Contested Agronomy: whose agronomy counts?
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Sustainable intensification in agriculture:
The darker side of green

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Introduction: The State of Decline

- Planet Earth is in a state of decline
- Agriculture is one of the most disruptive human activities
- Can agricultural intensification become sustainable?
- Intensification is a Janus faced problem
- Therefore agronomy is contested and in decline
- Required sustainability is unknown and unknowable
- Sustainability is contested too

Culprit and victim
Intensification

Intensification is increasing agricultural production per unit of input (land)

Agronomic arguments for intensification while increasing inputs

“Two times more with two times less”

Or: eco-efficiency?
Resource use efficiency is a multi-dimensional concept

- Resource use efficiency is complex and scale-dependent
- Many dimensions: agronomic, environmental, economic, social, trans-generational, global, etc.
- These are all equally important but agronomy tends to focus on one (or a few) thus recommending a specific pathway towards sustainable intensification
- Again: makes agronomy contested
- Society is confronted with contradictory beliefs, ideas, values
- Sustainable intensification: business as usual or radical change?
Defining and implementing sustainable intensification

• Sustainability is a contested, inevitably (and attractively) ill-defined concept

• Normative and scientific aspects of sustainability are unknown and some even unknowable

• Who orchestrates how ideas are created, used and disseminated, who manages social change and who has the required moral authority?

• In agronomy there is even a sustainability gap

• Hierarchy of considerations to make normative and value-laden choices including (distributive and procedural) justice

• Process of social negotiation, institutional innovation and adaptive management

• Scientific consensus, societal consensus, institutional innovation resulting in “sustainagility”
Sustainable intensification

- Food security with minimal ecological footprint
- Increasing contributions to natural capital and environmental services
- Suggests win-win situations but these are rare
- Trade-off are abundant
- We need an all-inclusive cost-benefit analysis, explicit weighing of trade-offs, based on well-defined principles and practices
From sustainable to (agro)ecological intensification

Sustainable intensification is not enough
Ecological intensification might help but requires ecology-intensive agronomy
Agroecological intensification also addresses socio-cultural aspects
Who defines sustainable intensification determines whose agronomy counts
Cognitive dissonance

• Sustainable intensification is business as usual
• Sustainable intensification lacks theoretical rigour
• Sustainable intensification does not provide guidance
• Sustainable intensification has blind spot for norms, values, human well-being and (distributive and procedural) justice
• Sustainable intensification requires individual empowerment of resource users
A different take on sustainable intensification

Sustainable intensification as an intellectual framework

Sustainable intensification as a process of enquiry and analysis for navigating and sorting out issues of concern in agronomy

Sustainable intensification requires new sources of knowledge and new methods in agronomy

Sustainable intensification requires radical transformations in social-economic organisation of agriculture based on equitable distribution, individual empowerment and justice

Sustainability requires transparency and better analysis of trade-offs
Sustainable intensification should go green

• Ignoring trade-offs makes intensification less green
• Taking them into account requires ecological intensification
• Ecological processes difficult to generalize
• Trait-based ecology
• We need more evidence-based proof
Agronomy is contested......

Agronomy must do more than delivering technological knowledge

Agronomy should play a part in weighing norms and values

It is OK for an agronomist to be value-driven

But is that dark-green enough?
A new agronomy (?)

Agronomy is a(n)

   art
   science
   skill

   driver of social innovation

Re-invent and re-design agronomy as a beta-gamma science that understands the limits of Plant Earth, that understands unknown and unknowable sustainability thresholds, that can help to weigh norms and values, and that can quantify trade-offs
Towards an ecology-intensive agriculture?

From need to change the nature of agriculture

Via business as usual

To societal justice, norms, values and empowerment

In order to arrive at ecology-intensive agriculture

But with a big pile of questions
Conclusions

Society needs coalitions and flexible decisions, a flexible agriculture, and sustainability perceived as moving target based on agreed values and shared knowledge and wisdom.

Global greening possible by sustainable de-intensification of industrial agriculture in the North combined with sustainable intensification of low-input agriculture in the South.

More attention to unknowns of sustainability.

More prominent role of agronomists in knowledge politics towards shared values regarding a dark green agronomy that is no longer contested.
Thank you very much