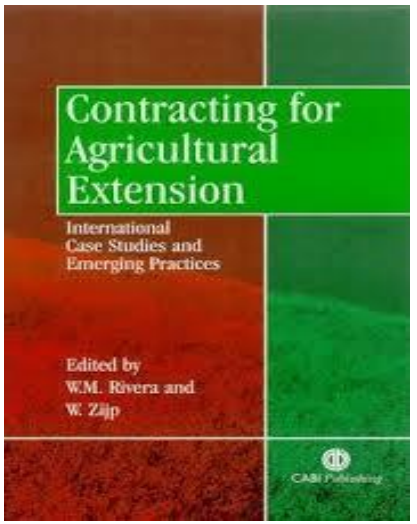
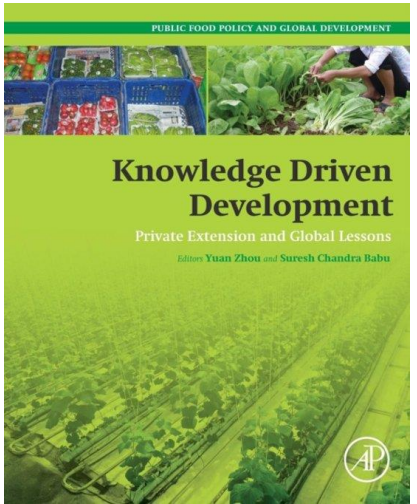
AgriSpin

landbridge:
A knowledge exchange network for rural professionals

Global comparison

- Phenomena of transformation, disruption and plurality occur across the globe
- However, timing, nature and pace of change may differ
- Questions:
  - What similarities and differences can be seen in terms of how changes unfold?
  - What are the underlying determinants?
  - Do we see new 'grand models' emerging (within diversity)?





Which theories can help us?

- Extension science has always been pluralist in terms of theories (psychology, sociology, economics, etc.)
- Expanding the toolbox, a few possibilities:
  - Practice theories
  - Organization studies: organizational identity
  - ANT and assemblage theory: actors and actants, socio-material flows
  - STS: innovation cultures
  - Economics and management: e.g. digital business model theory
  - Social network analysis

Does this have any practical and policy relevance?

- Informing adjustments in advisor training (initial and continuous)
- Supporting organizations to make sense of change dynamics
- Highlighting inclusion and exclusion effects
- Counteracting power imbalances in advisory systems
- Taking into account the diversity of systems in policy targeting

Thanks for your attention