Critical issues for reflection when designing and implementing Research for Development in Innovation Platforms
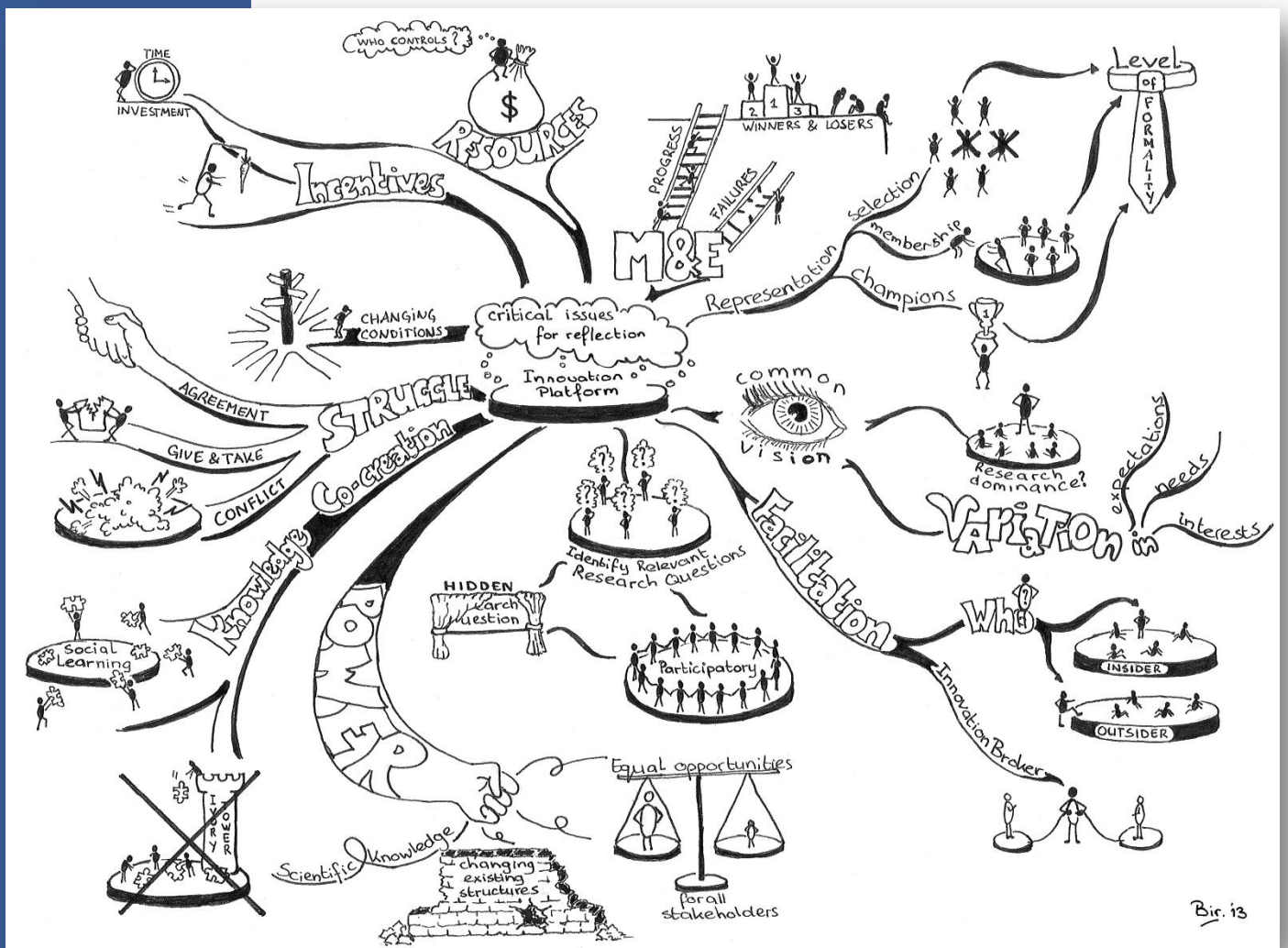
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RESEARCH PROGRAM ON Integrated Systems for the Humid Tropics | led by IITA

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Critical issues for reflection when designing and implementing Research for Development in Innovation platforms

December 2013

Report prepared for the CGIAR Research Program on Integrated Systems for the Humid Tropics (CRP Humidtropics), as part of Strategic Research Theme 3 'Scaling and institutional innovation'

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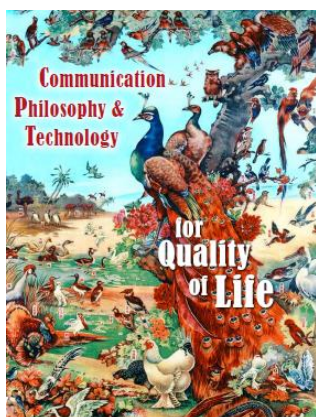Klerkx, L.[1]
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Reference
Boogaard, B.K., Schut, M., Klerkx, L., Leeuwis, C., Duncan, A.J., Cullen, B. (2013). *Critical issues for reflection when designing and implementing Research for Development in Innovation platforms.* Report for the CGIAR Research Program on Integrated Systems for the Humid Tropics. Knowledge, Technology & Innovation Group (KTI), Wageningen University & Research centre, the Netherlands.

Preface

We currently witness an increased interest in 'innovation platforms' as an organisational model for stimulating innovation and development in agriculture and other sectors. This enthusiasm is shared by national and international research organisations, which expect that collaboration with platforms can enhance the relevance and impact of research. While I believe that there are indeed good grounds for embedding research activities in platforms settings, there are also many pitfalls. Let me briefly touch on both.

In essence, 'innovation platforms' are a worthwhile idea because we know that meaningful change happens in networks of interdependent actors, who cannot change if others do not simultaneously change. Hence, innovation depends on different stakeholders (e.g. farmers and relevant parties in a value chain) adopting different practices in a more or less concerted manner – based on some kind coordination, agreement and mutual expectation. In practice, such concerted action does not arise easily, and it is difficult to imagine how it can come about without formal and informal spaces for communication, learning and negotiation. Innovation platforms can offer such space. And in working towards a shared idea about the future, having access to research capacity can be a great asset to any network or platform. Research in and with platforms can inspire and provide eye-openers, and when carried out in collaboration with other platform members, it can help to reduce critical uncertainties, result in common understandings and more agreement about problems and solutions, as well as structurally improve relationships among interdependent stakeholders. All this is highly relevant to fostering meaningful change, development and innovation.

As mentioned, the pitfalls are many. Whenever people come together with an ambition to realise change, there will be messiness, tension and competition. Also, other forms of multi-stakeholder collaboration have shown that it is generally not easy to achieve constructive interaction. In addition, platform members are likely to disagree on the direction that development should take, requiring that researchers need to navigate the slippery terrain of politics, ethics and legitimacy. When outside donors are involved, the ownership of innovation platforms can easily be hijacked by formal programmes, or platforms may become a space from which people only want to extract resources. Moreover, eliciting relevant research questions is notoriously difficult, and dominant ways of research planning and funding can easily prevent that research becomes a truly collaborative or demand-led endeavour. Similarly, obsolete research and extension cultures may lead to the establishment of platforms for technology diffusion purposes only, thus failing to address important broader social and organisational constraints.

This report aims to support researchers in anticipating and avoiding such pitfalls. We do not provide a recipe book or detailed guidelines on how to set-up or interact in and with innovation platforms. Contexts are so different that recipes cannot work. Hence, we have chosen to raise a number of issues and questions that need to be reflected upon when researchers want to engage with innovation platforms, and provide some relevant insights and further references. We hope that this will be useful for improving the quality of research for development work.

Cees Leeuwis

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List of abbreviations and acronyms

AIS	Agricultural Innovation Systems
CDI	Centre for Development Innovation
CGIAR	Consultative Group on International Agricultural Research
IDS	Institute of Development Studies
ILRI	International Livestock Research Institute
IP	Innovation Platform
KTI	Knowledge, Technology and Innovation Group, Wageningen University
M&E	Monitoring and Evaluation
ODA	Overseas Development Administration
R4D	Research for Development
RAAIS	Rapid Appraisal of Agricultural Innovation Systems
RAAKS	Rapid Appraisal of Agricultural Knowledge Systems
WUR	Wageningen University and Research Centre

1 Introduction

1.1 Rationale

Over the past decades, there has been increasing debate about the role and impact of research in society. Such debates have resulted in novel ideas about research for development (R4D), aiming at increasing the contribution of research to policy and development processes, for example through innovation platforms. An innovation platform[1] can be defined as "a physical, virtual, or physico-virtual network of stakeholders which has been set up around a commodity or system of mutual interest to foster collaboration, partnership and mutual focus to generate innovation on the commodity or system" (Adekunle and Fatunbi 2012: p983, see Definition Box).

Inovation platforms can act as spaces for knowledge exchange leading to action without the need for research or researchers (e.g. Nederlof et al. 2011). So, research is not always necessary in innovation platforms. In Humidtropics, however, innovation platforms explicitly incorporate research as a way to reach development outcomes more effectively. The research for development angle is therefore central in in the current document. As such, we refer to 'R4D in innovation platforms'.

Many researchers and project managers in the field of agricultural development are currently confronted with studying, using, facilitating and/or implementing innovation platforms. The use of innovation platforms entails a shift away from traditional linear research-extension-farmer transfer of technology towards agricultural innovation system (AIS) thinking (see Definition Box for AIS). AIS thinking considers innovation as a combination of technological and non-technological - e.g. social and institutional - advances and has fundamental consequences and challenges for research (Leeuwis 2004).

First of all, innovation processes entail social and organizational technological as well as technological social and organizational components (Definition Box for innovation). However, the latter two, social science based components of innovation, are generally poorly represented in traditional agricultural research institutes (CGIAR Science Council 2009; Hall et al. 2003). As such, underlying principles of innovation platforms and innovation system thinking can be rather unclear or perceived as vague and abstract. Along with the increasing popularity of innovation platforms in agricultural research for development circles, there is a wide variety of definitions and applications of such platforms. This leads to the risk of considering Innovation platforms as a 'new tool' or 'approach', while at the same time continuing 'business as usual'. A document with key principles of innovation platforms can help to provide a common understanding as well as a basis for reflection on innovation platforms. It can be helpful to raise awareness about a few critical issues as well as the complexity of R4D in innovation platforms.

Moreover, it is increasingly acknowledged that barriers for agricultural development are not only technological but also institutional (e.g. Roep and Wiskerke 2012; Flinterman et al. 2012). Institutions can be defined as the written and unwritten rules of the game, including for example laws, regulations,

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[1] Throughout this document we use the term 'innovation platform'. Other terms are: Innovation network, Innovation coalition, Innovation configuration, Multi-stakeholder platform, Learning platform, Learning Alliance, Association interprofessionnelle (French), Plataforma de inovação (Portuguese) (Kristjanson et al. 2009; Klerkx et al. 2009; Homann-Kee Tui et al. 2013).

attitudes, habits, practices, norms, values, culture, and incentives (Klerkx et al. 2009; Hermans et al. 2012; Hounkonnou et al. 2012). This means that in order to be successful, many technological innovations require changes in the institutional context, for example adapted regulations or incentive structures (see Definition Box for institutional change). This emphasis on institutional change is congruent with the notion of system innovations[2], which are structural changes that combine 'hardware', 'orgware' and 'software' (Leeuwis 2013, see Definition Box). The underlying idea is that innovation platforms can facilitate institutional changes and support system innovations through increased interaction, negotiation and learning between stakeholders.

Humidtropics has an explicit focus on system innovations, i.e. larger changes in society. This also requires changes in the way research is organised and conducted. Being a space where learning and negotiation happens, innovation platforms may unfold as arenas of struggle in which research can easily become contested and credibility can be at stake (Leeuwis 2000; Schut et al. 2013a). In order to safeguard the credibility, legitimacy and relevance of research in innovation platforms, it is therefore important to be aware of and reflect on roles and contributions of research(ers) to innovation processes (Schut et al. 2013a).

The current document therefore aims to increase awareness about the complexity of research in innovation platforms, including (new) roles of research(ers). The main target group of this document is therefore researchers and project managers in Humidtropics, but the document may be of interest to R4D practitioners and other decision makers as well.

We focused less on the practicalities of innovation platforms, because quite a few hands-on manuals have been written on innovation platforms (e.g. Adekunle et al. 2010; Nederlof et al. 2011; Makini et al. 2013; Pali and Swaans 2013). Instead we focused on the reflective level by addressing relevant reflective issues and questions. As such this document is an invitation for continuous (self-)reflection on what we are doing, where we are going and why. This document builds on the [Humidtropics Practice Briefs on innovation platforms](). The document can be helpful:
- to reflect upon the credibility, legitimacy and relevance of research in innovation platforms
- to continuously discuss and (re)define roles and responsibilities in innovation platforms
- to support decision-making while operationalizing innovation platforms
- to reflect on the operationalization of innovation platforms
- to enhance joint learning experiences from innovation platforms

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[2] "System innovation" is fundamentally different from "innovation system". Although these terms are sometimes used as if they are interchangeable, they are not. An innovation system refers to *a network of stakeholders* involved in innovation, whereas "system innovation" refers to *comprehensive changes in society,* including institutional changes such as changed relationships and modes of thinking.

Definitions Box

Innovation platform
"A physical, virtual, or physico-virtual network of stakeholders which has been set up around a commodity or system of mutual interest to foster collaboration, partnership and mutual focus to generate innovation on the commodity or system." (Adekunle and Fatunbi 2012: p983)

Innovation processes
Activities and processes associated with the generation, dissemination, adaptation and use of new technical, institutional and organizational knowledge, skills, and resources to the benefit of all stakeholders in the partnership (adapted from Adekunle and Fatunbi 2012: p983).

Agricultural Innovation System (AIS)
"A set of interrelated components (i.e., individuals, organisations, public agencies or institutions) working through collaboration and competition to generate, diffuse and utilise knowledge and technology that have (economic) value within the agricultural sector." (Sumberg 2005: p37)

Innovation broker
"Persons or organizations that, from a relatively impartial third-party position, purposefully catalyse innovation through bringing together actors and facilitating their interaction." (Klerkx and Gildemacher 2012: p221)

System innovation
"A (re-)configuration of 'hardware' (the bio-material dimension: e.g. technical devices, physical practices, bodily skills), 'orgware' (the social dimension: relationships, institutions3, organisational forms) and 'software' (the symbolic dimension: knowledge, meanings, visions, discourses) ." (Leeuwis 2013:p10)

Institutional change
Change of rules, norms, values or behaviour of people and organisations with the need to perform a new task or to perform and existing one differently (adapted from Hall et al. 2003).

1.2   Outline of the document

Section 2 aims to provide some clarity and a common understanding of innovation platforms. Subsequently, section 3 forms the main part of the document and provides an overview of critical issues for reflection when designing and implementing R4D in innovation platforms. The issues can be grouped in five themes (Table 1). For each issue we:
–   explore the issue,
–   discuss the (potential) roles of research(ers),
–   summarize the key questions, and
–   provide additional references for more (hands-on) information (where applicable).

We aimed to create a user-friendly document that is compact and fairly comprehensive. We therefore described each issue rather brief and provided references to literature for further exploration. We have visualized the main issues by means of a mind-map (Annex I). If you like, you can print the mind-map, hang it in the office, use it as reminder and source of inspiration, and expand the map with additional ideas and experiences over time.

Annex II provides a table with the main reflective questions, structured according to the five themes. This table can be used as 'checklist' by researchers and project managers to reflect upon the design and implementation of Innovation platforms in their specific Action Area in Humidtropics.

Finally, there is no 'one-size-fits-all' design for innovation platforms, so this overview should not be seen as a blueprint, but rather as a 'pallet of options'. These options can be chosen, selected and adapted to take what is relevant to the situation in a specific Action Area.

Table 1. Five themes with 11 issues for reflection when designing and implementing R4D in innovation platforms

Theme	Issues to reflect upon
1. Composition and initiation of the platform	1.1 Representation and composition
	1.2 Common objective
	1.3 Relevant research questions
2. Coordination and facilitation of the platform	2.1 Process facilitation
	2.2 Knowledge co-creation
3. Power and conflict in the platform	3.1 Power asymmetries
	3.2 Conflicts negotiations and trust
4. Resources, incentives and timeframe	4.1 Incentives and motivation
	4.2 Changing conditions and flexibility
	4.3 Resources and sustainability
5. Monitoring and evaluation	Monitoring and evaluation

2   What are innovation platforms?

2.1   Configurations and phases of innovation platforms

Innovation platforms have been ascribed a variety of functions (e.g. Lundy et al. 2013; Adekunle and Fatunbi 2012; Lema and Schut 2013; Homann-Kee Tui et al. 2013; Tenywa et al . 2011; Nederlof et al. 2011). Innovation platforms can for example:

- support the operationalization of research and development
- contribute to improving the relevance and impact of research
- contribute to increasing returns on investment in agricultural research for development
- stimulate and strengthen interaction between multiple stakeholders
- link different stakeholders to achieve a common objective
- contribute to jointly identifying and solving complex problems
- provide an enabling environment for innovation
- contribute to overcoming institutional barriers and creating institutional change

There seems some commonality among situations where innovation platforms can be suitable. For example platforms can help in situations where there are multiple stakeholders, who deal with complex issues which require coordinated action, where there are institutional barriers hampering development, where competition or conflict is likely to occur, and where there is space for experimentation (Duncan et al. 2013).

Yet, there is quite some variation in the way innovation platforms are organized and operationalized. Configurations of innovation platforms vary for example according to the theme, sector or (combination of) commodities covered, e.g. livestock, crops, or natural resource management. There is also variation in terms of status, formalisation, and modes of communication (Nederlof et al. 2011); in some cases for example Innovation platforms function by organising regular formal meetings with a steering body (president, vice-president, etc.). In other cases platforms use less formal communication channels (e.g. exchange visits) and operate at rather irregular frequency.

Innovation platforms can also vary at levels of operation, e.g. community, district, national, and international – or a combination of these (Nederlof et al. 2011; Adekunle and Fatunbi 2012; Tucker et al. 2013). At different levels Innovation platforms have different possible effects. For example, a platform at community or district level can be suitable to change farming practices, whereas a platform a national level may be more suitable to influence policies (Tucker et al. 2013). If multiple platforms operate at different levels, it is important that these are linked. Linkages between platforms can be vertical – i.e. at different levels – as well as horizontal – i.e. at the same level (Tucker et al. 2013). Within Humidtropics, such linkages are particular important with regard to up and out scaling of innovations (see also Wigboldus and Leeuwis 2013).

Innovation platform phases also vary (Table 2), although in general the process can be characterised by the following phases: initiation with stakeholder identification, identification of common objectives and problems, search for solutions, implementation of actions and evaluation of these actions. Though there is some logical order in these phases, e.g. starting with stakeholder analysis, this does not mean a phase can be 'closed'. For example, over time it can be necessary to re-identify stakeholders and invite additional stakeholders. Thus, describing Innovation platform processes in phases can imply a rather linear process, whereas effective platforms are far from linear in the way they work (Leeuwis 2004). Innovation processes are iterative and characterized by joint learning, reflection, experimentation and adaptation. As such, phases are repeated over time and can occur simultaneously.

Table 2. Overview of innovation platforms phases according to various authors

Authors	Platform phases
Varma et al. 2009	6 phases: Identify stakeholders; Establish learning alliance; Assessment, knowledge sharing and consensus building; Visioning and prioritizing; Planning and implementation; Monitoring and evaluation
Adekunle et al. 2010	10 phases: Location of sites; Identification of commodity or system; Identification of stakeholders; Engagement of researchers; Development of governance and management guidelines; Facilitation of interaction of stakeholders; Development of business plan; Implementation of business plan; Establishment of participatory M&E measures; Review of implementation and lessons learnt.
Tenywa et al. 2011	6 phases: Identification of research and developmental challenges; Site selection; Consultative and scoping study; Visioning and stakeholder analysis; Development of action plans; Implementation of action plans
Nederlof and Pyburn 2012	4 phases: Scoping and preparation; Process management; Learning and restructuring; Renegotiating
Homann-Kee Tui et al. 2013	7 phases: Initiate; Decided on focus; Identify options; Test and refine solutions; Develop capacity; Implement and scale up; Analyse and learn
Makini et al. 2013	6 phases: Initiation; Establishment; Management; Sustainability; Innovation; Learning and knowledge

2.2 (Potential) roles of research(ers) in innovation platforms

A paradigm shift from linear thinking to innovation system thinking entails a re-conceptualizing of the roles and contributions of research in development projects (Sumberg 2005). The way research is organised and conducted is part of the institutional context. That means, institutions also include the habits, values, norms, and practices of *research* organisations (Hounkonnou et al. 2012; Hall et al. 2003, see Definition Box for institutions). The implications of this realisation are considerable for Innovation platforms. For example, institutions influence how decisions are made, how research priorities emerge, how research questions are identified, how relationships with stakeholders are shaped, how knowledge is produced and shared, and how learning and reflection happens (Hall et al. 2003; Leeuwis 2013). All these examples influence the credibility, legitimacy and relevance of research in and on Innovation platforms.

Changing roles of research and researchers are increasingly recognized by researchers themselves, but also by, for example, policy makers, farmers, and development practitioners. The key question is how research can contribute to development impact (Leeuwis 2013). The CGIAR science council suggested five roles for CGIAR centres (CGIAR Science Council 2006: p15): 1) a primary research function; 2) a secondary research role at a more strategic/applied level; 3) a catalytic role; 4) a facilitative or enabling function; and 5) an advocacy role. In innovation platforms, research can for example reduce uncertainty that hinders change, or be a mechanism to develop common starting points and overcome conflicts. It can also contribute to social learning and a shared understanding.

Given these potential roles of research, a key challenge is to explore what (combination of) roles can enhance the credibility, legitimacy and relevance of research for different stakeholders in innovation platforms (Schut et al. 2013a). Ideas of social scientists and natural scientists about the roles of research and scientific knowledge often differ (Leeuwis 2004). Moreover, ideas about the roles of research vary between individual people, based on personal experiences, capacities, views, values and attitudes (Milgroom et al. 2011; Neef and Neubert et al. 2011). It is therefore important to clarify (expected) roles of research in innovation platforms. Stakeholders have different expectations of the roles of research. These expectations have been shaped over time, e.g. by former development projects. For example, in

areas with a long history of linear, supply driven agricultural research, it is not self-evident or easily accepted that research fulfils other roles than technological knowledge supply (Neef and Neubert et al. 2011). Expectations of scientific contributions can also be unrealistic. Unrealistically high expectations can lead to later disappointments and a loss of confidence in finding a common solution.

Moreover, fulfilling multiple roles in the same project (e.g. project manager, process facilitator, technical expert, social science expert, knowledge broker) can lead to uncertainty about what researchers actually do and represent. Such uncertainty can lead stakeholders to lose confidence in researchers (Klerkx et al 2009). Finally, researchers themselves can become confused about what roles they are expected to fulfil. Opposing expectations from different parties about roles can also lead to internal conflicts. By making expectations on researchers' roles explicit such internal conflicts can be partially dealt with.

A common trap is for researchers to view platforms as dissemination mechanisms for their research findings. This presents the risk that platforms become part of the linear "pipeline" mode of working and do not function as genuine equitable spaces to foster innovation. Because researchers tend to be articulate and powerful in platform discourse, strong facilitation is needed to avoid platforms becoming dominated by researcher agendas.

Not only roles of researchers change, also potential roles of knowledge. That means, there are more roles for knowledge in innovation processes in addition to the traditional knowledge supply. For example, in innovation processes knowledge can help:
- to reduce uncertainty, which restrain stakeholders from taking action.
- to develop common departure points necessary for coordination and collective action
- to improve relations and understanding among stakeholders by joint fact-finding
- to generate unexpected feedback and eye-openers about the system

To conclude, we argue that it is of utmost importance to reflect upon and explicate the (potential) roles of research(ers) in innovation platforms. If not, there is a risk of "uncritically reproducing dominant linear conceptions of the role for science" (Turnhout et al. 2013:p363).

3   Critical issues for reflection on R4D in innovation platforms

3.1   Composition and initiation

3.1.1   Representation and composition

Exploring the issue
Stakeholder identification is an important step in the initiation phase of innovation platforms (e.g. Nederlof et al. 2011; Adekunle and Fatunbi 2012; Makini et al. 2013). Stakeholders with an interest in the innovation process can include farmers, traders, private sector, NGOs, local/provincial/national policy makers, extension workers, finance institutions, environmentalists, researchers, etc. (Nederlof et al. 2011; Adekunle and Fatunbi 2012; Tenywa et al. 2011; Schut et al. 2013a). Subsequently, choices have to be made on the selection of networks and participants.
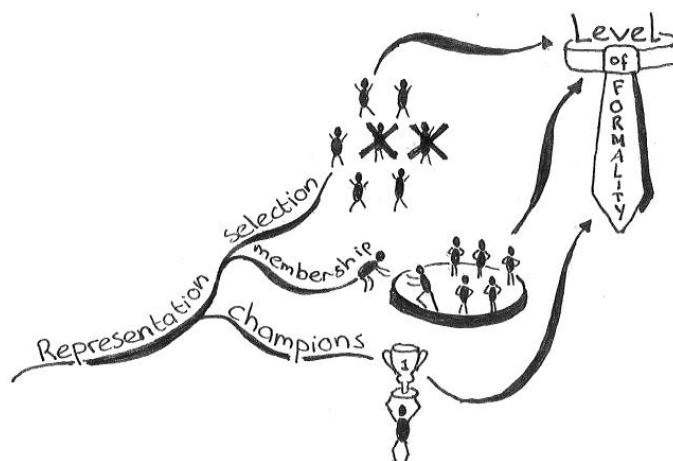
With regard to the selection of networks, one can question if innovation platform(s) should build on existing networks or if new networks should be created (Tucker et al. 2013). The answer varies according to the specific context or action area. Table 3 gives an overview of pros and cons. In addition, representatives need to be selected, because it is impossible to individually include each stakeholder of the agricultural innovation system (Steins and Edwards 1999). The importance of representation to the platform's effectiveness should not be underestimated, because representatives negotiate and take decisions on behalf of their constituencies, which is a crucial role in innovation processes (Steins and Edwards 1999; see also 3.3.2 Conflicts and negotiation).

Table 3. Pros and cons of building on existing networks and creating new networks

	Pro's	Con's
Building on existing networks	Existing networks can form the basis for nested platforms, supporting scaling up 1	Existing networks that are characterised by a strong hierarchical social and political structures may be less supportive to participatory approaches3
	Existing institutional arrangements can support joint action1	Existing institutional arrangements with vested authority can hamper joint action 1
	Platform formation can be rather quick when involving existing leadership2	Risk of reproducing prejudices and asymmetric power-relations1, 3
Creating new networks	Potential to re-structure (existing) institutional arrangements	Relatively high transaction costs (time and effort) 1
	Potential to re-structure existing power relations	Can be seen as 'competing forces' by existing networks1

Sources: [1] Steins and Edwards 1999; [2] Tenywa et al. 2011; [3] Cullen et al. 2013a

However, selection of representatives does not go without challenges. To start with, not all stakeholders may be organized in groups (Schut et al. 2011). Moreover, it is almost impossible for representatives to completely represent the interests of their constituencies (Steins and Edwards 1999). It is known that constituencies rarely form a homogenous group; instead they are characterised by diversity. For example there are differences between farmers in a given community (e.g. Long 2001; Dorward 2009; Vorley et al 2012; Cullen et al. 2013; Klerkx and Nettle 2013, Schut et al 2013b). Men and women can also have different interests, roles and needs in the innovation process. It can be challenging to include this diversity in the platform "due to purposive selection of participants as well as self-selection of actors with an innovative mind-set" (Klerkx and Nettle 2013: p.80). In addition, certain stakeholders can dominate the platform, for example government bodies (Cullen et al. 2013a). Also the definition of platform membership - which can be formal or informal - can (implicitly) exclude certain participants from the innovation process (Cullen et al. 2013a). Besides, it is becoming increasingly popular to include 'innovation champions' (Klerkx et al. 2013). It is then important to explicate what kind of champions are included and on what grounds, e.g. technology, power, process, or network champion. Innovation champions can be appointed, but they can also emerge more informally within the Innovation platform process (Klerkx et al. 2013).

Roles of research(ers)
During the initiation phase of the innovation platforms, researchers can support stakeholder mapping. In addition, the selection of networks and representatives entails a lot of (implicit) choices and assumptions on power and equity (see also 3.3.1 Power asymmetries), which affect the innovation processes and the platform's effectiveness. Researchers can support this process by making such choices and the underlying assumptions explicit.

Moreover, during the initiation phase researchers can undertake capacity development to ensure a common understanding on innovation platforms in Humidtropics. For example, stakeholders and partner organisations who are built on strong linear research-extension structures (e.g. NARS, NGO's or the government), may be unfamiliar with innovation system thinking. It can then be challenging to actively involve them in innovation platforms. In such situations, it can be helpful to provide training on innovation systems thinking before organizing stakeholder meetings (Leeuwis 2004).

Summarizing key questions
1. Does the innovation platform build on existing networks or will new networks be created?   2. Who selects representatives? And how?   3. Is diversity among constituencies, e.g. farmers, taken into account?   4. How is membership of the platform defined?   5. When innovation champions are included, on what grounds and with what purpose?   6. How are various platforms linked?

More (hands-on) information on stakeholder analysis
- Guidance Note on How to Do Stakeholder Analysis of Aid Projects and Programmes (ODA 1995)
- Social Analysis Sourcebook (World Bank 2003)
- Multi-stakeholder Processes Resource Portal. Stakeholder Analysis (WUR CDI)
- Rapid Appraisal of Agricultural Knowledge Systems. A RAAKS resource box (Engel and Salomon 1997)

3.1.2 Common objective

Exploring the issue

An innovation platform often needs a common objective in order to function effectively (e.g. Nederlof et al. 2011; Makini et al. 2013). This can be achieved through visioning and foresight exercises (e.g. Van Rooyen et al. 2013; Klerkx et al. 2009). Although it is often important for stakeholders to agree upon a common objective, conflict can also be an important catalyst for change. Interests between stakeholders vary – and are likely to diverge – this makes agreement upon a common objective in itself a negotiation process (see also 3.3.2 Conflict and negotiation). Pushing stakeholders to achieve consensus may result in certain stakeholders losing out, particularly those with less of a voice.

Roles of research(ers)

Setting a common vision objective of an innovation platform does not happen 'naturally', but is value-driven. For research(ers) this has (at least) three implications.

Firstly, the platform objective is often defined within a project proposal, before stakeholders have been consulted. This bears a risk of dominance by researchers and project management, which can be detrimental to an effective innovation process in which all stakeholders can equally contribute (Klerkx et al. 2009; van Paassen et al. 2011; Cullen et al. 2013a, Lema and Schut 2013). Imposed goals can also hamper joint learning, whereas learning is a perquisite for successful innovations (Kristjanson et al. 2009). Moreover, a common objective entails underlying assumptions about how change occurs and how development outcomes are expected to be reached. For example, there are underlying assumptions about how social change comes about and what 'participation' (should) entail (Leeuwis 2000; Cullen et al. 2013a). An important role for researchers is then to make such underlying project assumptions explicit to platform members (Milgroom et al. 2011).

Secondly, stakeholders usually come with their own expectations of research, often based on former project experiences. For example, research can be expected to supply knowledge rather than to engage in co-creation of knowledge together with stakeholders (Schut et al. 2013a; Neef and Neubert et al. 2011; see also 3.2.2 Knowledge co-creation). Moreover, researchers tend to be well-educated which gives them high status (Lema and Schut 2013, see also 3.3.1 Power asymmetries). Platform members could then fairly easily accept – or even expect – researchers to come up with a platform objective without expressing and valuing their own ideas.

Finally, researchers have their own interest in the platform and the platform objectives (Milgroom et al. 2011). Researchers' interests do not necessarily overlap with interests and objectives of other stakeholders. A major question for researchers is what to do when the platform objective differs from the (initial) project vision and research agenda. In some cases there can be merit in developing actions around issues which are not central to project objectives in order to build trust and social capital within the platform. Project issues may then return to the agenda later in the process.

More (hands-on) information to identify a common vision
– [Multi-stakeholder Resource Portal. Visioning tool](#) (WUR CDI)
– [Knowledge co-creation portal. Multi-stakeholder processes. Tools – Visioning](#) (WUR)

3.1.3   Relevant research questions

Exploring the issue
Research questions tend to be set by researchers, reflecting their values and aspirations (Milgroom et al. 2011). To ensure a participatory research process, it is important to involve stakeholders and give them opportunities to articulate their demands (Klerkx and Leeuwis 2009; Klerkx and Nettle 2013). This may require the creation of 'safe spaces' within which stakeholders - particularly the more vulnerable - can express their views.

Roles of research(ers)
Supporting stakeholders in expressing their needs and translating these needs into relevant research questions is an important role for researchers. This is however no easy task (Leeuwis 2004; Klerkx and Leeuwis 2009; Turnhout et al. 2013).
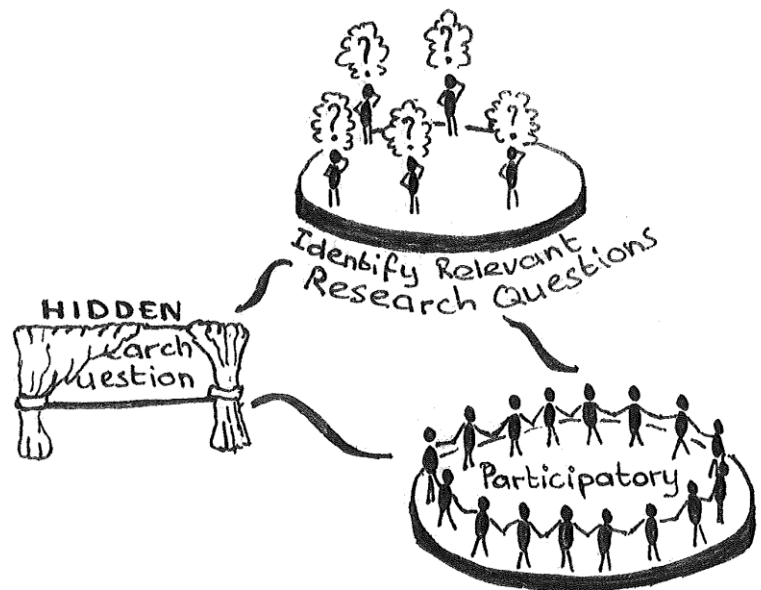
In some cases certain stakeholders may not be used to expressing their needs in research terms, due to unfamiliarity with research processes, particularly innovation system thinking (Turnhout et al. 2013; Cullen et al. 2013a). In other cases stakeholders may frame their needs around the resources they believe they can secure from a project, or what they think researchers or project instigators want to hear (Cullen et al. 2013a). It is therefore important that stakeholders are sufficiently empowered to articulate their needs, and steps may need to be taken to ensure that they can play an equal role as partners in the research process (Klerkx and Leeuwis 2009). Moreover, research questions are not always often clearly articulated, but often hidden in multi-stakeholder negotiation processes. In such situations joint research demand articulation is needed (Schut et al. 2011). Participatory methods can be useful to identify stakeholders' needs. It might be necessary to develop additional creative – or adapt existing - participatory approaches that help to elicit research questions together with stakeholders.

In addition to creative participatory methods, it is important that research questions are generated in the area where the action takes place - e.g. cropping field, grazing area - rather than in a meeting place away from the actual practices (e.g. Blackmore et al. 2007). When researchers and other stakeholders jointly observe and discuss practices and challenges in the field, often different – but highly relevant - questions

come to the surface than initially anticipated. Hence, innovation platforms should not be restricted to meetings, but confrontation with daily practices in the field is an important way to identify stakeholders' need and relevant research questions.

It can happen that stakeholders' demands and relevant research questions conflict with researchers' interests or that there is no real demand for the research proposed by researchers (Klerkx and Leeuwis 2009; Lema and Schut 2013). For example, an identified need might not fit within the expertise of the researchers; or the relevant research questions concern a different technology than the project/team is working on; or they concern a different sector e.g. cashew instead of livestock production; or they go beyond agriculture, e.g. a lack of infrastructure. In such situations research might not be the best way to address stakeholders' needs (Klerkx and Leeuwis 2009). In such situations it might be need to negotiate with donors and partner organisations how much space there is to divert from the original research plans (see also 3.4.2. Changing conditions).

Creative participatory methods and effective translation of stakeholders' demands can result in "a coherent set of relevant natural and social science questions" (Leeuwis 2004: p.183). These questions then can then lead to interdisciplinary research in innovation platforms (Adekunle and Fatunbi 2012). Yet, social science and natural sciences have very different ideas about roles of knowledge and research in society (Leeuwis 2004). As such researchers in innovation platforms can be confronted with contradictory perceptions of colleagues. Interdisciplinary research does not happen automatically by placing researchers in interdisciplinary teams. Instead, an open attitude, the willingness to learn, and a basic understanding of other sciences – e.g. for social scientist to understand some basics of technical agricultural sciences and vice versa – is a prerequisite for successful cooperation (Boogaard et al. 2011).

Finally, when relevant social and natural science questions have been identified, research needs to be carried out. Subsequently, this entails questions like how is the research carried out? Where? e.g. on an experimental station, field school or in society? By whom is the research conducted? Who evaluates? And how? When are preliminary and intermediate results made available? It is in these activities that interests of researchers and other stakeholders in the innovation process can diverge. For example, there can be an opportunity – or need – to present preliminary research findings to platform participants, whereas researchers want to ensure scientific validity and present final findings at a later stage.

Summarizing key questions
1. Are stakeholders are sufficiently empowered to articulate their demands?
2. How and by whom are research questions identified?
3. Are stakeholders' needs effectively translated into a coherent set of relevant natural and social science questions?
4. How to deal with demands that lie outside the project and research scope?
5. How, where and by whom is research conducted?
6. When and how are research findings made available?

*More (hands-on) information on participatory methods for demand articulation*
– [Knowledge co-creation portal. Multi-stakeholder processes. Tools - Interests and Roles](#) (WUR)
– [Handbook for Participatory Action Research, Monitoring and Evaluation](#) (Chevalier and Buckles 2013)
– [Insights into Participatory Video: A Handbook for the Field](#) (Lunch & Lunch 2006)

3.2 Coordination and facilitation

3.2.1 Process facilitation

Exploring the issue
Innovation platforms bring people together
which can lead to increased interaction.
However, to come to meaningful innovations it
is insufficient to merely 'bring people together'.
It is widely recognized that fruitful and effective
interaction between stakeholders does not
happen 'out of the blue', especially not between
stakeholders or organisations that normally do
not directly interact (Klerkx and Nettle 2013;
Van Rooyen 2013). Instead, it requires good
facilitation (Adekunle and Fatunbi 2012; Klerkx
and Nettle 2013; Van Rooyen et al. 2013;
Nederlof et al. 2011).
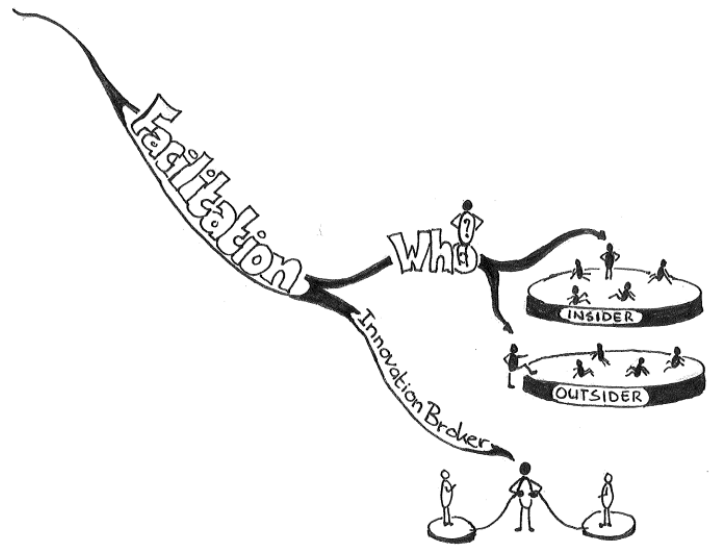
Effective facilitation of the platform contributes to an enabling environment which can improve the quality
of interactions between stakeholders (Nederlof et al. 2011; Klerkx et al. 2009; Hounkonnou et al. 2012;
Lema and Schut 2013). Effective facilitation of interactive processes can be characterised by the following
seven tasks[3] (Leeuwis 2004):
– preparing the process,
– reaching and maintaining process agreement,
– joint exploration and situation analysis,
– joint fact-finding and uncertainty reduction,
– forging agreement,
– communication of representatives with constituencies,
– co-ordinated action

Facilitators can come from various organisations, for example national and international NGOs,
international donor agencies, farmer organisations, national and international research organisations, and
government organisations (Klerkx et al. 2009). They should attempt to adopt a neutral position, in which
they are recognized by all stakeholders as taking the interests of all into account (Klerkx et al. 2009; van
Rooyen et al. 2013). At the same time, however, in some cases facilitators may need to advocate on
behalf of certain groups - i.e. the less powerful - and as such may need to depart from their neutral
position. The facilitator can be an 'insider' or 'outsider' of the Innovation platform. An insider may rather
easily understand existing relations between stakeholders and build on these. On the other hand, an
insider has specific interests in the platform, and as such is not 'neutral' (Klerkx et al. 2009). Moreover,
institutional innovations require re-structuring of social relations. Such re-structuring often requires
'purposeful destruction' of existing structures to create new relationships (Klerkx et al. 2009). Since an
insider is part of existing (power) structures, it is questionable if an insider is the most suitable person to
do this (Cullen et al. 2013b).

It might be more effective to involve an outsider for facilitation of the Innovation platform. An outsider is a
relatively 'neutral' third party and may have more freedom to act and can be more supportive to

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[3] These tasks should not be seen as a linear process, but as an iterative process in which different tasks can be
fulfilled simultaneously and repeatedly over time.

institutional change (Klerkx et al. 2009; Steins and Edwards 1999). Such a third party can be a dedicated organisation for facilitation, i.e. an innovation broker (see Definition Box; Klerkx and Gildemacher 2012). However, even an outsider is not completely neutral. For example, a facilitator is influenced by former experiences with and knowledge about the problem to be tackled. He/she can also be influenced by the organisation that hired him/her for facilitation (Steins and Edwards 1999). Demarcation of the mandate of an outsider is also a challenge, e.g. what kind of decisions can an external facilitator take without consultation and approval from the organisation that hired him/her (Klerkx et al. 2009). An outsider also runs into the risk of becoming – or being seen as - a 'hidden messenger' for specific stakeholders, e.g. for government programs (Klerkx et al. 2009; Cullen et al. 2013a).

The facilitator requires significant process management skills. In ideal facilitator would for example be able to link stakeholders, to include everybody in the process, to create a safe environment in which new ideas can emerge, to hear every voice, to facilitate negotiation processes, to mediate between conflicts, to deal with power differences, to speak multiple languages (understanding the language of different stakeholders, e.g. traders, scientists and farmers, but sometimes also literally in multiple (local) languages), to stimulate creativity, to help stakeholders to think 'out of the box', to support social learning, to deal with resistant or passive attitudes to provide a mirror for (self-) reflection, and to communicate effectively (Klerkx et al. 2009; Nederlof et al. 2011; Victor et al 2013; Adekunle and Fatunbi 2012; Van Rooyen et al. 2013; Steins and Edwards 1999, Kristjanson et al. 2009).

In all these tasks, it is key that process facilitation is about *serving* the platform members and supporting them to reach their desired outcomes (Leeuwis 2004; van Rooyen et al. 2013). This is no easy task, because facilitators need to mediate between different goals and interests of various stakeholders (Klerkx et al 2009; Steins and Edwards 1999; Nederlof et al. 2011). Moreover, they need to perform a continuous balancing act between opposites, for example: steering too much versus too laissez-faire, having sufficient expert knowledge to maintain legitimate position versus acting too much as expert overruling contributions of others, empowering non-powerful actors versus acting as a spokesperson, representing funding or research interests versus interests of others (Klerkx and Nettle 2013). It can require considerable training and experience to develop these skills and fulfil the above tasks adequately (Klerkx 2009).

Roles of research(ers)
The main question for researchers is if they should facilitate the platform – or not. If researchers decide to facilitate Innovation platforms, at least two major challenges exist. First of all, researchers are non-neutral as they have their own interest in the platform (Klerkx et al. 2009). Their interests during the innovation process are for example to safeguard the credibility, legitimacy and relevancy of research to different stakeholders (Schut et al. 2011; 2013a). These interests can be difficult to unite with being a trustworthy facilitator. This is even more challenging in situations where research becomes rather easily contested, such as complex multi-stakeholder processes that are likely to be characterised by conflicts (Turnhout et al. 2013; See 3.7 Conflict and negotiation).

Secondly, facilitation of Innovation platforms entails a shift from a traditional expert role to a facilitator role. From the above listed tasks, it may be clear that supporting innovation processes is very different from developing and supplying knowledge. It requires considerable capacity building of researchers to develop the necessary skills (Klerkx and Nettle 2013). Maybe even more important, it requires recognition and space within existing organisational research structures for such new roles. The latter is sometimes quite difficult due to existing ideas about what research is – and is not (Klerkx and Nettle 2013). Hawkins et al. (2009) explain that within the CGIAR some "research organizations (and managers) prefer to 'stay out of the development business', focusing more on what they regard as their 'core business' of generating new technology", while others "recognize that, for research to contribute to development,

research organizations sometimes need to step into this inter-institutional vacuum and accept the role of what has been called a 'boundary organization" (Hawkins et al. 2009:p30).

There exists a growing recognition that researchers can and should fulfil such new roles in order to have development impact. This does not however mean that these roles are widely recognized and accepted by colleagues and research managers (yet). In general, such activities can count on limited recognition within research organisations (Klerkx et al. 2009). This could be related to the difficulty of assessing the contribution of innovation brokers through conventional impact evaluation (Klerkx et al. 2009; see 3.5 Monitoring and Evaluation).

Summarizing key questions
1. Who facilitates the Innovation platform? an 'insider' or 'outsider'? 2. Can – or should – researchers facilitate the Innovation platform? 3. If researchers fulfil 'innovation broker' roles, are these sufficiently rewarded and recognized by research organisations?

More (hands-on) information on facilitation of multi-stakeholder processes
– 'Operational field guide for developing and managing local agricultural innovation platforms' (Makini et al. 2013)
– Putting heads together: Agricultural innovation platforms in practice (Nederlof et al. 2011)
– Multi-stakeholder Processes Resource Portal. Facilitation Skills (WUR CDI)
– The Brokering Guidebook (Tennyson 2003)
– Multi-Stakeholder Processes for Governance and Sustainability—Beyond Deadlock and Conflict (Hemmati 2002)

3.2.2 Knowledge co-creation

Exploring the issue
Innovation system thinking builds on the idea that innovations do not only originate from science alone, but that these are based on knowledge from multiple sources (Hall et al. 2003; Kristjanson et al. 2009; Sumberg 2005; Leeuwis and Aarts 2011; Hawkins et al. 2009; Leeuwis 2013). Knowledge then is co-produced by researchers and other stakeholders (Schut et al. 2011; Turnhout et al. 2013). Innovation platforms offer great opportunities for knowledge co-creation, which can be supported by researchers.

Roles of research(ers)
Local knowledge is an important contributor to innovations (Tenywa et al. 2011; Neef and Neubert 2011). However, such knowledge is often implicit or tacit, which makes it challenging to elicit and articulate. Moreover, in certain contexts marginalized stakeholders may not value their own local knowledge compared to other types of knowledge, e.g. knowledge of government officials and researchers. This can make it difficult for such actors to share their knowledge with other platform members (Cullen et al. 2013a). Researchers can support this process by using and developing participatory methods to elicit and value local knowledge (Neef and Neubert 201). In situations where the value of local knowledge is not evident to all stakeholders, researchers – as well as other stakeholders in the Innovation platforms – can also explicitly address the importance of knowledge co-creation with other stakeholders (Kristjanson et al. 2009).

Social learning is an important aspect of knowledge co-creation. Social learning can be defined as "collective learning whereby different stakeholders generate new knowledge, skills, confidence, resources, insight and perspectives on which action can be based" (Leeuwis 2000 p:936). This is key in Innovation platform processes as it helps stakeholders to understand each other's perspectives, which is necessary to come to joint solutions and agreements. Social learning can occur within as well as between Innovation platforms, for example, between different Action Areas in Humidtropics.
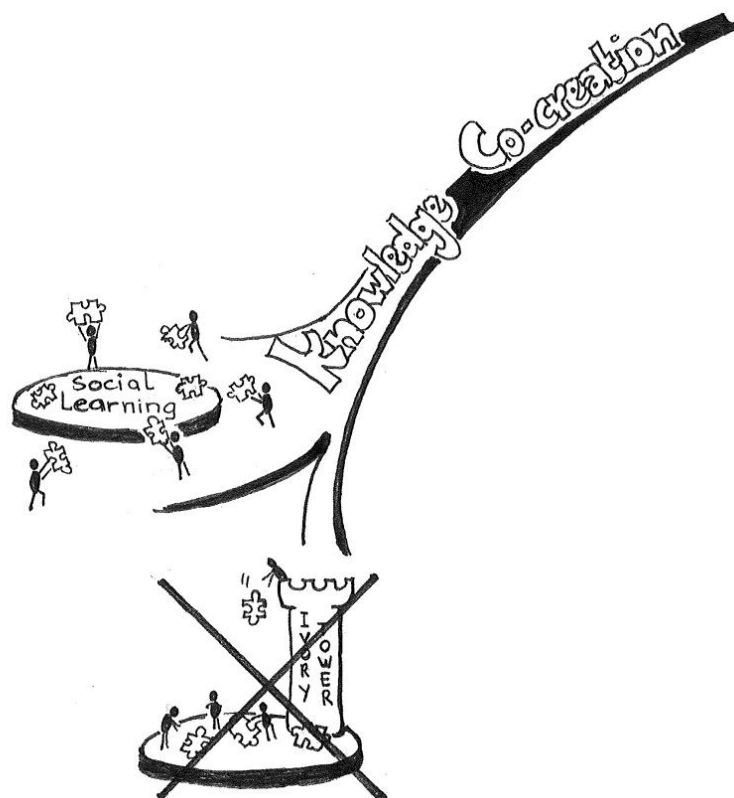
Researchers can contribute to social learning by sharing information and (preliminary) research results in the platform (Victor et al 2013; Makini et al. 2013; Adekunle and Fatunbi 2012; Turnhout et al. 2011; Tenywa et al. 2011). Research results do not need to be final in order to stimulate change; the research process itself as well as preliminary and intermediate results, can be very effective in supporting innovation processes. Timing of information sharing is however crucial, e.g. one can offer information or wait until it is requested (Milgroom et al. 2011). The tools of communication in which research results are translated are also important, because stakeholders should easily understand them. As such, different stakeholders can require different tools (Victor et al. 2013 Schut et al. 2013a; Neef and Neubert et al. 2011).

In addition, failures are important sources for learning (Kristjanson et al. 2009; CGIAR Science Council 2009). In order to learn from failures, reflexivity is required. Researchers may need to play a leading role in supporting (self-) reflection among platform members, particularly in contexts where critical analysis is not the norm. Moments of reflection should therefore be built in R4D process from the beginning as an essential part of the learning cycle (Varma et al. 2009; see also 3.11 Monitoring and Evaluation). Similarly, it is important that research organisations offer space and time to researchers for institutional learning and reflection (Hall et al. 2003).

Summarizing key questions
1. Is local knowledge recognized within the platform as an important contributor to innovations?
2. What participatory methods are used to elicit local knowledge?
3. How does the platform support and enhance social learning among stakeholders?
4. How are failures dealt with within the platform?
5. How is reflection stimulated within the platform?

More (hands-on) information on participatory methods to enhance learning
– Multi-stakeholder Resource Portal. Participatory Learning and Action (PLA) (WUR CDI)
– 'Participatory Learning and Action. A trainer's guide' (Pretty et al. 1995)
– 'Learning alliances: an approach for building multi-stakeholder innovation systems' (Lundy et al. 2005)

3.3   Power and conflict

3.3.1   Power asymmetries

Exploring the issue
Power-relations exist, and can play a role, in every
phase of the platform process; from stakeholder
selection, to setting the agenda, identifying relevant
research questions, and facilitating dynamics
between platform members. The extent to which
these relations are visible and (negatively) influence
or even obstruct the process may vary. To ensure
effectiveness of the platform, it is important to
recognise these power dynamics and their effects
(Cullen et al. 2013b).

Power relations between stakeholders in Innovation
platforms are context-specific and may not always be
visible. Consequently, they can easily be overlooked
or generalized (Steins and Edwards 1999). If they
are not dealt with explicitly, there is a risk of
reinforcing power structures through Innovation
platforms, e.g. hierarchical top-down government
structures (Cullen et al. 2013a). Platform members
can exercise power in various ways, from imposing ideas and controlling decisions to more subtle forms
of resistance including passive participation and withdrawal from the process (Cullen et al. 2013a).
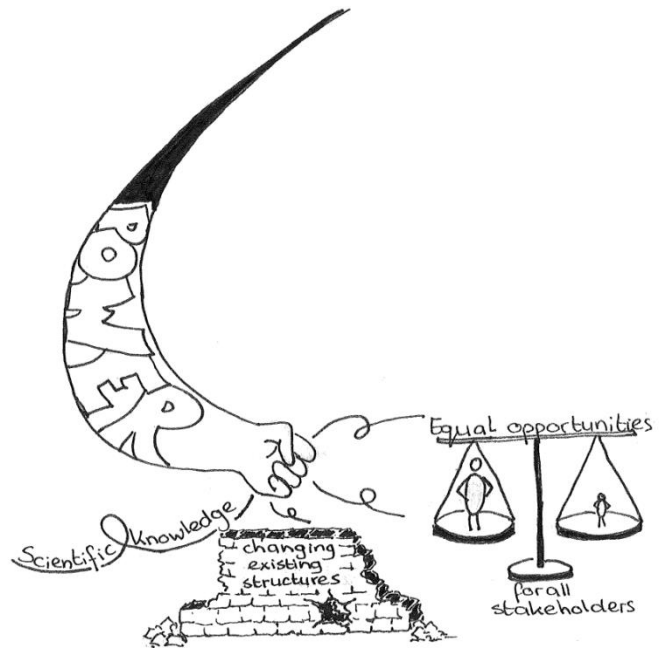
System innovations often require a change in power relations, through the re-structuring of social relations
between stakeholders and associated institutions. It is rather unlikely that changes in power relations
occur without conflict (Long 2001). As such, conflicts can be good indicators to recognize - at first sight
invisible - power issues and subsequently address them (see also 3.3.2 Conflicts and negotiations).

Gender relations are often characterised by strong power dynamics and therefore should receive explicit
attention in innovation processes. For example, system innovations in natural resource management can
include changes in access to resources. Such changes most likely requires re-organisation of power over
resources, which often involve changing existing gender dynamics (e.g. Meinzen-Dick et al. 2011).

Roles of research(ers)
It requires continuous and explicit attention to look beyond 'obvious' power structures. Researchers can
help to recognize and address power issues in Innovation platforms, for example by supporting platform
members in expressing their views and ideas through the use of creative participatory methods (Steins
and Edwards 1999; Cullen et al. 2013a).

At the same time, researchers are also part of power structures. For example, scientific knowledge is
often associated with status, authority and legitimacy (Turnhout et al. 2013: Klerkx et al. 2009). Yet,
power of scientific experts is rarely recognized and subsequently can easily be reinforced if not dealt with
explicitly (Kristjanson et al. 2009). R4D researchers cannot "realistically claim to address poverty without
addressing the issue of the relative power of impoverished stakeholders" (Hawkins et al. 2009: p.20).
Ideally stakeholders should be seen as equal partners in the platform process, but this has far-reaching
implications for the way research is designed and conducted, it raises questions like: Who has control

over the process? Who decides what roles research fulfils? Who decides what are relevant research questions? Who decides who are relevant stakeholders? (Neef and Neubert et al. 2011; Schut et al. 2013a). Researchers' attitudes are critical and for such a participatory approach to succeed changes in mind-set are often required; knowledge co-creation should replace 'ivory towerism' (Makini et al. 2013; see 3.2.2 Knowledge co-creation).

Finally, system innovations can imply a re-structuring of the way research is currently organised and conducted. For example, existing relationships between and within (research) organisations can be strongly bureaucratic and top-down, but might need to become more flexible and bottom-up in order to support successful innovation processes (Sumberg 2005). Such substantial changes bring their own power dynamics between and within (research) organisations and take considerable time.

Summarizing key questions

1. Are existing power structures within the platform explicitly addressed and dealt with?
2. Are gender dynamics in the platform explicitly addressed and dealt with?
3. Is power of scientific experts sufficiently recognized and explicitly dealt with?
4. Are partnerships between (research) organisations sufficiently flexible and bottom-up to successfully support innovation processes?
5. If existing power dynamics in the way research is currently done hamper successful innovations, to what extent can research be re-structured?


More (hands-on) information to assess power structures
– [Knowledge co-creation portal. Multi-stakeholder processes. Tools- Power](#) (WUR)
– [Power cube. Understanding power for social change](#) (IDS)

3.3.2   Conflicts, negotiations and trust

Exploring the issue
Innovation platforms are likely to be arenas of struggle because they bring people together with different interests with the aim of finding joint solutions (Leeuwis 2000). Moreover, struggle is needed for meaningful change to happen, i.e. it can be seen as a characteristic of innovation processes (Klerkx and Nettle 2013). In addition, Innovation platforms often focus on niche experimentation, which also requires struggle – and most likely conflict – with existing regimes (Leeuwis and Aarts 2011; Leeuwis 2013). Innovation platforms are therefore unlikely to be conflict-free. It is thus not so much a question *if*, but *when* conflicts will happen. Yet, conflicts are easily overlooked or denied in projects (Leeuwis 2000).

Conflicts can happen in any phase of Innovation platforms, including for example disagreements about joint problem identification and collective solutions. They are rooted in variation of stakeholders' interests, fears, visions, uncertainties, relationships, etc. For example, stakeholders with vested interests can be resistant to change (Leeuwis and Aarts 2011; Klerkx and Nettle 2013). Moreover, conflicts of interest are not always visible, but often hidden in the process as stakeholders can act
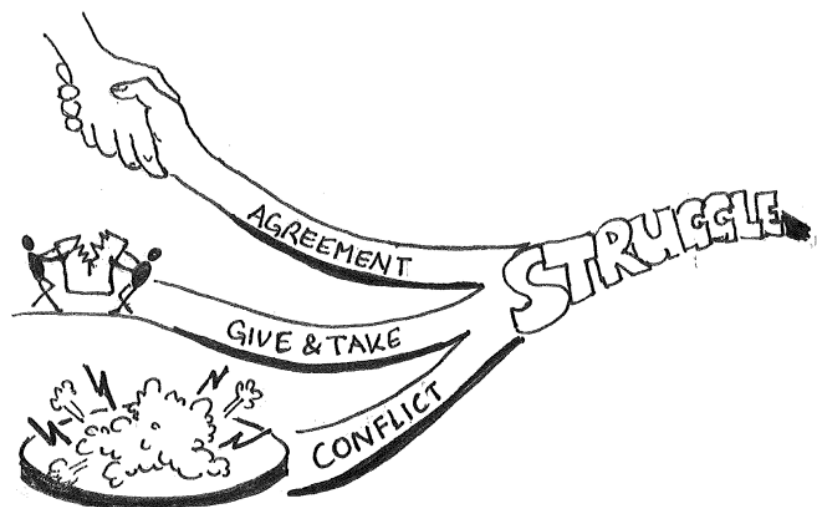
strategically (Leeuwis 2000). There are three broad types of frictions (Leeuwis 2000: p946):

1) difficulties in maintaining an agreement or compromise after it has been secured,
2) problems in securing an agreement,
3) failure to tackle the most significant problems in the first place.

Hence, it is important to pay sufficient time and attention to appropriate problem identification in an Innovation platform as it can cause – or prevent - considerable conflicts in a later stage. Once conflicts occur, negotiations can be helpful to settle them. Platform meetings are not necessarily the best place to do this, because they are an open space with many stakeholders. It can then be more suitable to resolve conflicts outside of meetings, with specific leaders involved (Leeuwis 2000). Moreover, facilitation of negotiations is no easy task as it requires a thorough understanding of social interactions and learning processes (Leeuwis 2000).

In fact, innovation processes are mainly *negotiation* processes, because stakeholders with different interests need to come to some level of coherence in their views and to agreement on activities in order to solve a common problem (Leeuwis and Aarts 2011; Leeuwis 2004, Klerkx and Nettle 2013). To have meaningful negotiations in Innovation platforms, three conditions need to be fulfilled (Leeuwis 2000; 2004):

a) there should be mutual interdependence, i.e. stakeholders should realize they need each other to solve the problem
b) they should be able to communicate, e.g. during as well as outside Innovation platform meetings, and
c) there should be institutional space to use negotiation results, e.g. government and policy makers should be willing and able to integrate suggested solutions.

Roles of research(ers)

If stakeholders do not realize their interdependency (point a) or there is no institutional space (points b and c), researchers can support this process by capacity building or advocacy. For example, it might be necessary to first work on advocacy, lobbying and capacity building with stakeholders and partners to provide clarity and a common understanding on innovation processes and Innovation platforms, before actually bringing stakeholders together. At the same time, researchers' roles in negotiations are delicate, because researchers can offer information on the topic of debate (Milgroom et al. 2011). On the one hand this can help stakeholders in weighing their arguments, but at the same time it can also affect researchers' credibility and loyalty as information is never neutral, but value-laden. For example, platform participants can consider 'scientific information' as representative of other stakeholders' perspectives and interests, e.g. the government or farmer organisations (Milgroom et al. 2011). Research findings can also be perceived as threatening by stakeholders with opposing views (Milgroom et al. 2011). In such situations it is challenging for researchers to maintain credibility within the Innovation platform. It is then important to have (built) a certain level of trust among various stakeholders.

In situations where a lot of conflicting interests exist, research findings can easily become contested (Schut et al. 2013a). It is then helpful for researchers to have a trusted relationship with other stakeholders and organisations. However, trust needs to be built, which takes time (Kristjanson et al. 2009). Joint-fact finding through research is one way of building confidence (Leeuwis 2004). In addition, the type, frequency and quality of interaction between researchers and stakeholders can increase trust (Neef and Neubert et al. 2011). Active and frequent presence of researchers in the Innovation platform is therefore important (Milgroom et al. 2011). Trust building also requires an open attitude of researchers, e.g. showing a willingness to learn, to critically reflect, and to be non-judgmental.

1. Are visible as well as invisible conflicts recognized and effectively dealt with within the platform?
2. Is sufficient time and attention paid to appropriate problem identification in the first place?
3. Do stakeholders recognize their mutual interdependency to solve a problem?
4. Is there sufficient institutional space and support, e.g. among the government, to use platform results?
5. How and by whom are research results used in negotiation processes in the platform?
6. Is there sufficient time and space for researchers to build a trusted relationship with other stakeholders?

More (hands-on) information on negotiations and conflict
– [Multi-Stakeholder Processes for Governance and Sustainability—Beyond Deadlock and Conflict](#) (Hemmati 2002)
– [Getting to Yes: Negotiating Agreement Without Giving in](#) (Fisher and Ury 1981)
– [Knowledge co-creation portal. Multi-stakeholder processes. Tools - Conflict styles](#) (WUR)
– 'Breaking the impasse: Consensual Approaches to Resolving Public Disputes' (Susskind and Cruikshank 1987)

3.4 Resources, incentives and timeframe

3.4.1 Incentives and motivation

Exploring the issue

It can be challenging to actively engage stakeholders in the Innovation platform as well as to keep them actively involved over time (Nederlof et al. 2011). Benefits of platform participation can be increased food production – e.g. through improved production methods -, profit making or access to services (Makini et al. 2013). However, incentives for participation can be rather unclear to stakeholders (Misiko et al. 2013). Based on former project experiences, stakeholders can expect to receive material inputs from a project,

whereas this is not a starting point for innovation processes (Tenywa et al. 2011; Triomphe et al. 2012; Filipe 2009). Material inputs can motivate stakeholders externally, but can also provoke opportunistic behaviour and dependency (Triomphe et al. 2012). Instead, internally motivated stakeholders are more likely to make meaningful contributions to the innovation process (Leeuwis 2004). This also depends on the time frame over which the platforms operate as often it takes time for the benefits of the platform to become clear to the stakeholders. For example, people may be motivated by material inputs initially but become internally motivated over time.
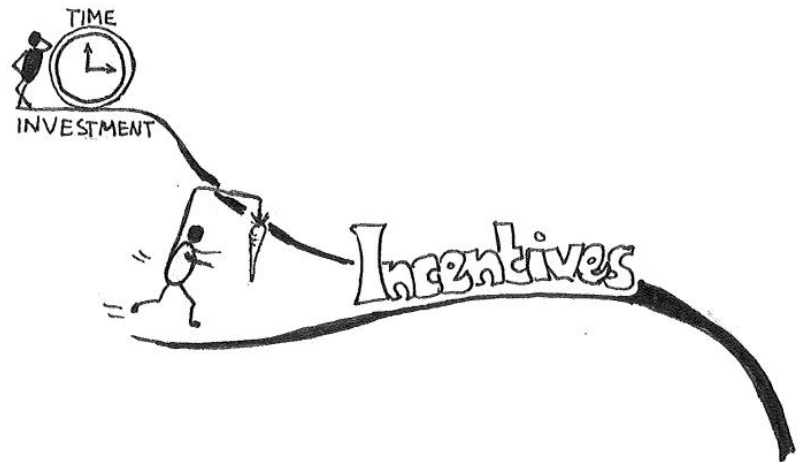
The nature and strength of incentives partly depends on the focus of the platform. Those platforms centred around value chain development have inherent financial incentives; farmers stand to profit from value chain development in the short term as do other actors in the value chain. However, private sector actors are challenging when it comes to sustained engagement as they are often the first to drop out. For

platforms based around natural resource management issues, the incentives may be less immediate and less focused. Innovations emerging from such platforms can benefit communities but will not necessarily immediately put money in the pockets of farmers. In these cases, innovation may involve developing incentive mechanisms such as grants and tax breaks to maintain interest in the platform process. At the same time, incentives for example for NRM can include 'quick win' entry points –e.g. introducing fodder - which provide an income for farmers in addition to meeting the NRM objective.

Roles of research(ers)
It is important to understand stakeholders' expected returns from the beginning and take away unrealistic expectations (Klerkx and Nettle 2013). Researchers can help to provide insight into stakeholders' expectations (see also 3.1.2 Common objective), clarify underlying principles of Innovation platforms and reveal possible benefits for stakeholders.

Stakeholder interest in platform participation often starts with the willingness to collectively address a problem (Schut et al. 2013a) and a recognition that the given problem is too complex to be solved by one stakeholder alone (Leeuwis 2000). This recognition includes the researchers' understanding of what the various stakeholders' can contribute to the innovation process (and vice versa). In order to gain stakeholders' interest in research, it is important that stakeholders can make a meaningful contribution to the research process (Adekunle and Fatunbi 2012; Neef and Neubert et al. 2011). Stakeholders' contributions to research not only increase chances of successful innovation, but can also increase relevance and legitimacy of research (see 3.2.2 Knowledge co-creation).

Finally, time-investment of stakeholders requires explicit attention, because it must be worthwhile from their perspective, for example, to come to meetings, participate in trainings, and answer survey questions (Steins and Edwards 1999). If stakeholders are expected to invest their time without seeing (direct) benefits, their commitment is likely to be low. Though time-investment is important to maintain stakeholders' commitment, researchers often underestimate this point (Neef and Neubert et al. 2011). It is therefore important that researchers clarify the amount of time stakeholders are expected to invest. It is also important to include stakeholders' long-term as well as short-term interests in platform activities, because reaching short-term objectives can keep participants motivated and engaged in the innovation process (Klerkx and Nettle 2013).

Summarizing key questions
1. What are incentives for participation in the platform?
2. What incentives are stakeholders expecting?
3. Are stakeholders internally motivated to join the platform?
4. Are stakeholders given the opportunity to make a meaningful contribution to research?
5. Is the expected time-investment of stakeholders sufficiently clarified?

3.4.2   Changing conditions and flexibility

Exploring the issue
Innovation processes are non-linear, dynamic, diverse, highly context-specific and characterised by coincidence, uncertainty and unpredictability (Sumberg 2005; Hall 2007a; Klerkx et al. 2009; Schut et al. 2011; Tenywa et al. 2011; Nederlof et al. 2011; Adekunle and Fatunbi 2012; Schut et al. 2013a; Boogaard et al. 2013). The process of innovation platforms therefore requires continuous adaptations to changing conditions (e.g. Steins and Edwards 1999; Nederlof and Pyburn 2012; Kilelu et al. 2013; Homann-Kee Tui et al. 2013; Schut et al 2011; Makini et al 2013; Van Rooyen et al. 2013; Schut et al. 2013a). For example changes can occur in:

- priorities of stakeholders
- the focus and objective of the platform
- membership of the platform; in terms of an active core group to which members are added and from which members leave, according to the topics at hand
- roles and responsibilities of platform members
- platform activities
- research strategy and research questions

Such dynamism is to be welcomed and such changes are often a sign of a healthy and functional platform. In contrast, resistance to change and adherence to established structures can often stifle innovation.

Role of research(ers)
The above-mentioned changes can have far reaching consequences for research contributions to Innovation platforms. To adequately respond to such changes, it is important to have an open and flexible research strategy from the beginning (Neef and Neubert et al. 2011). For example it can happen that the priority of the platform changes and different scientific expertise is needed. In order to maintain research relevance and legitimacy, Adekunle and Fatunbi (2012:p986) then suggest that "whenever this occurs, the researcher whose contributions are not of paramount priority should be comfortably step low and allow other researchers with the required expertise drive the contribution from researchers".
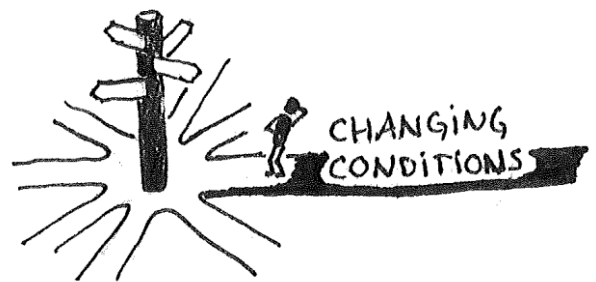
Innovation processes are rather unpredictable and as such only partially controllable and steerable (Klerkx et al. 2010; Schut et al. 2013a). Researchers – as well as other stakeholders and program partners – in Innovation platforms therefore need to be flexible, e.g. through adaptive management (Klerkx et al. 2010; Boogaard et al. *in press*). Adaptive management can involve substantial negotiations with donors and project partners to agree on a rather open project and research planning, for example to create space for unexpected activities. Moreover, innovation processes occur at a rather uneven and unpredictable pace (Klerk et al. 2010; Lema and Schut 2013). Timing, for example to promptly respond to opportunities when they arise, is therefore a crucial factor that influences the contribution of research to innovation processes (Schut et al. 2013a; Millgroom et al. 2011). This requires a certain mandate and freedom for researchers in the field to take decisions rather quickly.

Summarizing key questions
1. Is the research strategy sufficiently open and flexible to respond to changing conditions?
2. Do donors and other program partners agree on a rather open project planning?
3. Do researchers in the platform have sufficient mandate to promptly respond to changing conditions?

*More (hands-on) information on adaptive management:*
- [Multi-stakeholder Processes Resource Portal. Adaptive Management](#) (WUR CDI)

3.4.3   Resources and sustainability

Exploring the issue
Innovation processes are time-consuming, i.e. they can take years if not decades (Turnhout et al. 2013; World Bank 2006). There is a rather long 'pay-off' time, particularly when large networks are involved (Klerkx and Nettle 2013). As such, Innovation platforms are intensive in terms of financial as well as human

resources (Makini et al. 2013, Varma et al. 2009, Nederlof et al. 2011). Although platform facilitation can be resource intensive, the far reaching changes they can stimulate are often more sustainable and have broader reach than those superficial and localized changes achieved through more direct intervention (Duncan et al. 2013).
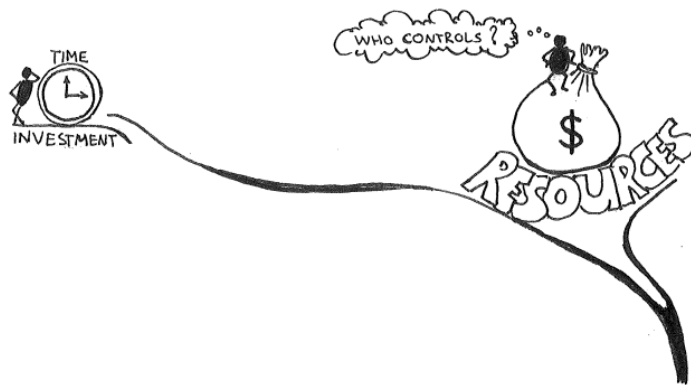
A frequently posed question is whether Innovation platforms are sustainable (e.g. Nederlof et al. 2011, Makini et al 2013). The answer firstly depends on how a sustainable platform is defined. For example, Makini et al. (2013) describe a sustainable platform as: "One that is able to continue to innovate, consolidate its gains, change its focus when necessary, renew its membership to address new issues and thereby continue to generate benefits for its members over time with relative stability." Though it is desirable that stakeholders continue to interact and innovate - in response to changing economic, political and social conditions - this does not necessarily have to be through the platform. Sometimes establishing a platform can establish the linkages and innovation culture among a group of stakeholders such that the formal platform is no longer needed. However, if platform members decide to continue it is important to consider for example where resources come from and who can facilitate the process (Nederlof et al. 2011). It also highlights the importance of participatory processes during the program, as it is more likely that stakeholders continue without project support, when actively engaged from the beginning.

Roles of research(ers)
Researchers can provide clarification towards expectations of donors, partner organisations and stakeholders with regard to the time frame. Moreover, the pace of the platform can differ from that of research (Lema and Schut 2013). Though scientific validity is important for researchers to maintain legitimacy, it also forms a trade-off with the usability of the results in innovation processes (Turnhout et al. 2013; Milgroom et al 2011).

It is also relevant to consider where resources come from and who controls them as this inherently influences power dynamics (Cullen et al. 2013b). In Humidtropics, Innovation platforms are likely to be funded through CGIAR centres. As such, CGIAR centres and implementing partners have a strong position to influence platform activities. This bears a risk of research dominance in Innovation platforms and therefore requires careful and explicit attention of researchers (see 3.1.3 Relevant research questions and 3.3.1 Power Asymmetries). For example, it is important to make explicit what resources Humidtropics provides and what inputs participants are expected to provide - in addition to their time- e.g. transport costs. In addition, a steering body of the platform (e.g. president, secretary, treasurer) can be elected and subsequently involved in the allocation of resources. This does not take away power dynamics, but it broadens decision making beyond research centres and implementing partners.

Summarizing key questions
1. What are expectations of donors, partner organisations and stakeholders with regard to the time frame of innovation processes?
2. Where do resources come from? And who controls them?
3. Should Innovation platforms be sustainable? If so, when is a platform considered sustainable?
4. Are platforms expected to continue operating after the program? If so, in what format and where do resources come from?

3.5   Monitoring and Evaluation

Exploring the issue

Though ideas on Innovation platforms are firmly rooted in theories on innovation systems, their validity and contributions to effective research for development and achieving development outcomes still needs to be demonstrated. It is assumed that Innovation platforms can lead to diverse changes, for example improved knowledge, attitudes, practices, skills and innovation capacity of stakeholders, increased coordination, complementary and collective action, and improved livelihoods (Nederlof et al. 2011; Neef and Neubert et al. 2011; Lundy et al 2013). Several experiences from earlier projects have shown that Innovation platform can support innovation (e.g. Nederlof et al. 2011; Swaans et al. 2013a), but there is limited insight in the process behind this.
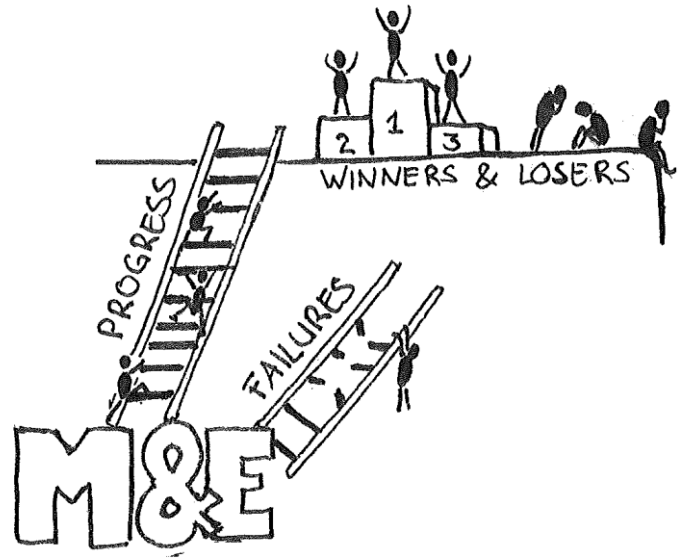
Innovation processes are characterized by self-organization (Hall 2007a; Klerkx et al. 2010). In this case, self-organization "does not mean that change happens automatically and without human intentionality, but rather that it emerges as the unintended outcome of numerous intentional actions which interact and interfere with each other in complex ways" (Leeuwis and Aarts 2011:p26). This means that outcomes of Innovation platforms can only be partially planned and remain largely unintended, which make it challenging to measure them (Leeuwis 2013). Moreover, changes can be subtle with intangible and indirect consequences, which makes it difficult to assess impact of Innovation platforms and innovation brokers (Milgroom et al 2011; Nederlof et al. 2011; Klerkx et al. 2009; Cullen et al. 2013a). Furthermore, innovation processes are characterised by an interplay of many factors, which makes it difficult to attribute changes to a specific cause (Duncan et al. 2013). These challenges however should not stop us from attempting to capture their effectiveness. Instead, research can provide insight into the effectiveness of Innovation platforms as well as the platform processes.

Roles of research(ers)

The above mentioned challenges imply that conventional indicators and logical frameworks are too narrow. Various additional methods are available for example outcome mapping, most significant change, social network analysis, and participatory impact pathways (Lundy et al. 2013). Moreover, a few starts have been made to develop additional M&E methods and indicators for Innovation platforms in a value chain context (e.g. Swaans et al. 2013b; Cadilhon 2013). Within Humidtropics - where we are interested in system innovations and institutional change - it is of particular importance to develop additional and/or new (quantitative) indicators that capture system innovations, institutional change and innovation capacity. Indicators for such changes can be for example, agreement on joint future visions, a variety of socio-technical experiments, shifting discourse in policy networks, reduced constraints for technology uptake, institutionalization of new methods and processes in innovation systems, growing and extending coalitions for change (beyond platforms), and autonomously continuing innovation networks. It is also important to conduct a diagnostic study of the institutional context at the beginning in order to have a baseline to which changes can be assessed in later stages of the project (Hall et al. 2003; Nederlof et al. 2011).

In addition, a learning framework is needed that recognizes the complexity and intangibility of innovation processes (Hall at al. 2003). An important aspect of learning is the need for reflection (see 3.2.2 Knowledge co-creation), which also includes recognizing failures and learning from them (Varma et al. 2009; CGIAR Science Council 2009; Kristjanson et al. 2009; Makini et al. 2013). Participatory M&E is favourable because it offers stakeholders the opportunity to learn from each other and to provide their view on the process (Hall et al. 2003; Klerkx et al. 2012). It is also helpful to reflect on platform activities and create feedback loops (see e.g. Reflexive Monitoring in Action, van Mierlo et al. 2010a and 2010b). Process documentation can provide valuable insights in innovation processes, but it can also be quite time-consuming (Varma et al. 2009). It is then again relevant to consider what roles and tasks researchers can – or should –fulfil and what contributions other stakeholders can make to monitoring and evaluating the platform. A learning framework should also pay attention to trade-offs, i.e. recognizing positive as well as negative outcomes and winners as well as losers (Leeuwis 2013).

Summarizing key questions

1. How is effectiveness of Innovation platforms measured?
2. What indicators and methods are available to measure system innovations, institutional change, and innovation capacity? What new indicators should be developed?
3. Is the institutional context included in baseline studies?
4. Do the selected M&E method(s) allow for capturing unintended outcomes?
5. Is a learning framework included that recognizes the complexity and intangibility of innovation processes?
6. Is the M&E process participatory? I.e. are stakeholders actively involved in monitoring and evaluating the Innovation platform process?
7. Is there sufficient space and support within the platform and (research) organisations to recognize and learn from failures?

More (hands-on) information on Learning framework and M&E of institutional context
- Handbook for Participatory Action Research, Monitoring and Evaluation (Chevalier and Buckles 2013)
- Participatory Evaluation (Better Evaluation)
- Outcome mapping (Better Evaluation)
- Reflexive Monitoring in Action (Van Mierlo et al. 2010b)
- Knowledge co-creation portal. Multi-stakeholder processes. Tools - Institutional Analysis (WUR)
- Rapid Appraisal of Agricultural Innovation Systems (RAAIS) (Schut et al. *in press*; Schut et al. *in prep)*
- 'Learning alliances: an approach for building multi-stakeholder innovation systems' (Lundy et al. 2005)

4   Concluding remarks

In summary, during the start-up period of the platform it is important to take sufficient time, because this period entails some crucial decisions which will influence the innovation processes in course of time. Particularly in these first phases it is important for researchers to consider what are relevant (natural as well as social) research questions and -maybe even more important - how these questions are identified.

Furthermore, some of the issues addressed in this document require significant changes at wider system level e.g. new kinds of facilitators, organisational mandates, incentive structures and new roles of researchers. Such changes require 'innovation of the innovation system' and do not happen overnight.

With this document, we hope to have been of help by showing - and partially unravelling - the complexity of Innovation platforms by providing an overview of important themes and issues. We would like to encourage readers to reflect on the role(s) of researchers in Innovation platforms –e.g. by using the mind-map (Annex I) and table with reflective questions (Annex II) - , because such reflection is crucial if we want our research to have development impact through Innovation platforms.

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Annex I. Mind-map 'Critical issues for reflection on R4D in innovation platforms'
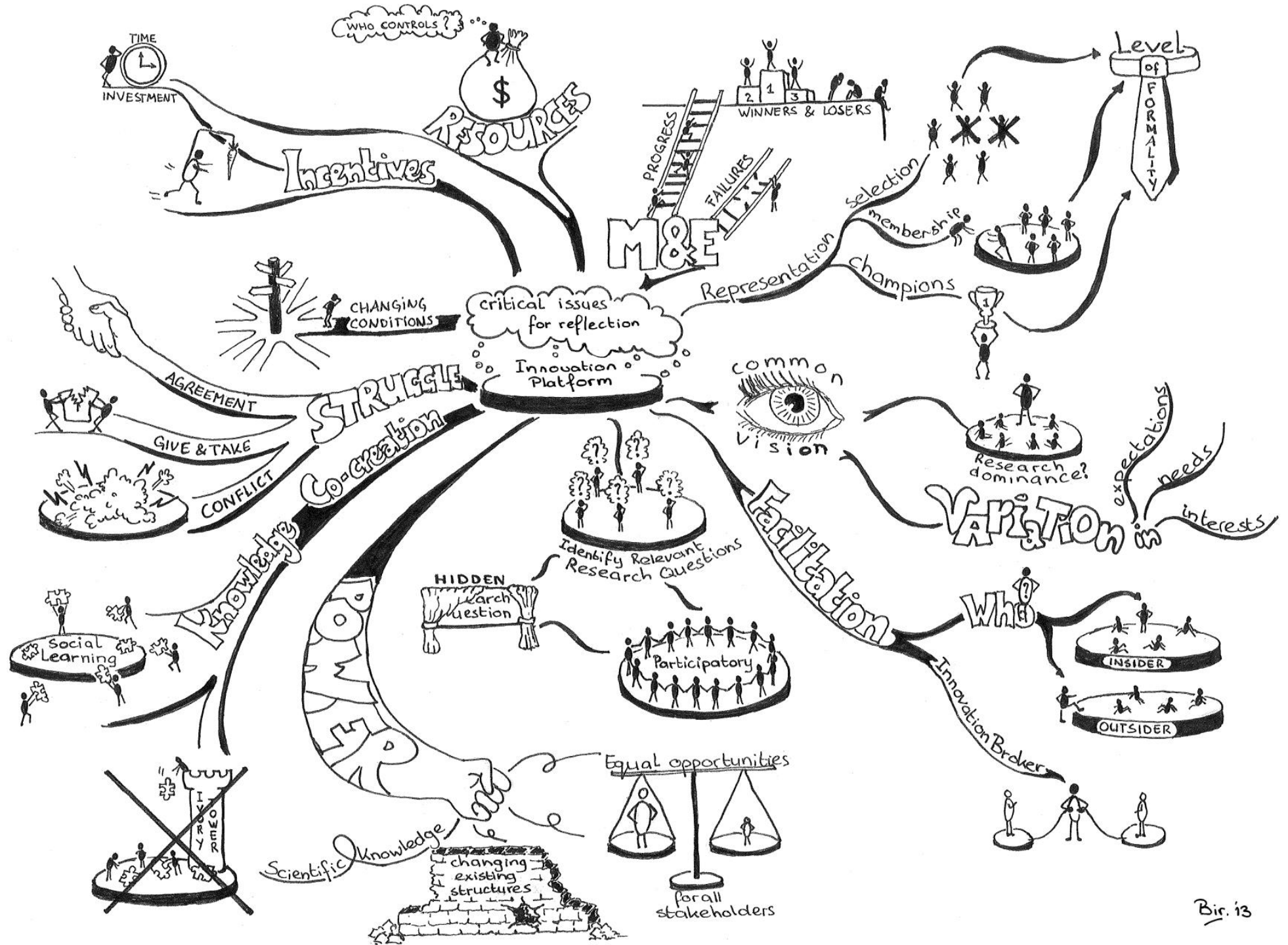
Annex II. Reflective questions on innovation platforms for researchers and project managers

Theme	Issues	Key questions
1. Composition and initiation of the platform	1.1 Representation and composition	✓ Does the platform build on existing networks or will new networks be created? ✓ Who selects representatives? And how? ✓ Is diversity among constituencies, e.g. farmers, taken into account? ✓ How is membership of the platform defined? ✓ When innovation champions are included, on what grounds and with what purpose? ✓ How are various platforms linked?
	1.2 Common objective	✓ How and by whom is the objective of the platform defined? ✓ Have stakeholders' ideas been included in the vision? ✓ Has variation in stakeholders' interests, expectations and needs been taken into account? ✓ What to do when the platform objective differs from the (initial) project vision?
	1.3 Relevant research questions	✓ Are stakeholders sufficiently empowered to articulate their demands? ✓ How and by whom are research questions identified? ✓ Are stakeholders' needs effectively translated into a coherent set of relevant natural and social science questions? ✓ How to deal with demands that lie outside the project and research scope?
2. Coordination and facilitation of the platform	2.1 Process facilitation	✓ Who facilitates the Innovation platform? an 'insider' or 'outsider'? ✓ Can – or should – researchers facilitate the Innovation platform? ✓ If researchers fulfil 'innovation broker' roles, are these sufficiently rewarded and recognized by research organisations?
	2.2 Knowledge co-creation	✓ Is local knowledge recognized within the platform as important contributor to innovations? ✓ What participatory methods are used to elicit local knowledge? ✓ How does the platform support and enhance social learning among stakeholders? ✓ How are failures dealt with within the platform? ✓ How is reflection stimulated within the platform?
3. Power and conflict in the platform	3.1 Power asymmetries	✓ Are existing power structures within the platform explicitly addressed and dealt with? ✓ Are gender dynamics in the platform explicitly addressed and dealt with? ✓ Is power of scientific experts sufficiently recognized and explicitly dealt with? ✓ Are partnerships between (research) organisations sufficiently flexible and bottom-up to successfully support innovation processes? ✓ If existing power dynamics in the way research is currently done hamper successful innovations, to what extent can research be re-structured?

Theme	Critical issues	Key questions
3. Power and conflict in the platform (Continued)	3.2 Conflicts negotiations and trust	✓ Are visible as well as invisible conflicts recognized and effectively dealt with within the platform? ✓ Is sufficient time and attention paid to appropriate problem identification in the first place? ✓ Do stakeholders recognize their mutual interdependency to solve a problem? ✓ Is there sufficient institutional space and support, e.g. among the government, to use platform results? ✓ How and by whom are research results used in negotiation processes in the platform? ✓ Is there sufficient time and space for researchers to build a trusted relationship with other stakeholders?
4. Resources, incentives and timeframe	4.1 Incentives and motivation	✓ What are incentives for participation in the platform? ✓ What incentives are stakeholders expecting? ✓ Are stakeholders internally motivated to join the platform? ✓ Are stakeholders given the opportunity to make a meaningful contribution to research? ✓ Is the expected time-investment of stakeholders sufficiently clarified?
	4.2 Changing conditions and flexibility	✓ Is the research strategy sufficiently open and flexible to respond to changing conditions? ✓ Do donors and other program partners agree on a rather open project planning? ✓ Do researchers in the platform have sufficient mandate to promptly respond to changing conditions?
	4.3 Resources and sustainability	✓ What are expectations of donors, partner organisations and stakeholders with regard to the time frame of innovation processes? ✓ Where do resources come from? And who controls them? ✓ Should Innovation platforms be sustainable? If so, when is a platform considered sustainable? ✓ Are platforms expected to continue operating after the program? If so, in what format and where do resources come from?
5. Monitoring and evaluation	5.1 Monitoring and evaluation	✓ How is effectiveness of Innovation platforms measured? ✓ What indicators and methods are available to measure system innovations, institutional change, and innovation capacity? What new indicators should be developed? ✓ Is the institutional context included in baseline studies? ✓ Do the selected M&E method(s) allow for capturing unintended outcomes? ✓ Is a learning framework included that recognizes the complexity and intangibility of innovation processes? ✓ Is the M&E process participatory? I.e. are stakeholders actively involved in monitoring and evaluating the Innovation platform process? ✓ Is there sufficient space and support within the platform and (research) organisations to recognize and learn from failures?