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Evaluating Individual Approaches to Capacity Development: A Literature Review

Santiago Ripoll Lorenzo

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Evaluating Individual Approaches to Capacity Development: A Literature Review

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Contents

Abbreviations and Acronyms

ACBF	African Capacity Building Foundation
ACCFP	African Climate Change Fellowship Programme
AFP	Rothamsted International African Fellows Programme
ALINe	Agricultural Learning and Impacts Network
ARD	Agriculture Research and Development
AWARD	African Women in Agricultural Research and Development
CD	Capacity Development
CGIAR	Consultative Group on International Agricultural Research
DFID	Department for International Development UK
EU	European Union
FARA	Forum for Agricultural Research in Africa
M&E	Monitoring and Evaluation
MSC	Most Significant Change
OECD	Organisation for Economic Cooperation and Development
RUFORUM	Regional Universities Forum for Capacity Building in Agriculture
SAFE	Sasakawa Africa Association for Extension Education
SCARDA	Strengthening Capacity for Agricultural Research and Development in Africa
UNDP	United Nations Development Programme
USA	United States of America
YPARD	Young Professionals 'Platform on Agricultural Research for Development'

1 Introduction

This review was commissioned by the Agricultural Learning and Impacts Network (ALINe) at the Institute of Development Studies to contribute towards a framework to evaluate the Rothamsted International African Fellows Programme (AFP).

The AFP was a fellowship programme established in 2004 with the objective of strengthening Africa's capacity in agricultural research to address problems caused by a lack of scientific capability. The fellowships provided mid-career African scientists with the opportunity to spend a period of four to 12 months working at a centre of research excellence in Europe, to address an agricultural research problem relevant to Africa.

The AFP finished in December 2010, having supported 44 scientists from 16 different countries in Sub-Saharan Africa. In order to assess fellows' achievements and the impact of the fellowship scheme, the AFP has been working with ALINe to design an evaluation of early results. The primary objective of this literature review is to inform this design.

The purpose of this literature review is to give an overview of the major literature on individual approaches to capacity development, not only within agriculture, but also in other areas such as health or economics. It will outline the methods used by different initiatives (mostly research fellowships) to assess the impact of their activities, on fellows, on their organisations, and on society more broadly.

This review frames individual approaches to capacity development such as fellowship and other tertiary education schemes within the capacity development literature. It reviews existing evaluation tools used to assess fellowships by different donors and research organisations and explores the lessons that can be learnt from the agricultural research and development literature to assess the impact of capacity building schemes in research.

In Section 2, I summarise the current debates in capacity development and assess where individual approaches fall within these debates. I explore the dimensions of capacity development – individual, organisational and societal – and how systemic notions of capacity development force us not to analyse only one dimension in isolation. A systemic approach requires us to understand the strong linkages that exist between the fellow, his or her organisation and broader society.

This section also explores the two dominant models in capacity development schemes, whether they support the development of 'hard' capacities (infrastructure, technology, finance and so on), or 'soft capacities' (capacity to manage knowledge, develop organisational procedures and so on). Similarly in individual approaches to capacity development (CD), there are two tendencies in professional development: one that focuses more on 'hard science', for instance, learning new technologies or procedures (for example, the Borlaug programme or the AFP), and another that puts greater emphasis on 'soft science' skills, including networking capacity, leadership, confidence and resilience (a good example is the AWARD fellowships). The section also outlines the importance of tailoring capacity development schemes to the specific context and social dynamics of the organisations involved.

Section 2 also studies the importance of exposing power relationships in capacity development schemes. Donors and northern and southern research organisations have different degrees of voice and decision-making powers in the design, implementation and evaluation of capacity development programmes. Similarly, those affected by the research outputs – e.g. different kinds of small-scale farmers in the case of agriculture research and development (ARD) – and other stakeholders need to participate in these processes. Recent literature in capacity development has highlighted the need to incorporate dialogue into the research cycles to avoid schemes dominated by donor agendas. Openness, devolution and dialogue by donors must be matched by recipient organisations being clear in their purposes and agenda, and having the courage for 'hard talking' when necessary. Lastly, this section shows the importance of building networks and relationships in research in order to create 'knowledge communities'.

Section 3 explores in detail the different elements included in previous evaluations of individual approaches to capacity development – mainly fellowships and other research grants. The review collates key elements not only from ARD fellowships but also from other areas of research. It explains how a programme can be assessed in its initial design, its implementation and effectiveness, and its impact.

Often fellowship evaluations have taken into account how the design meets its ostensible goals, exploring the relevance and coherence of the programme design. They also explore the adequacy of the processes of selection of fellows and their research projects. Similarly they must explore the implications of the location of the fellow – in his or her home country or in an external centre – and the duration of the award. An evaluation must also take into account the participation of relevant stakeholders in the design of the programme and the appraisal of research projects.

When assessing the effectiveness of the programme through its implementation, it is important to note how the two different models explained above – hard science vs. soft science skills – assess their effectiveness. Other variables to consider will include the quality, motivation, time and resources available for the programme managing team. The evaluation will need to gauge a measure of satisfaction (how grantees' and supervisors' expectations were met), a measure of learning and a measure of behaviour change. In 'soft skill' models, these assessments will explore personal development variables as well as evidence of learning new methods and technologies.

As mentioned above, a systemic approach pushes us to look beyond the individual and evaluate as well the impacts on the organisations involved, including the home research centre. Similarly it should explore the consequences on the mobility of the fellow vis-a-vis his or her country of origin, assessing the importance of 'brain drain' and its determining factors. For those initiatives that include mentorship, this review puts forward indicators for assessing the quality of these exchanges. Finally it gives a series of evaluation indicators to assess partnership-building, networking and cost-effectiveness.

Section 3 concludes with a short reflection on impact (a subject more fully explored in Section 4), and a review of research methods for the evaluation of fellowships, spanning from surveys and interviews to participatory approaches.

Section 4 explores the specific challenges that are involved in assessing the impact of fellowships, particularly in an agricultural world dominated by non-linearity and complexity. The complexity of ARD systems requires monitoring and evaluation (M&E) approaches to embrace uncertainty and change, requiring managers to constantly readjust the pathway to the desired outcomes depending on the emerging issues.

Similarly, it is important for a programme to acknowledge that different actors involved in fellowships (directly or indirectly) will have different theories of change. Theories of change workshops will help make these assumptions explicit. Fellowship programmes should make explicit the mechanisms they think exist that link the development of the capacity of a researcher with the ultimate effects on farmers' livelihoods. Such a discussion, (in which final users have a significant voice) on theories of change as a *process* is very useful in promoting reflexivity and learning in individual approaches to capacity development schemes.

Attribution and pressures for accountability can be problematic in complex environments, and this section outlines the arguments for a reflective organisational culture that problematises a 'culture of success' and promotes learning.

Lastly, Section 4 reviews the changes that have occurred both in quantitative agriculture economics and in qualitative participatory methods for impact assessment to adapt to the complexity of ARD. Qualitative approaches can be particularly useful in evaluating the impacts of fellowships. These include impact pathways analysis (very similar to a 'theories of change' exercise), outcome mapping, most significant change, peer ethnographic evaluation, appreciative enquiry, horizontal evaluation and Social Return on Investment.

Finally, the conclusion outlines key lessons learnt in this literature review with regards to the evaluation of individual approaches to capacity development: the importance of process, the focus on learning vis-a-vis accountability and attribution, the importance of multi-methods, the importance of stakeholder participation, the importance of exposing assumptions and power relations, and the realisation that good science is not enough. Although this literature pertains to the M&E requirements of the AFP programme, it can also contribute to other impact evaluations of individual approaches, and their role in broader processes of capacity development. Despite its focus on agriculture, there are many lessons that can be transposed to individual research support programmes in other disciplines, including for instance, health and social sciences, among others.

2 The Role of Individual Approaches in Capacity Development

> We believe that it is critically important to move beyond Capacity Development based on an instrumental and technical understanding of knowledge to encourage debate around deeper meanings of knowledge, learning and change; to better understand the way power relations influence the capacity of individuals and organizations to engage as actors in processes of development and change; and to explore more systemic approaches to learning and change.
>
> (Taylor and Clarke 2007: 3)

2.1 An introduction to capacity development

What do we mean by capacity development? Often the terms 'capacity building', 'strengthening capacity' and 'developing capacity' are used in different situations to mean rather different things. Terminology 'is often vague and inconsistent, and related concepts are obscure and ill-defined' (Taylor and Clarke 2007: 3).

The history of approaches to learning in development can give us an insight as to where these inconsistencies originate. After the Second World War the emphasis was largely on capacity building in the sense of 'technical assistance' and 'technical cooperation'. Technical assistance assumed that developing countries should emulate developed countries and programmes involved foreign experts running their own projects that they expected would yield results similar to those in northern countries. This approach was soon followed by 'technical cooperation', which assumed that developed and developing countries should develop a partnership; programmes put greater emphasis on training and transfer of knowledge, yet were based on national policies (UNDP 2009). These initiatives both assumed that capacity had to be built externally: that a 'purposeful, external intervention' was 'necessary to strengthen capacity over time' (Simister and Smith 2010), while looking out for 'gaps' in individuals' or organisations' skills.

In the late 1980s and early 1990s capacity development gradually emerged, acknowledging that the failure of previous approaches was in part due to the fact that existing capacities were ignored, and there were attempts to 'replace[d] them with knowledge and systems produced elsewhere' (Fukuda-Parr, Lopes et al. 2002: 8). Different donors and organisations began to understand that capacity development is an internal process that involves the main actors taking primary responsibility for change processes and that endogenous capabilities should be strengthened (UNDP 2009; Simister and Smith 2010). Yet this internal/endogenous emphasis does not mean that external support is not useful or desirable, but rather that external support should catalyse and facilitate endogenous processes change, building on local 'energies for change that exist in the specific context' (Clarke and Oswald 2010).

Thus a useful definition for capacity could be the OECD's: 'the capability of people, organisations and society as a whole to manage their affairs successfully' and capacity development would be a 'process whereby people, organisations and society as a whole, unleash, strengthen, create, adapt and maintain capacity over time' (OECD 2006: 12).

2.2 Dimensions of capacity development: the role of individual approaches

The definition of capacity above illustrates that capacity development occurs on at least three levels: with the individual, with the organisation and with broader society.[1] Different development organisations place greater emphasis on different levels.

Individual approaches to capacity are longstanding and, in the main, view capacity as a 'human resource issue to do with skill development and training' at the individual level. These interventions are often 'combined with external interventions in the form of technical assistance and functional improvements' (Simister and Smith 2010: 4-5). Capacity at the individual level includes the 'skills, experience and knowledge that allow each person to perform'. As shown below, these skills can be either 'hard' or 'soft'.

The organisational level is the most widely used as the locus of intervention, yet the majority of the actual 'inputs' involve training at the individual level (Taylor and Clarke 2007).

And finally, the broader society level encompasses both the enabling environment that sets the overall scope for capacity development and the ultimate target of development interventions, i.e. to influence 'good change'.

[1] Other frameworks include the *institutional* level, making the distinction in that 'organisations are physical bodies (e.g. companies, government departments, research institutes) while institutions are the constraints that structure human behaviour, which may be formal (e.g. rules, laws, constitutions) or informal (e.g. markets, behavioural norms, conventions).' Similarly, partnerships and

Few approaches to capacity development explore how the linkages between the organisational level and individual level work, and it is important not to assume that training and personal learning automatically leads to organisational learning. Learning acquired must cater for target organisations' needs and goals. Trainees need to have the resources and incentives to apply what they have learned on the job: learning must lead to changes in behaviour (Brinkerhoff and Apking 2007; World Bank 2008). As will be shown below, not only behaviour must change for beneficial social change, but also attitudes, values, identities, and so on.

Initial approaches saw these three levels as separate entities, yet these three levels influence each other in a fluid way. Access to resources and experiences that can develop individual capacity is largely shaped by organisational and environmental factors, which are in turn influenced by the degree of capacity development within each individual (UNDP 2009). Our approach must therefore be systemic (Clarke and Oswald 2010). Systemic approaches permit development actors to explore the relationships between learning and change across the three levels (individual, organisational, societal) in an integrated way (Taylor and Clarke 2007). This systems approach does not only refer to the fact that we need to consider the relational nature of individuals, organisations and society, but also that social change is complex, and that we cannot keep the simplistically linear assumptions of technical cooperation (Akum 2007: 3). In Morgan's words, capacity is an 'emergent property or an interaction effect. It comes out of the dynamics involving a complex combination of attitudes, resources, strategies and skills, both tangible and intangible. It emerges from the positioning of a system within a particular context.' (Morgan 2006: 7)

What does this systems approach entail in the analysis of individual approaches to capacity development?

Individual approaches to capacity development focus on individual learning as a form of capacity development. This individual acquisition of skills, experience and knowledge can occur formally, through education and training, or informally, for example through doing and observing. These individual approaches assume that:

> Individuals possess knowledge, skills and attitudes which reflect their experience and training. When individuals share their knowledge, skills and attitude with colleagues and these become embedded in group norms and processes, it can be said that they have become part of the groups' capacity. And when the individual and group capacities become widely shared among the organisations' members and incorporated into management systems and culture, they become organisational capacities.
> (ECPDM 2003: 4)

However, do individual approaches to capacity development need to take a systemic approach? Do schemes like fellowships acknowledge and integrate into their programmes the relational nature of individuals, organisations and society or do they leave organisations and society out of the equation?

Individual approaches to capacity development encompasses developing the skills of individuals and, in doing so, contributing to change in organisational procedures. Individuals may take their acquired skills when they leave the organisation, yet if the scheme was successful, new systems and procedures have become integral to the operations of the organisations. Thus individual approaches can only be successful if new approaches (acquired or developed by individuals) are institutionalised (Kristjanson, Lilja et al. 2008: 10).

Despite focusing on the individual learning, these approaches are more likely to be successful if they are framed within a systems approach (Clarke and Oswald 2010).

Unfortunately, some individual training programmes that ignored the organisational-level capacities of partner organisations can have adverse effects: although selected individuals enhanced their skills, some projects placed harsh 'demands on already weak and overstretched organisations' (DFID 2006: 3). DFID's evaluation of the Renewable Natural Resources Research Strategy showed that putting all resources into training researchers to certain levels improves research outputs and networks, yet does not contribute to improving project and resource management systems and the definition of new research strategies (ibid).

The organisational capacity of partners should be a priority as should understanding the circumstances in which individual and organisational interests converge or compete against each other. It is necessary for programmes to show an understanding of the importance of management infrastructure, technologies and strategic and policy capabilities at the organisational level in order to create a lasting impact in research systems.

When monitoring and evaluating individual approaches to capacity development, our analysis cannot therefore separate individual learning from organisational and institutional learning. For example, the Rockefeller Foundation places a great emphasis on institutions in its capacity development programmes, stating that 'building skills systematically across local organisations and among organisations in different countries', catalyses 'an environment of inquiry, entrepreneurship and experimentation' that in turn, 'makes individuals and organisations

more effective' (Lewinger Moock 2004: 3). In fact, organisational learning theory acknowledges that organisations can learn independently of the individuals within them. Changes in rules, procedures, culture or structures within an organisation can lead to organisational learning (Taylor and Oswald 2010: 115).

In short, when conducting a capacity needs assessment for a fellowship, or when designing or evaluating a capacity development programme with a strong individual learning component, we must take into account the importance of exploring the relationships between learning and change across the three levels (individual, organisational, societal) in an integrated way. The programme must test its assumptions on how individual change will lead to positive changes in the organisations concerned and ultimately in society. Similarly, a programme design must show understanding of how social dynamics within organisations shape, constrain and facilitate individual learning and capitalise on this. Therefore, evaluations of fellowships must include assessments of whether organisational learning has been addressed, regardless of whether its efforts remain focused on the individual.

2.3 Hard and soft components in capacity development schemes and the importance of context

The Horton (2011) review for the Evaluating Capacity Development project classified capacities into two types: 'hard' capacities such as infrastructure, technology, finance and human; and 'soft' capacities such as the capacity to manage knowledge or develop organisational procedures (Horton 2011). Investment in 'hard' capacities rarely lead to improvements in organisational performance unless soft capacities such as strategic leadership, programme and process management and networks are nurtured as well (ECPDM 2003).

There is thus a need to integrate a social perspective in capacity development, acknowledging that learning emerges from 'soft' components such as social relationships and interactions. The focus is not only on formal structures and learning processes, but also on informal exchanges and relationships between staff, and the value placed on learning and knowledge within the culture of the organisation (Serrat 2009).

There are two main models for individual approaches to capacity development based on this difference of emphasis between the development of the capacity for 'hard skills of science' and the development of other 'softer' capacities. This difference in approach is not only relevant in ARD programmes, but could also be highlighted in other areas of 'high technological research'. Some fellowships (e.g. Borlaug, and in some aspects the AFP) often focus on learning the use of certain technologies whereas other fellowships influenced by social sciences (e.g. AWARD) also focus on personal development. The difference between hard-soft capacity components is crucial in individual approaches to capacity development. Not only does one need to focus on the organisational capacities (i.e. resources and management) but also on the hard and soft skills acquisition by the individual and the repercussions for his/her organisation and environment. Individual approaches to capacity development such as science research fellowships need to develop not only 'hard' science skills related to scientific research, teaching the use of new technologies and methods, but also develop 'soft' science skills that are equally important (see Section 3). These include the capacity to network and build relationships with others, the strengthening of leadership skills, and the fostering of confidence and resilience, etc. (Ofir, Van Wyk et al. 2008). Capacity is about empowerment and identity – those are the properties that allow a system to adapt and evolve (Morgan 2006).

If energies, social dynamics and other complex human activities are so important, and systems are located within a particular context, capacity development approaches must be tailored and contextualised. Accordingly we must be able to:

> detect the dynamics of specific context and to mobilise and nurture this energy productively through a process of dialogue. This means focusing on change and adaptive management in an approach rooted in endogenous strengths, needs, aspirations and expectations arising from specific contexts.
>
> (Taylor and Clarke 2007: 4)

This acknowledgement prevents us from using 'one size fits all' approaches of good practice and encourages 'best fit' tailored for the context (UNDP 2009).

In conclusion, the success of these individual approaches to capacity development will depend on the ability of those programmes to provide training or research exchange opportunities that are an integral part of a multi-level (systems approach) programme addressing capacity issues, tailored to the goals of the organisation. They should also be tailored for the specific context and social dynamics, and recognise the importance of political, social, economic and cultural factors. These opportunities must build in incentives to apply the new skills, and 'articulate the benefits to personnel development and the linkage of personal performance to team performance and overall organizational efficiency and ability to fulfill its mandate' (UNDP 2009: 6).

2.4 Power and partnership

Capacity development is about power, control and space; it requires people to act together to take control over their own lives, be autonomous and capable of managing their own affairs (Morgan 2006; AWARD 2010).

Power relations shape the choices available to social actors in learning processes when building their understanding and abilities. Approaches to capacity development that aim to be 'neutral' or 'apolitical' have ignored that capacity building is fraught with different value systems, interests, political leverage, and power. Capacity development takes place in an environment like any other in social change, one that is messy and political, where certain knowledges are privileged over others, where the voice of the marginalised is silenced. Thus capacity development initiatives should strive to expose these power differentials and aim to redress them by encouraging real partnership, that brings changes in power relations, equity and voice (Clarke and Oswald 2010).

Within the context of this review we must acknowledge the role of hierarchy and power in the partnerships formed to deliver these programmes. What knowledge is prioritised? What are the power relations that emerge between partners such as donors, northern NGOs, southern NGOs, and southern research centres? Is capacity development being driven by donors?

Often those who hold the funds and those organisations which are the gatekeepers of these funds wield power that can shape a relationship. As will be shown in Section 4, donor pressures may direct capacity building processes away from self-reflection and organisational change – both long-term processes that often deliver intangible results (e.g. work culture, motivation and leadership). Instead they may focus solely on accountability to donors, making sure money is well spent and eliciting 'stories of success'. Yet this perhaps inhibits the critical self-reflection that can generate positive change. Capacity development programmes must engage stakeholders to reflect on these power differentials. Donors should not let accountability drive processes (although it is important), and must provide incentives for learning processes to occur (Ortiz and Taylor 2008; Simister and Smith 2010).

In the case of research support programmes such as fellowship programmes, asymmetry between donors, and northern and southern partners can be a key obstacle to productive research collaboration:

> This asymmetry manifests itself in the form of inequitable access to information, training, funding, conferences, publishing opportunities, and the disproportionate influence of Northern partners in decision-making on the research agenda, project administration and budget management. (...) inequalities often compromise the success of North-South partnerships, even when the partners identify with similar values in terms of equality and mutual respect.
>
> (Bradley 2007: 16)

Yet hierarchical research arrangements may be beneficial in some cases, for example when they favour the southern partner (Jentsch 2004), and when northern agencies promote mutual learning, 'listen and are more open to the wishes and felt needs of organisations in the South' and relationships are based on 'openness and dialogue'. Yet recipients' organisations also need to be 'clearer about their vision and strategic purpose' and 'engage in hard talking, when needed, with Northern development agencies determined to pursue their own agenda' (Taylor and Clarke 2007: 24).

Similarly power dynamics between capacity development providers and stakeholders, particularly users,[2] need to be explored, exposed and discussed. This has to involve not only those organisations reflecting on their capacity, but also those development actors directly or indirectly affected by their work e.g. small scale farmers, consumers, etc. What role do users and stakeholders have in the design of ARD programmes? And what role do they play in shaping the design and research projects of individual approaches to capacity development schemes such as fellowships? It is important to note that precisely the power relations among stakeholders means that some stakeholders have more voice than others, and that marginal voices will be silenced. Capacity development schemes must examine and expose powers that constrain and promote actions, and allow for actors (including capacity development facilitators) to reflect on their own power and agency: capacity development has to be a renegotiation of power relations (Clarke and Oswald 2010).

[2] In this context, capacity development 'providers' denotes the fellowship programme and 'users' denotes the ultimate beneficiaries of innovation promoted by the fellowships – for instance, the small-scale farmers who are meant to adopt technologies based on the research developed by fellows.

In parallel to the promotion of equitable partnerships and consortia, the promotion of networks and relationships is crucial in creating capacity. They depend on the construction and expansion of personal contacts, and rely highly on trust and informality. Yet despite the mounting evidence that networks are a fundamental channel to exchange knowledge and ideas, development programmes do not assign them formal recognition (DFID 2006).

This, is not, however, the case for individual approaches to capacity development such as fellowships. As this literature review shows, capacity development in ARD has long understood the power of professional (and personal) networks – many ARD fellowships include specific activities aimed to strengthen alliances between professionals: exchanges, conferences, workshops, informal events, and so on. This is particularly important in developing countries where formal structures are weak; the strengthening of networks to build a 'knowledge community' seems a good complement (Söderbaum 2001).

3 Key Elements in the Evaluation of Individual Approaches to Development

In the previous section, I located individual approaches within the debates that exist in the literature on capacity development. I highlighted the importance of understanding the individual, organisational and societal dimensions as interlinked in the design and M&E of fellowships and similar capacity development programmes. Similarly I explained how different models emphasise hard or soft skills in science, and how power relations shape the interaction between donors, northern research centres, southern research centres, fellows and other stakeholders.

These elements have given us some clues on what general approach to use in an evaluation of a research fellowship programme: a systemic approach that engages with stakeholders and explores power relations and equality in partnerships; and an approach that acknowledges the relevance of hard science and soft skills.

Yet what are the specific indicators we could use to evaluate a fellowship such as the AFP? What can we learn from other M&E processes carried out by similar donors and research organisations? This section will summarise the key elements included in existing evaluations to assess the design of fellowships, their implementation and effectiveness and will give an insight to the challenges of evaluating the impact in complex environments. (Section 4 will look at the impact more closely, gathering lessons learnt from the ARD literature.) Annex 1 presents full details of the existing evaluations that this review has drawn upon.

Please note that most of these indicators are applicable to all fellowship evaluations (and on occasion they are drawn from other disciplines such as health or economics). Where cases are specific to ARD, this is indicated.

3.1 Individual approaches to capacity development

Individual approaches to capacity development in ARD often consist of award programmes aiming to support career development in research, and aiming to improve the research skills of scientists. Training, networking and knowledge exchange is fostered. Programmes very often include exchanges with other research centres, where grantees travel to a different country to carry out their research. Often these initiatives take the form of research grants or fellowships that can range from short visits of up to three months to longer exchange programmes of up to five years. Specific programmes may concentrate on building additional capacities to grantees beyond the 'hard science' skills, fostering soft skills such as leadership, management, resilience and confidence.

The aim of these programmes is to improve the quality and potential for innovation of science. Broader impact aims may include increasing food security and decreasing poverty. Other programmes have more specific aims such as empowering women scientists, preventing 'brain drain' or creating a common scientific culture among the participating countries.

Evaluations of these individual approaches to capacity development are notably scarce. Yet there is enough literature to enable us to identify the main elements to be taken into consideration when evaluating one of these programmes.

3.2 Programme design

An evaluation of a grant or fellowship programme often requires a reflection on the contribution of the design to its purported goals.

For example, in the case of Borlaug and the Gender and Diversity (G&D) Rockefeller[3] fellowships, fellows and programme managers were asked to assess the contribution of the design of the programme to: (i) developing leadership abilities; (ii) developing scientific and technical abilities; (iii) sustainable results; (iv) women in leadership roles; (v) overcoming social and cultural constraints to women working in science; (vi) benefiting the 'home' institution; (vii) direct application of knowledge (Ofir, Van Wyk *et al*. 2008).

To ensure the programme design is coherent, the following questions must be asked. Was the programme plan well articulated and achievable? Were the activities linked to well-defined results?

[3] This fellowship was soon followed by the African Women in Agricultural Research and Development (AWARD) fellowship programme (funded by BMGF), both managed by the Gender and Diversity Programme of the Consultative Group on International Agricultural Research (CGIAR).

There should be an assessment of the programme components (e.g. training courses, participation in conferences, contacts with other researchers, supervisor and mentor support, etc.). These programme components can be rated and checked if they reinforce each other.

A common way of assessing this is through a survey of fellows, supervisors, mentors and programme managers, asking them to:

(i) rate each component of the project;
(ii) rate the overall coherence of the programme: how it all fits together;
(iii) rate the degree to which the different objectives of the fellowship are achieved.
(iv)

These ratings must be triangulated with qualitative interviews.

Criteria for selection of fellows are of key importance. Enquiries must be made into whether selection has been based on established selection criteria and whether it has a meritocratic and transparent process, which includes asking fellows about fairness and objectivity of recruitment (Rotem, Zinovieff *et al*. 2010).

It is important to reflect on the strictness of this process, since the *prestige* of the scheme and the willingness of host institutions to take in fellows depends on the quality of successful applicants.

In many fellowship schemes, it is the fellow him or herself who chooses the research project to undertake. In some cases, the scheme does not specify subject areas (e.g. Marie Curie); in others, it narrows the possibilities into certain topics (e.g. OECD fellowships). In both cases, the only criteria used for acceptance is the 'scientific excellence' of the project. However, not only does an impact assessment need to consider the *quality* of the project, but it also needs to reflect on what *model of agriculture* that emerging technology will support, and who stands to gain or lose from the innovation. For example, knowledge developed about crops produced industrially or on a large scale could have negative consequences for small-scale farmers; or labour-saving technologies could have consequences for agricultural labourers (Kerr and Kolavalli 1999; Adato and Meinzen-Dick 2002). Agricultural innovation can provoke structural changes (DFID 2006) and thus is inevitably political. So it is important to make these potentially unintended consequences explicit and engage stakeholders (particularly those the schemes aim to help – the rural poor, small-scale farmers, etc.) in both the evaluation and the future programme design.

Similarly a fellowship programme must have a relevant and appropriate placement of fellows in host institutions. Supervisors and fellows will be able to evaluate, respectively, if they have received the right kind of fellow or hosted in the appropriate institution. In most schemes the candidate gets in touch with the potential host institution before applying. This improves compatibilities between the centre and the fellow, however such 'fellowship initiation' implies that prior links play an important role in the process leading to an application for a grant, which in turn reduces slightly the transparency of the process (van de Sande, Ackers *et al*. 2005)

3.2.1 Duration of fellowships

Fellows, managers and supervisors can reflect on the duration of the programmes and how suitable certain lengths of programmes are. Longer-term exchanges (around two years) are favoured over short term (up to six months)[4]. However, more senior scientists tend to prefer shorter periods.

Duration also depends on the primary objectives of the programme. The capacity building objectives of a short two-week training course to build particular skills (e.g. targeted skill development such as learning how to use a particular software) are significantly different to the objectives of a longer programme that aims for a significant and more general transformation of knowledge and behaviour in the fellow. Assessments will need to acknowledge these different objectives and how they relate to the duration of the programme.

Even in longer programmes, some schemes will aim to concentrate all resources into an intensive yet shorter period of time (possibly making the acquisition of technical know-how more effective). Others may prefer to space out a large number of exchanges over a longer period (thus possibly enabling the construction and maintenance of networks). This will depend on the objectives of the scheme. The duration and intensity of the programme must be evaluated against these objectives.

[4] EU Marie Curie fellowships

3.2.2 Location of the fellowship

This is of crucial importance. Is the researcher going to carry out research in his or her research centre, or will he/she undertake research in another (normally more developed) research centre? Schemes such as the International Foundation for Science Fellowships (IFS) give grants for researchers to carry out research in their countries of origin. Other schemes, such as the AFP, give grants for researchers to carry out research in host countries. This difference in approaches arises from different theories of change and different objectives. The IFS programme believes that organisational learning can occur more effectively if the fellow remains at home, whereas programmes like the AFP or the Ford Foundation fellowship, see the home research centre benefiting upon the fellows' return after the programme. These theories of change must be made explicit and debated in the evaluation.

In the existing impact assessments in the available literature, wider questions about relevance of a fellowship programme to broader development processes are never raised. If the overarching goal is reducing poverty and increasing food security, is the promotion of agricultural research through building conventional/mainstream research skills the answer? Is the solution to poverty and hunger a technical one? Are the following assumptions of change unproblematic?

> Increased capacity of scientists ➔emergence of new technology➔adoption of new technology by small-scale farmers➔increase in agricultural productivity➔reduction in poverty.

A reflective exercise on assumptions about change must be undertaken as part of an impact assessment of a fellowship programme. Literature on the impact of agricultural research has extensively explored these assumptions and offers new insights to individual approaches of capacity development within the broader aims of development. This literature will be briefly reviewed in Section 4.

As mentioned above, when evaluating the design of a fellowship programme, the engagement with stakeholders must be assessed. This is relevant for all fields, but especially so in ARD. Since the 2000s an interest in innovation centred on co-development has emerged in ARD, involving multi-stakeholder processes and messy partnerships (Scoones, Thompson et al. 2008). Research organisations in the south (e.g. Regional Universities Forum for Capacity Building in Agriculture or RUFORUM, and the Forum for Agricultural Research in Africa or FARA) also acknowledge the importance of engaging with stakeholders including students, lecturers, researchers, university managers, farmers, policymakers, and coordinators of regional programmes (RUFORUM 2011). Yet, as noted in Section 2, stakeholder engagement exercises must take account of power differentials and must strive to empower the ultimate actors in agricultural development – i.e. small-scale farmers – as the beneficiaries of technology. As FARA eloquently puts it:

> The farmers are the ultimate beneficiaries of products and services generated by FARA. The farming community would like to be placed at the forefront in setting the agenda and articulating investment priorities for agricultural research, extension, education and training. Owing largely to the emphasis on farmer participatory research, farmer involvement in agricultural research priority setting and evaluation of technologies has improved somewhat in the last two decades. However, at a more strategic level, the farming community is not adequately represented in programme review and evaluation process. More critical is the lack of accountability frameworks that empower farmers to review performance of agricultural research, extension and training systems.
>
> (FARA 2011: 6)

Also great care has to be taken not to understand the category 'farmer' as a homogeneous one. A farmers' association does not necessarily represent all farmers: technology will influence different kinds of farmers differently depending on context (small or large scale farmers, those practising rain-fed or irrigation agriculture, those in marginal areas, agricultural labourers, tenants or landowners, etc.). A stakeholder discussion must not ignore the complexities of rural social dynamics and must steer away from box-ticking consultations[5].

[5] See ALINe 2012 Literature Review on 'Farmer Voice'

3.3 Programme effectiveness

3.3.1 Programme implementation

How did the implementation of the programme affect the results? Did all activities take place and were the results achieved? What did and didn't work? What should have been done differently to achieve better results?

Such specific questions – to be answered by fellows, supervisors and programme managers – will depend on the planned activities and the results expected of each individual capacity development scheme. In the case of the AFP scholarships, for example, questions would revolve around:

- the acquisition of skills by individuals in order to pursue their own research project;
- the development of networks.
-

And at an institutional level:

- the development of long-term institutional partnerships.
-

A critical variable is the degree of quality, motivation, time and resources available to the programme managing team. For example, in the case of the G&D Rockefeller/AWARD fellowships, there was added value in the team's high standards and care. Ofir et al. (2008) emphasise 'how important efficient and nurturing management is for capacity building programmes – despite increased management cost and time' (Ofir, Van Wyk et al. 2008: 28).

The evaluation will need to gauge a measure of satisfaction (if and how grantees' and supervisors' expectations were met), a measure of learning (the resulting increase in knowledge or capacity) and a measure of behaviour change (learning that changes the way grantees work or interact) (Rotem, Zinovieff et al. 2010).

3.3.2 Assessing whether expectations are met

To assess the meeting of expectations, both the initial expectations and the actual delivery have to be contrasted. For example, the EU Marie Curie scholarship asks fellows and supervisors to rate factors as 'important' to their field of research within a given list, and then to rate the impact of the fellowship on their career against these same factors. This list includes:

- developing research skills
- available time to research
- international experience
- available financial resources
- good facilities/equipment
- autonomy/independence
- developing transnational research networks
- relationship with supervisor
- relationship with team members
- reputation of supervisor
- reputation of institute
- developing language skills.
-

The three factors fellows most frequently rated as important were international experience, the development of research skills and having available time to do research. When asked about the impact of the fellowships, the same three factors emerged as the most highly rated in importance of impact. This contrast exercise allows us to see if the scheme is 'giving researchers the opportunity to gain experience in areas that they themselves regard as most important for working in their discipline' (van de Sande, Ackers et al. 2005: 12). Note that the Marie Curie programme is an EU-wide programme only and priorities may vary in fellowships that involve researchers from developing countries.

Supervisors on the Marie Curie programme answer a similar contrasting question, highlighting the importance of the scheme in developing research skills, and providing nurturing a high quality workforce with which to conduct research. The qualitative interviews enable the weaknesses of the programme to be explored. For example, supervisors thought that the programme was weak on financial resources, facilities and equipment.

Similar feedback should be obtained from the fellows' research institutes of origin. An evaluation must enquire if and how these home centres benefit from the programme and what components they rate as useful in developing

their organisational capacities. By conducting such interviews, it would be interesting to gauge how they viewed the effects on their research capacities once a fellow had returned upon completing a programme.

Other elements of the scheme to be explored include: appropriateness of remuneration, convenience of mobility (to see family members), whether partners and children can accompany grantees, the quality of the host centres, etc.

3.3.3 Measuring learning

To measure learning, questions must be raised regarding whether fellows were:

- exposed to useful new technologies and methods
- able to apply new methods or technologies
- able to find solutions to technical or scientific problems
- able to write proposals and design and deliver science presentations
- more aware of the situation of the potential users of research, i.e. adopting a problem-solving approach
- more aware of the potential pathways to adoption of research outputs.

To see if these lessons learnt have delivered changes in behaviour, one must assess how fellows apply what they have learnt in their everyday work, and their perception of how it has increased their capacity to solve scientific problems (Ofir, Van Wyk et al. 2008).

Grantees will need to assess and rank the usefulness of courses received (on presentation, on writing, on developing science skills e.g. research methods). They should also consider other programme components geared to their scientific learning, such as supervisor and mentor support, conferences etc. This area of evaluation will also require grantees, supervisors and programme managers to consider the learning facilities and resources available: infrastructure, Internet access, access to journal databases, possibilities to join professional associations, etc. (Ackerblom 2008).

This learning must be contrasted with evidence of the education and/or training objectives accomplished, often through presentations, reports and positive feedback from supervisors (for example in the AFP, it is the key responsibility of the host organisation to ensure the quality of research, and programme managers' are in turn required to report back, undertake visits and present results) (Mann 2008). The quality of projects is eventually assessed by the peer-reviewed publications they deliver (see Section 3.4 on Programme Impact).

3.3.4 Soft skills and personal development

Even the most technical-oriented fellowships must acknowledge that the success of an individual capacity development scheme depends on factors other than 'hard science'. A successful career in research requires confidence, leadership and autonomy. Gender and development fellowship programmes (e.g. AWARD) have had a strong focus on these outputs. An evaluation must investigate whether this personal development component exists and, if so, assess its success.

Measures of this 'empowerment' (AWARD 2010) could be:

- increased self-awareness
- acquisition of leadership and management skills
- increased confidence and motivation
- capacity to become role models.
-

These can be evaluated through grantees' own self-assessment, and assessed externally by increased visibility in the host and home institutions and through interviews with supervisors and mentors. Grantees will need to assess the value of the programme components geared towards personal developments: mentoring (see 2.3.8), leadership and management courses, exposure to role models, etc.

3.3.5 Leadership and the ripple effect

The development of soft skills such as leadership and problem-solving can have a 'ripple effect' on the home organisations. Gender programmes with a strong leadership component, particularly those that include mentorship, have had an impact on the organisation, raising awareness and re-setting research priorities (de Vries, Webb et al. 2006).

The ripple effects could include tangible outcomes in terms of the fellow's career (promotions, secondments, new jobs, etc.), but also broader organisational and societal benefits in terms of the creation of new partnerships, development of new projects (in the field of research or others, including community development), and the development of new research agendas (ibid.).

Similarly, programmes such as the Ford Foundation fellowship target community leaders who are aiming to tap into this ripple effect. The objective is for leaders to return to their home countries and to amplify contributions to social justice, through alumni associations, networks, research and development projects, and other initiatives (Volkman 2009).

An evaluation of a fellowship will need to track fellows after the programme and see if and in what degrees their leadership skills have led to new partnerships, projects and networks generated. It must also inquire into the potential catalysing factors for this ripple effect.

It is important to note here that often these personal empowerment activities (particularly those schemes directed at minorities or women in science) must be framed within an institutional development framework, since the individual components tackle strategic elements in people's careers, but do not tackle root causes of discrimination. To tackle these root causes and avoid backlashes there is a need to work at an institutional level (McNeely and O'Brien 2006; Ofir, Van Wyk et al. 2008). A way of approaching this is by including host institutions from the countrys concerned in the initial design of fellowship programmes to highlight downstream the structural constraints to achieving the objectives set (e.g. such as done in the AWARD programme). The buy-in of colleagues of the institutions regarding the fellowship's objectives (regardless if these colleagues are grantees or not) is fundamental to its success.

3.3.6 Individual vs. institutional support

As noted in Section 2, individual approaches to capacity development have been criticised for taking into account only one element of the 'capacity development system' that considers only the individual. Kristjanson explains:

> Technical capacity entails changing organizational procedures, as well as building individual skills. Individuals can take their skills with them when they leave the organization, but new procedures and systems become integral to how an organization operates. The institutionalization of new research approaches cannot be unlinked from the learning capacity of an organization and the capacity for systems thinking.
>
> (Kristjanson, Lilja et al. 2008: 10)

A systemic analysis acknowledges that integrating the three levels – individuals, organisations and wider society – in a systemic fashion is critical to success (Taylor and Clarke 2007).

Existing fellowship programmes claim that a focus on the individual has spill-over effects on the home and host institutions through building their human resource capacity. Some schemes have included an institution capacity building element. But often such capacity development initiatives focus on individuals because it is considered too expensive and complicated to tackle institutional capacity.

For example, the Marie Curie fellowship includes bench fees, a small financial support to the host institution (independent of the fellows' remuneration). Further, when surveyed, host supervisors declared that the fellowships allowed them to concentrate on research, and they felt that fellows had a 'positive impact on the research capabilities of the group' by contributing to the group with 'techniques, skills and competences' (van de Sande, Ackers et al. 2005). Similarly the International Science Foundation fellowships include support to host organisations with equipment and materials, widening the possibilities for research (Ackerblom 2008).

Other programmes have included in their programme design specific components on institutional support. For example, START's African Climate Change Fellowship Programme (ACCFP) assessed its contribution to institutional development which had been implemented mainly through climate change awareness activities and climate change-oriented research and management training courses. They assessed this institutional strengthening by evaluating the degree to which climate change issues had been mainstreamed into research

portfolios and how the topic had been included in university curricula (START 2011). Similarly, the AFP has supported home (African) institutions by organising events and training, aiming for an uptake of project outputs and success in securing future funding.

An impact evaluation must assess the grantees', supervisors' and programme managers' perceptions of the success of these institution-building activities. These should be triangulated against the stated outputs: institutional mainstreaming, whether future funding has been secured, impact statements, etc. Have the research objectives promoted by the fellowship programme (e.g. gender equity, climate change) been mainstreamed into the research strategies? Are the host and home institutions more capable of obtaining funding for future research?

When designing future programmes, an interesting learning point to take from the ACCFP is the importance of the engagement of the home institution. Often this institution is sidelined throughout the fellowship process and only perceives any benefits once the fellow returns.

3.3.7 Mobility and 'brain drain'

Do fellows actually return to their home institutions, to the research sector and then remain in their country of origin? This has long been a key concern in the management of grants and fellowships, with fears about the risks of investments in individual capacity building being lost to dominant northern research institutions and countries. European fellowships aim to keep researchers in Europe and prevent them going to the US; African/Asian fellowships aim to keep scientists in their home countries, and not migrate to Europe or the US.

An evaluation will need to map the 'geography' of flows: nationalities of grantees, destinations chosen for fellowships, each participant country net inflow and outflow of fellows, and eventually which countries fellows choose to reside in after their fellowship.

The evaluation of the return to home base will need to be assessed at least on two levels: noting the seniority of the fellow (more senior fellows are more likely to return) and the number of years outside the home country (in the Marie Curie programme, four years after the fellowship, 56% of fellows had returned).

Grantees must also reflect on the 'push' and 'pull' reasons to return home or stay abroad. Key factors include: scientific career requirements for an international CV, prestige/excellence of dominant northern centres, the possibility of conducting exciting or better research, the ability of partners and children to accompany the fellow, the fear of losing networking connections, remuneration and relative costs of living, culture, quality of life, etc.

An evaluation must also assess whether fellows intend to stay or have stayed in the field of scientific research or if they intend to move or have moved on to other sectors.

For example, in the case of the Marie Curie fellowships, there was indeed a 'brain drain' from countries in southern Europe toward research centres in the north, primarily the UK. Nonetheless, fellows tended to return to their home countries after a number of years, and a great majority of them stayed within the European Union.

Some fellowships have components that lure or ensure fellows return to home institutions. For example, the EU has return grants to take southern researchers back to their home countries. OECD research fellowships require:

> Return to employment with his/her laboratory of origin. If this is not the case, he/she must prove that there is a continued on-going scientific affiliation with the former laboratory, as this ensures that the relationships established during the fellowship are put to beneficial use.
>
> (OECD 2011).

Geographies of flows must assess the real success of these 'repatriation' funds and conditional contracts.

Another mechanism to ensure return to the home country is that used by the Ford Foundation. Its International Fellowship Programme targets community leaders from disadvantaged groups who are heavily involved in social justice struggles within their own countries. This moral commitment by grantees makes a return to the home country and an impact to broader society more likely (Volkman 2009).

3.3.8 Mentorship

Three fellowship programmes studied in this review included a strong component of mentoring: AWARD (and its predecessor the Rockefeller G&D), Borlaug Fellowships and the AFP. As the Young Professionals 'Platform on Agricultural Research for Development' (YPARD) notes:

> Mentoring focuses on the individual (mentee), on their present needs and potential, and thus prepares them for leadership in ARD ... It encompasses coaching, making it unique and adding value to career growth and leadership skills of any individual ... In leadership, people aspiring to be leaders have sought mentors, in the leadership circle that they walk with to acquire soft skills, and learn from their experiences, they have often worked as their aides. Research institutions have relied on mentoring and coaching to enable young inexperienced researchers gain skills, and experience on research work, writing, and publishing.
>
> (YPARD 2011: 5)

In short, it refers to the 'developmental relationship between a more experienced person and a less experienced partner' (AWARD 2011).

Mentors are different from supervisors: supervisors ensure and supervise the quality and delivery of the research project chosen by the fellow and support the development of the grantees' scientific research skills. Mentors support career development in more holistic terms. The 'golden rule' for mentor support is for mentors to have 'been there, done that'; the mentor has already gone through the same experiences and challenges that the fellow is going through (Pawson 2004).

The assessment of mentorship relationships is achieved through asking mentees and mentors their views and satisfaction levels regarding the following (taken mainly from YPARD, Borlaug, and G&D Rockefeller Fellowship/AWARD):

- the rigour of the application and selection process
- the existence of orientation training and coaching assistance
- the development of a mutually-constructed purposeful roadmap stating objectives and expectations
- views on mentor-mentee matches: are they based on country, proximity, or similar research area?
- views on the selection of mentors
- views on the effectiveness of mentors in supporting mentees' careers and personal development, for example in providing knowledge and innovative approaches
- views on the mentor-mentee relationships: e.g. was the mentor accessible and supportive?
- existence of small allowances to enable meetings to take place
- frequency of meetings
- duration of mentorship
- continuation of mentorship after the fellowship period
- monitoring and evaluation mechanisms of the mentorship relationship.

E-mentoring is also included in some tertiary education schemes, either as a support to university students or fellows in general, or specifically for building capacity in particular areas (for a good introduction to e-mentoring see Bierema and Merriam 2002). A good example of the latter is Author Aid, a global online mentoring programme for young researchers, providing networking, mentoring, resources, and training for researchers in developing countries. It mainly focuses on assisting young researchers in developing countries to publish their scientific work (YPARD 2011).

3.3.9 Networking

The international nature of science and the importance of knowledge transfer to scientific development makes the development and stimulation of contacts a central concern (van de Sande, Ackers et al. 2005). Most individual capacity development programmes in scientific research include an important component for networking, i.e. creating and participating in spaces both formal (conferences, workshops, etc.) and informal (events, gatherings, professional memberships, etc.), so that grantees can interact with other scientific researchers and stakeholders (policy makers, private sectors, farmers' associations, etc.).

Not only do most research fellowships include a strong networking component, there are also stand-alone grants to promote knowledge exchanges, building of partnerships and the construction of networks. Examples include the Royal Society awards for collaborative research projects in Africa, the British Ecological Society Travel grants

for African ecologists or the British Academy support of linkages between UK researchers and researchers in Africa, South Asia and the Middle East.

Evaluations must gather grantees' and supervisors' views on the impact of individual capacity development schemes on the development of transnational networks, as well as the importance assigned to these new networks in future career development.

As a baseline, fellows should indicate the existence of prior networks, and the role the scheme had in supporting and enhancing existing relationships and networks. Further, surveys and interviews must identify the role of the scheme in developing new contacts. Similarly, the nature of those new contacts should be established: are they personal or professional? Are they mono- or inter-disciplinary?

It would be interesting to assess the impact on:

- advancing researchers' careers
- supporting access to new conferences, funding and publication opportunities
- creating inter-organisational links
- the creation of a common 'scientific culture' (e.g. African or European) (van de Sande, Ackers et al. 2005).
-

Finally it would be interesting to elucidate the sustainability of these networks: are these linkages retained over time?

3.3.10 Partnership building

The literature on north-south research partnerships tends to focus more on institutional capacity building opportunities resulting from research partnerships, rather than individual capacity building (Bradley 2007). The key elements for successful capacity building, according to Nwamuo (Nwamuo 2000) are:

- the need for local 'buy-in'
- clear mutual understanding of the partnership criteria
- mutual commitment and trust
- respect for cultural norms and values
- open and transparent approach to policy formulation, funding and implementation
- readiness to build long-term relationships
- staff development and teacher exchange programmes.

What is the specific contributory role of individual capacity building schemes in the development of partnerships and how can this role be evaluated? Most fellowships – due to their individual-oriented nature – do not assign central importance to partnerships. The AFP however, considers African-European partnerships to be a cornerstone for capacity development of African researchers (Rothamsted International 2006). It believes that the 'development of effective partnerships where all partners contribute, and all partners gain, building mutual recognition and respect, is fundamental to ensuring success for the longer-term' (Mann 2008: 2). The development of partnerships is encouraged right from the start of the fellowship through the requirement of 'impact assessment forms' for candidates. The logic behind this is that contacts created through the fellowship will be retained, and new opportunities for research collaboration between the home and host institutions (or with other northern institutions) will arise. The individual is used as a catalyst for partnership building. Although the AFP has still not conducted an impact evaluation of early results, it has already mapped out fellows' achievements through evaluation forms that ask whether fellows:

- retain contacts/relationships with northern institutions
- have made applications to funding in partnership with northern institutions and a number of successful funding proposals
- have joint publications in preparation
- are undertaking other follow-up collaborative work: contributions to research projects, participation in training courses and workshops, etc.
- are contributing to building partnerships that are part of larger network systems for technological innovation, where links with extension, farmers, NGOs, businesses and policy bodies are recognised and encouraged.

This brings us back to the recent ARD approaches centred on co-development and involving multi-stakeholder processes and broad partnerships. ARD today requires the creation of partnerships that cut across disciplines, interest groups and discourses or perspectives. Although it is not the remit of this literature review, there is a new role of innovation broker created by the new institutional arrangement for ARD. It mediates between different actors and discourses in the discipline (Klerkx, Hall et al. 2009). Organisations like RUFORUM have the mandate to undertake this role. They should direct their capacity building programmes to reinforce their capacity to mediate between different knowledges and interests, while acknowledging that stakeholder engagement is fraught with power issues.

As noted in Section 2, it is critical to understand power dynamics among partners in capacity development schemes. Capacity development plans have to be owned by partners from the global south. Pound and Adolph help us identify the 'right questions' for assessing ownership by developing country partners (Pound and Adolph 2005):

- Was the proposed capacity development programme developed with national partners in a participatory way?
- Is there 'buy-in' (leading to material and systems support) from the heads of the organisations involved?
- To what extent is the capacity development proposal north (supply) driven and to what extent is it south (demand) driven?
- Is there representation and involvement of in-country stakeholders in capacity development decision-making?
- Are there national forums to oversee research and capacity development activities (e.g. steering committees)?
- Does the proposed capacity development reflect the perspectives and perceived needs of developing country stakeholders?
- Do proposals show how organisations, groups or individuals will be selected for capacity development?
- How is equitable access to capacity development opportunities safeguarded?

3.3.11 Cost-effectiveness

Assessing the economic efficiency of a capacity building programme, and within that, the cost-effectiveness of an individual capacity development scheme is challenging, if not impossible. As will be shown, connections and direct attribution to impacts on poverty and food security are unclear. Capacity development schemes have effects that are difficult to quantify, let alone monetise: empowerment, confidence, leadership, etc. (Ofir, Van Wyk et al. 2008).

In the Borlaug–G&D Rockefeller Women in Science comparative study a figure of cost per fellow is used, yet it does not attempt to quantify the potential ripple effect of the programmes. Ofir et al. advocate a qualitative approach to cost-effectiveness that takes a pragmatic line, accepting the need to accept, 'like much in business', that a 'critical level of input as well as a measure of risk is needed to bring about meaningful change' (Ofir, Van Wyk et al. 2008: 30). Other fellowship evaluations do not attempt to carry out a cost-benefit calculation at all.

By contrast, the Bill and Melinda Gates Foundation – a main donor for research grants – sets out a learning goal of finding ways to 'estimate the social value creation'. It is exploring 'how different foundations and nonprofit organizations measure and/or estimate the linkage between philanthropic capital and social benefit' to inform their thinking and potentially the individual capacity development approach (Tuan 2008). It would be interesting to see what cost-effectiveness assessment criteria or demands are transmitted to their grantee organisations.

3.4 Programme Impact

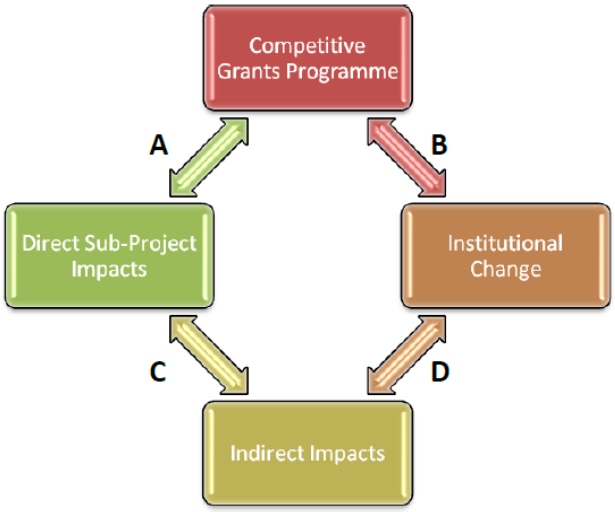
If the impact of ARD on its ultimate goal – improving people's livelihoods – is incredibly hard to elucidate (see Section 4), the impact of the 'stage' prior to this – developing the capacity of scientific researchers – brings yet another layer of complexity to the picture. It is easier to assess the impact of individual capacity development schemes to direct beneficiaries (i.e. grantees or research institutions) than it is to assess the impact on broader society.

RUFORUM acknowledges this difficulty when drawing up an impact model for agricultural tertiary education capacity building as part of a 'capacity strengthening project' (RUFORUM 2011):

> [It] illustrate[s] another level of complexity in assessment of the performance and impact of programmes. The initiatives are designed to have impacts both on direct program participants (students, lecturers, university management and universities) and spillover effects on indirect beneficiaries.

Spill-overs on indirect beneficiaries are difficult to measure. In addition, RUFORUM programmes generally also promote institutional change within the capacity development framework, change which itself leads to indirect impacts of the programmes. A model of ATE [Agricultural Tertiary Education] impacts is illustrated in Figure [1]. Comprehensive assessment of performance and impacts requires measurement of impacts "A", "B", "C", and "D". In practice, measurement of impacts at "A" is relatively straightforward; "B" and "C" are much more difficult; and "D" is nearly impossible to measure.

Figure 1: Impact Model for ATE Capacity Building



The literature on impact assessment on ARD gives very good insights into potential ways to assess the indirect impacts of capacity building schemes. Section 4 studies this literature to see the potential application of certain methodologies (impact pathways evaluation, theories of change, participatory methodologies such as Most Significant Change, etc.) in the evaluation of individual capacity development schemes in ARD.

The easiest (and thus the most common and developed impact assessment in all fellowship schemes) is determining the direct impacts on fellows' careers (Fanzo and Gallin 2006; Ionescu-Pioggia and Pion 2006; Isaacs 2006; McNeely and O'Brien 2006).

The indicators used to assess this impact are:

- perceived impact on careers by fellows (for example, whether they get a position/promotion, an independent research programme, additional external research support, or influence their ability to pursue interesting research)
- commitment to stay in scientific research
- current position
- excellence and location of the research centre
- promotion into senior positions
- time needed for promotion
- number and quality of peer-reviewed journal publications
- services on editorial boards or other advisory roles
- other publications
- number of citations by other scholars
- number of successful funding applications (checking whether fellow was principal investigator)
- experience in teaching and mentoring
- receipt of research grants and career development awards.

3.5 Methodologies

What evaluation methodologies are used to assess the quality of the programme design, the success of programme implementation and the impact of the scheme?

When carrying out an evaluation, one must reflect on when to measure. Early impact assessment (during or right after programme completion) will be less able to discern impacts on future careers, but can explore other potential impacts (perceptions and initial research outputs). Late impact assessments (conducted years after the finalisation of the programme) will be able to gauge better the impacts on a fellow's career, but will be less accurate in assessing the day-to-day running of the programme. Nonetheless, the questions raised should differ according to the timeline preferred.

Similarly, in cases where the fellowship is still running, the questionnaire should be different for people still in the programme, and for those who have finished it. There should also be different questionnaires for fellows/mentees, mentors, supervisors, programme managers, etc.

Studies can include only fellows, or in some cases non-fellows as well. For example, the Burroughs Wellcome foundation fellowship carried out a comparative study between the successful applicants and the non-successful applicants to the award, as a form of baseline (Ionescu-Pioggia and Pion 2006). They did not contact the non-successful applicants, but used their application form and conducted Internet searches on their academic success. However, most evaluations solely use fellows' data.

3.5.1 Surveys

Most existing impact assessments of research fellowships conduct a survey. It is important to note that where a fellowship programme has a low number of cases, this 'problematises' the statistical inference of the survey. In short, unless the total number of fellows is high, statistical representation is not guaranteed. To overcome this, inferences have to be made looking simultaneously at the survey results and the qualitative results (Ofir, Van Wyk et al. 2008).

It is fundamental to get demographic data to cross-tabulate performance results against certain characteristics (e.g. gender, ethnicity, country of origin, and others) (McNeely and O'Brien 2006).

Survey questions can span all enquiry areas indicated in this section. Questionnaires are often completed by:

- fellows
- supervisors
- mentors
- programme managers.

3.5.2 Career trackers, CV analysis and qualitative interviews

The Wellcome Trust has implemented an interesting tool to monitor fellows' careers. The Career Tracker is a longitudinal study where cohorts of individuals are followed over time to track career progression and understand the choices individuals make. The aim is to understand some of the career impacts of its different funding mechanisms. The tracker consists of a brief online survey that is updated yearly, including career performance indicators such as average salary, position, country of destination, reason for relocating (if applicable), research outputs and achievements, etc. (Wellcome Trust 2011).

The World Bank carries out a similar tracking system for their Japan/WB scholarship programmes, a bi-annual Tracer Study of Regular Program scholars. The study targets scholars who completed their awards at least four years earlier. It traces where they are living and working, and whether they attained their degrees.[6] It covers the main questions on career impacts and mobility as the other methods above, but it also enquires about their participation in development.

[6] Example of a tracer study: http://siteresources.worldbank.org/INTWBISFP/Resources/551491-1108589837615/tracer_studies7.pdf

CV Analysis: Complementary to the survey results regarding their CV (position, promotion etc.), a background Internet review is usually also carried out to triangulate data on:

- publications
- citations
- funding grants (applied for and successful).

Qualitative Interviews

In-depth, semi-structured interviews (lasting 60 to 90 minutes, by telephone or in person) are a key method for assessing the critical decision points in fellows' careers and the dynamics of programme implementation.

Often a random selection of fellows, supervisors and mentors are interviewed, including the programme management team, M&E officers, and a selection of relevant stakeholders.

According to Ofir et al, the purpose of interviews is to (Ofir, Van Wyk et al. 2008: 5-6):

- increase understanding of a programme's theories
- gain an understanding of participants' experiences in programmes and of each component
- explore participants' perceptions of the extent to which the intended results were attained
- solicit suggestions for improving the programmes, or similar interventions, in the future.
-

Literature review

As recognised in the recent conference "Measuring Impacts of Higher Education for Development" (LIDC, 2012), when approaching a research study it is important to understand interrelations between organisations and networks of other actors in the evaluation process, particularly relevant to the piece of research being approached, through a literature review. This ensure that the study is novel and incorporating the latest knowledge in that area

This may Include:

- Programme documentation
- Programme M&E reports
- Reports and references made by other organisations/social researchers
- Relevant background documentation on individual approaches to capacity development

With regard to participatory approaches, this literature review has not come across an evaluation of a particular research fellowship through participatory methods other than fellow workshops. Yet there is great potential for applying participatory research methods used in ARD impact assessment. See Section 4 for details.

4 Evaluating the impact of ARD programmes: what can we learn to improve impact evaluation of individual approaches to capacity development?

> All capacity-development interventions are based on theories of some sort. However, they tend to be theories that are implicit in the minds of those who design and implement the interventions, rather than explicit theories in the form of coherent narratives that can be discussed, debated, improved and shared. Because there is seldom a consensus among key stakeholders on the programme theory, various actors may have different – sometimes conflicting – concepts of the programme's goals and strategies and how its activities are expected to strengthen capacity.
>
> (Horton 2011: 6)

4.1 Challenges in evaluating the impact of ARD programmes and their relevance

Section 3 reviewed the different ways current fellowship programmes have evaluated their schemes. It also raised the important challenge that exists to determine the impact of these schemes, as we want to assess the indirect impacts of our activities on broader society. For example, many agricultural research fellowships ultimately aim to have an effect on agricultural productivity and small-scale farmers' livelihoods.

Yet, as this section will show, measuring impact is no easy task, as ARD systems are complex, and linear assumptions about causality and change are not applicable. If a fellowship wishes to be realistic about its indirect impacts, it must acknowledge uncertainty, emergence and complexity. Similarly, another layer of complexity is added because of the many actors involved in the process from capacity development to shifting rural livelihoods and the fact that these actors have different notions of what impact is and how it should be measured.

This section first attempts to summarise non-linear and complex systems, and investigate how ARD theory and practice has tried to address this. It puts a strong focus on participatory methods for assessing ARD impacts, as they embrace complexity and the multi-stakeholder nature of change, and can be a useful component in an evaluation of a fellowship.

4.1.1 Non-linearity and complexity

Impact assessments have, until recently, maintained a vision of technical change in ARD as a mechanism, assuming that causes could be separated and analysed individually. This deterministic vision brought forward an emphasis on prediction, measurement and control (Ekboir 2003). Yet complexity theory has indicated that in technological change multiple, unpredictable factors are at play, making clear the 'futility of setting up planning and measurement schemes that assume CD interventions have more control over their desired ends than they actually do ... the directions in which "development" is going have little to do with where well planned CD interventions intend for it to go' (Ortiz and Taylor 2008: 14).

The linear causal chain: Capacity development in ARD →research outputs→ adoption of technology→ increased productivity→ reduced poverty and food insecurity is highly problematised by complexity theory. Because of the complex nature of social change it is not possible to predict the relation between cause and effect, and our interventions will need to understand and adapt to that complexity (see Table 1). Complex systems are path-dependent and highly unpredictable (Ekboir 2003). In Eyben et al.'s words:

> Complexity theory posits that it is not possible to predict with any confidence the relation between cause and effect. Change is emergent. History is largely unpredictable. Organised efforts to direct change confront the impossibility of our ever having a total understanding of all the sets of societal relationships that generate change and are in constant flux. New inter-relational processes are constantly being generated, which in turn may affect and change those already existing. Small 'butterfly' actions may have a major impact, and big ones may have very little impact.
>
> (Eyben, Kidder et al. 2008: 203-4).

Patricia Rogers in the Rethinking Impact Workshop (Kristjanson, Lilja et al. 2008) explained in simple terms the conceptual differences between simple and complicated or complex interventions. An example of a simple intervention would be following a recipe in cooking, with clear, well-tested steps leading to standard products and certain results. She then compared it to a complex intervention, such as raising a child, where each situation is unique, outcomes are uncertain, expertise and guidelines can help but do not ensure success.

Table 1. Simple and complex interventions (Kristjanson, Lilja et al. 2008: 3)

Simple intervention	Complicated or complex intervention
Single causal strand Intervention is sufficient to produce impacts	Multiple simultaneous causal strands required to produce impacts
Universal mechanism Intervention is necessary to produce the impacts	Different causal mechanisms operating in different contexts
Linear causality, proportional impact	Recursive, with feedback loops, leading to disproportionate impact at critical levels
Pre-identified outcomes	Emergent outcomes

What does this mean in practice? We should understand that the alternative 'pathways' from capacity development activities to outcomes and impact are not linear but branching. Research outputs do not solely directly affect the use of technology, as other factors are involved in influencing the use of technology. When the environment is good outputs may influence 'stakeholder knowledge, decision-making and capacity, which may, in turn, lead to further effects' (Springer-Heinze, Hartwich et al. 2003: 282).

Capacity development activities will depend on the 'trajectory and momentum' already existent, (for example, Section 2 discussed 'endogenous processes'). But they will also depend on other factors – actors' interests, policy influences, power structures, culture, weather, etc. that interplay with these processes. This, coupled with emergent factors and the unexpected degree of impacts, makes capacity development processes highly complex.

Ortiz and Taylor (2008) see in a successful M&E approach to capacity development in a complexity system as one that embraces this complexity. Instead of considering plans as set in stone, the project manager reassesses the situation. There is a common understanding on where a capacity development project starts and where it wants to go to (its desired outcome) yet the way to get there will be readjusted along the way depending on the emerging issues. This constant reassessment is called 'iterative measurement' (Ortiz and Taylor 2008).

4.1.2 Assumptions about change

If social change is uncertain, complex and emergent then actions that aim to promote particular forms of social change i.e. developing the capacity of individual researchers so as to eventually improve farmers' livelihoods, are based on particular premises, assumptions and value that underpin the change effort (Aragón 2009: 13). Thus an impact assessment inevitably depends on this postulated relationship between research inputs and impacts (Ekboir 2003).

Further, different stakeholders involved in the process from the design and implementation of the programme to its evaluation will have different notions on how change occurs, and these assumptions are often kept implicit in stakeholder actions. Different development actors involved in an individual approach to a capacity development programme will have different theories of change and will thus act according to their assumptions, shaping the development outcomes. Similarly, divergence between actors' premises will generate conflict and contradiction. What theories of change do is to 'put assumptions at the centre of analysis and recognize the non-linear, complicated or complex nature of development [7]'. Theories of change workshops aim for stakeholders to make explicit and share with others the assumptions about how change happens. The goal is not to reach a consensus – and thus end up with a more convoluted logframe. It is to acknowledge the divergence in assumptions, premises and values between stakeholders and the contingent or transitory nature of the relationships between activities, outcomes and impacts, and the need for constant redirection and stakeholder deliberation.

In fact, it is important to note that evaluations and impact assessments are useful not only because of the outputs they produce (an evaluation report, lessons learned, etc.) but as a process. Engaging stakeholders in assessments is valuable in and of itself, as assumptions are exposed, interest is shown and potential pathways for collaboration emerge. Active stakeholder participation in evaluations is a form of capacity development in itself. It can lead to 'lasting effects on the knowledge, attitudes and skills of people and on their subsequent decisions and actions' (Horton and Mackay 2003: 133).

[7] Internal document on Theories of Change for the AWARD programme.

It is important to acknowledge that there are different 'spheres': sphere of control, sphere of influence and sphere of interest (see outcome mapping in 3.2.1), and that when thinking about activities and outcomes one does indeed have more control over what occurs and what doesn't. But this does not mean that a theory of change for an individual capacity development scheme such as a fellowship should focus solely on those activities that it controls. A theory of change of a fellowship should go beyond the finalisation of a research project by a fellow, and explore the subsequent stages.

A theory of change exercise should expose the assumptions that stakeholders have about the pathway, linking the increased capacity of an individual researcher to changes in people's livelihoods. What are the assumptions about adoption and diffusion? How do these translate into changes in different farmers' livelihoods? What factors are in play? This analysis should include as many layers and measurements as deemed necessary.

4.1.3 Multi-stakeholder

This review has noted the importance of stakeholder engagement. This is relevant in complex systems because the processes that occur 'self-organize by the interactions of many agents who follow their individual plans. Even though some agents have more clout than others, no single agent or group of them has the power to determine uniquely the development path' (Ekboir 2003: 167).

Not only do we need to take into account the fact that different actors negotiate spaces for change according to their own values, interests and shifting development outcomes; but also that they will have very different ideas about what impact is. Some actors may value economic notions of productivity, while others may value different development results such as empowerment or autonomy.

This brings us back to the need to engage with stakeholders and prioritise the voice of those who will eventually choose (or not) to use the technology being developed in these individual capacity development programmes on ARD:

> An impact oriented public agricultural research organisation focuses on development goals at all stages of the research process. Hence, impact orientation refers to organisational features such as the use of client-oriented research methods, responsiveness and service orientation, strong linkages to farmers and stakeholders, and strategies for research planning, staff development and programme management that support the pursuit of development goals.
> (Springer-Heinze, Hartwich et al. 2003: 268).

4.1.4 The problem of attribution

Capacity development schemes that work with individuals or organisations have difficulty proving to others (particularly donors) their role in achieving certain outcomes. This is because of the complexity of social change, but also because there are multiple capacity development providers working with the same organisations. There are multiple examples: FARA capacity building programmes are funded by many donors, and the Gender and Development Unit in the CGIAR has been funded both by the Rockefeller Foundation and the BMGF. How can we attribute impact to different contributing schemes?

This can be solved by carrying out organisational assessments of schemes instead of evaluations (Simister and Smith 2010) so as to see how all different capacity development programmes perform. Yet the contribution to broader impacts will still be difficult to assess because different organisations are contributing to agricultural research. Sector-wide assessments could shed light on such impacts. Similarly to have a greater impact fellowship schemes should be placed within sectoral strategies and platforms to maximise impact:

> Individual ... support can be worthwhile if justified as cost-effective means of completing planned research activities. However, it is probably not effective capacity development unless it is linked to a wider organisational or network development strategy consistent with the aims of the research programme.
> (DFID 2006: 6).

Engaging with sector platforms (e.g. RUFORUM) both in strategy building and impact assessments would be an interesting move for individual approaches to capacity development schemes. Impact assessments should focus not only on research inputs and outputs, but on the 'broader system in which research is embedded and the contribution of research to technical and institutional changes' (Watts, Horton et al. 2008: 23). This is because innovation involves not only research tasks but also the influence of non-research actors such as the extension services, the relevant government bodies, the management of universities, the agricultural NGO sector, farmers'

unions and many others. Researchers can contribute most effectively to innovation when they participate in partnerships, alliances and coalitions.

Engaging researchers with end-users in these sector-wide platforms is a useful learning exercise as often researchers possess little knowledge of how innovation occurs in agriculture. They do not attempt to understand how research and development (R&D) can create change at the farm level, nor the mechanism that may link technology to productivity and broader societal benefits (Springer-Heinze, Hartwich et al. 2003).

Yet difficulty in achieving attribution should not be over-emphasised, as long as there is evidence of contribution and progress. This is what Simister et al. call illustrations of change (Simister and Smith 2010). When capacity building – as in the case of fellowships – is concerned with altering the vision, values and culture of researchers and their organisations, or aims to improve organisational systems such as research planning, fundraising or human resources, it is difficult to trace all wider results as they spread in time and space. According to Simister and Smith, in these circumstances, the best that can be done is to record some of the changes that occur, highlighting specific examples that illustrate wider changes (ibid).

4.1.5 The opposing forces of accountability and learning

Donor pressures to make capacity development programmes accountable have had the unexpected effect of decreasing the potential of capacity development to promote organisational learning. Impact assessments and evaluations are fundamentally directed at gathering information for fund-raising, and satisfying donor requirements. According to Watts et al., requirements for external evaluators to 'work at "arms length" from projects, programmes and their staffs, to maintain neutrality and impartiality, often inhibit learning' (Watts, Horton et al. 2008: 24).

According to Horton and Mackay, most impact assessments based on economic valuations of initiatives have included accountability requirements, yet these have not helped 'managers and scientists understand how their activities produce results or to draw lessons about how to improve future research programmes and manage the organisations that undertake them' (Horton and Mackay 2003: 132).

To promote institutional learning, impact assessments must link assessments more closely with management decision-making. Processes should be:

> … designed with specific uses and users in mind, and these users involved in the evaluation process. Impact assessments should build in opportunities for learning and reflection by those responsible for managing programmes that are being assessed. They should also foster interactions among managers, beneficiaries and other stakeholders, to promote social learning and arriving at shared understandings concerning impacts and how they have emerged.
>
> (Watts, Horton et al. 2008: 33-34).

Donors must be aware that short-term projects and a 'culture of success' often deters organisations from being self-critical and engaging in organisational learning that tackles structural issues and so they may not be able to produce tangible benefits in a short period of time.

4.2 Addressing these challenges: types of impact assessment and potential applications for evaluations of capacity development

Building on the debates about complexity, different organisations have: (i) focused on mostly quantitative experimental economic analyses that aim to 'pin down' complexity in their modelling; or (ii) have adopted a qualitative approach integrating complexity, such as the Impact Pathway Analysis; or (iii) have adopted a collaborative approach to impact assessment, seeing knowledge as co-constructed with stakeholders. These different approaches are discussed below.

(i) Experimental economic impact assessments

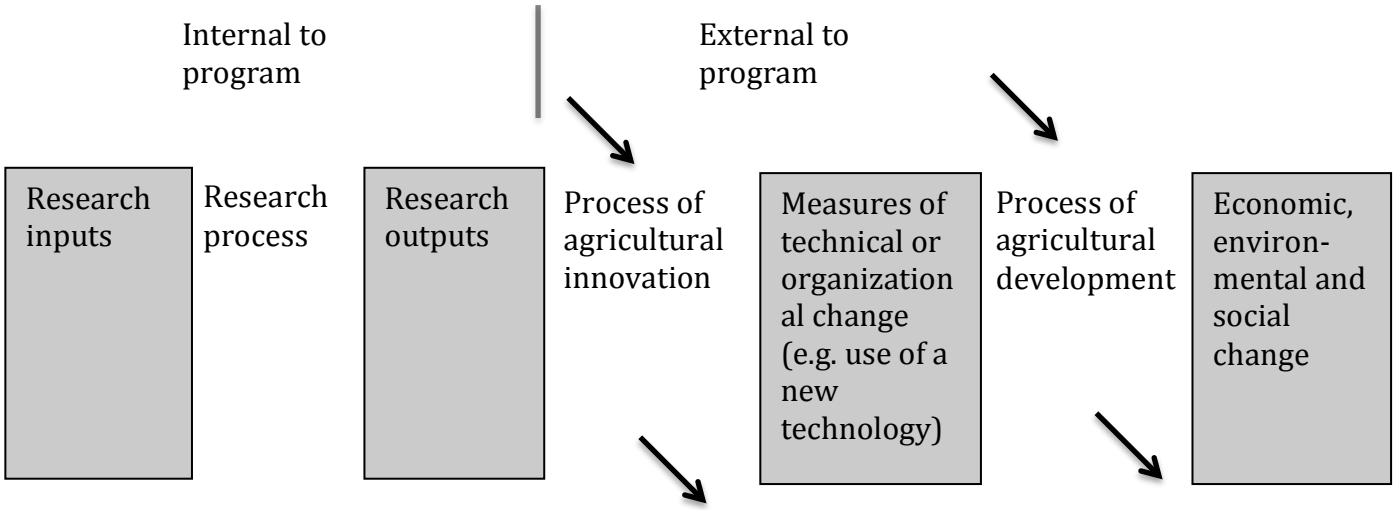
These impact assessments are often heavily quantitative. They are often carried out by agricultural economists, and are mostly based on the projected economic impact on poverty. The CGIAR and the World Bank have traditionally been favourable to this type of impact assessment. They are based firstly on microeconomic analyses to measure the impact of adoption on individual adopters (before diffusion occurs), and then on measurements of aggregate impact of a continuously evolving line of various improvements (de Janvry, Dunstan et al. 2011). To compare between adopters and non-adopters (the counterfactual), the studies are based on randomisation at a

village level (so as to integrate spillovers), where some villages have adopted the technology and others have not. Similarly another variable is early stages of adoption and later stages of diffusion (ibid; Baker 2000). These experimental tools do not seem appropriate to help evaluate the impact of individual approaches to capacity development in ARDs.

(ii) Impact Pathways Analysis: a qualitative approach to impact assessment

Impact Pathways Analysis[8] is a very similar exercise to that carried out to determine the organisations' theories of change. It lays out the logical links from research inputs to economic, environmental and social changes, enquiring about external processes that may influence different stages in the pathways (see Figure 2 which is borrowed from Springer-Heinze, Hartwich et al. 2003). It breaks the pathway down into smaller sequences of events, adding intermediate steps. The aim is to build collectively a plausible argument: why and how (or why not and how not) the research output feeds into the decisions of and changes made by the research clients. It is a consultative or participatory exercise depending on the degree of participation of stakeholders, and it includes an important question: 'who will use the products of research?' (Springer-Heinze, Hartwich et al. 2003: 279-280).

Figure 2



Source: Adapted from Springer-Heinze, Hartwich et al. 2003: 279

According to Douthwaite:

> Participatory Impact Pathways Analysis begins with a participatory workshop where stakeholders make explicit their assumptions about how their project will achieve an impact. Participants construct problem trees, carry out a visioning exercise and draw network maps to help them clarify their "impact pathways". These are then articulated in two logic models. The outcomes logic model describes the project's medium term objectives in the form of hypotheses: which actors need to change, what those changes are and which strategies are needed to realise these changes. The impact logic model describes how, by helping to achieve the expected outcomes, the project will impact on people's livelihoods. Participants derive outcome targets and milestones which are regularly revisited and revised as part of project monitoring and evaluation (M&E).
>
> (Douthwaite, Alvarez et al. 2008: 1).

[8] For a good summary on how a participatory impact pathways workshop would look like see: http://www.future-agricultures.org/farmerfirst/files/T1d_Douthwaite.pdf

The Impact Pathways Analysis is rarely used alone; it is a complementary technique. For example, the CGIAR advocates its use together with an array of quantitative approaches (including cost-benefit analyses and the economic impact) as well as other participatory approaches such as outcome mapping (Walker, Maredia et al. 2008). Its usefulness is that among the different theories of change; it exposes and promotes debates about the assumptions, values and premises that occur regarding social change and development agents' role in trying to transform agricultural systems. As mentioned above, a process like this must integrate the diversity of stakeholder worldviews and opinions about the project and generate debate. It has to be an iterative process, as different external and internal factors will arise during the project and beyond it.

(i) Collaborative participatory approaches

These methods are based on an understanding of knowledge as co-constructed, and engage researchers, users and other stakeholders in designing, monitoring and evaluating programmes. They can be incredibly useful when evaluating individual approaches to capacity development schemes such as fellowships.

4.2.1 Outcome mapping[9]

More and more organisations are showing interest in outcome mapping, from donors to capacity development providers and consultants. For those organisations that have used it for planning purposes, it is a tool that allows stakeholders to assess the contribution of a development project or capacity development scheme to specific outcomes. As it involves stakeholders in a participatory fashion, it is also a learning tool.

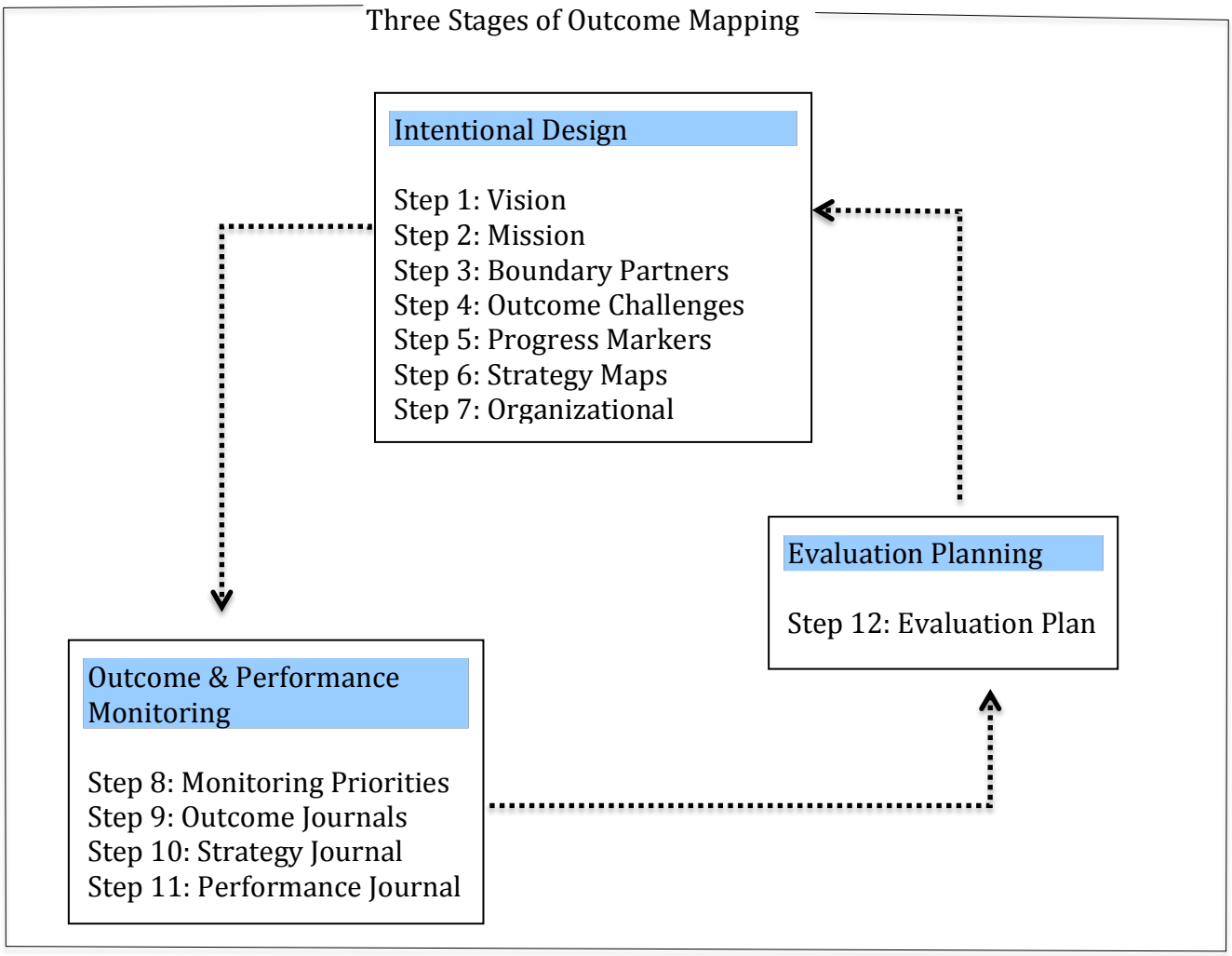
Developed by the IDRC, its innovative approach focuses on behavioural change or the 'people' side of social change. Outcomes are defined as 'changes in the behaviour, relationships, activities or actions of the people, groups and organisations with whom a programme works directly'. These behaviour changes are logically linked to programme activities, yet it acknowledges that outcomes need not directly be caused by these activities. Thus the starting point is the desired outcome in terms of changed behaviours, and then it works back identifying those factors that may lead to that outcome, including the project activities. This means this method focuses less on attribution to outcomes and more on contributions. It is good at establishing change at an organisational level (Simister and Smith 2010).

It then identifies the boundary partners – those actors that are likely to influence the outcome – and thus tries to engage and collaborate with them. It is a good tool to identify opportunities for influence. When evaluating, it will be possible to see if boundary partners were in fact influential, and to gauge the relative success of capacity development exercises in mobilising their support (ODI 2011).

To use outcome mapping effectively, it needs to have been used since the planning stage, so as to contrast the achievement of desired outcomes, the behaviour change of boundary partners, and stakeholders' perception of the 'reality' that occurred. The strength of this tool is that in its three stages it includes design, outcome and performance monitoring and evaluation (see Figure 3). The whole exercise is specific to the organisation and context; and indicators are identified specifically for each organisation (Earl, Carden et al. 2001).

[9] For IDRC's publication on outcome mapping, see the ebook: http://web.idrc.ca/openebooks/959-3/

Figure 3. Three Stages of Outcome Mapping



Adapted from Earl, Carden et al. 2001: 3-4

4.2.2 Stories of change

These participatory tools emphasise that social change cannot be illustrated well by only a set of indicators but that there is a need to understand the depth and complexity of change. These methods retain the particularity of a specific narrative of change at an individual, organisational or societal level (Soal 2001).

4.2.3 Most Significant Change (MSC)[10]

The most widely used stories of change tool is Most Significant Change (MSC). This enables monitoring without indicators and evaluations to take place. It is particularly useful in cases where it is not possible to predict exactly what the outcomes will be; where outcomes vary depending on the beneficiary; where there is divergence of opinion between stakeholders on which outcomes are the most important;[11] and where interventions are expected to be highly participatory, including any forms of monitoring and evaluation of the results (M&E News 2011). These are all applicable to individual approaches to capacity development, provided they use participatory approaches.

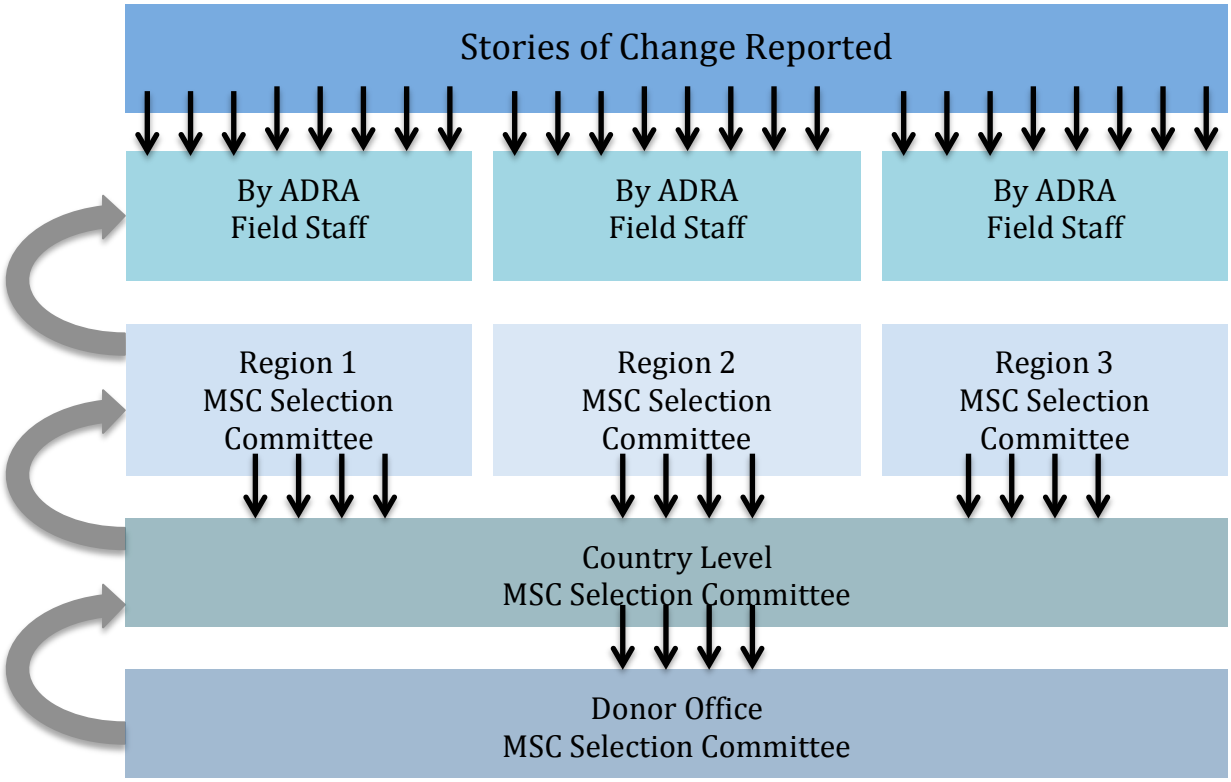
As Simister and Smith (2010) explain:

> MSC aims to identify significant changes brought about by a development intervention, especially in those areas where changes are qualitative and therefore not susceptible to statistical treatment. It relies on people at all stages of a project or programme meeting to identify what they consider to be the most significant changes within pre-defined areas (or domains) (Simister and Smith 2010: 16).

[10] For the main resource of implementing MSC see Davies and Dart 2005: http://www.mande.co.uk/docs/MSCGuide.pdf
[11] For example, for outcome mapping, some degree of agreement among stakeholders on outcomes is needed.

How do MSC processes work? In summary, the process collects stories of significant changes from field level, and these are systematically selected by panels of stakeholders or programme staff. Once these changes have been gathered, workshops including different stakeholders read the stories and discuss the value of the reported changes to decide which is the most significant of all. There may be multiple levels at which stories of changes are gathered and selected (Davies and Dart 2005). An example of a process is shown in Figure 4 based on ADRA Laos from Davies and Dart 2005.

Figure 4



Source: adapted from Davies and Dart 2005: p11

As in other participatory techniques, it is the process that matters as much as the outcomes. The participatory deliberations around which changes are significant in effect enable an inference that goes beyond the particular. It provides information-rich stories that are good for decision-making, and creates an organisational culture of programme impact (Simister and Smith, 2010). The important element here is transparency, inclusion and democracy in participatory processes, as well as record-keeping on why and how each story was chosen. These processes must recognise that stakeholders may have different and sometimes opposing perspectives. As noted earlier, power differentials in these multi-stakeholder processes should be exposed and discussed.

Despite not being designed for capacity development programmes, MSC characteristics allow it to be adapted for this purpose:

> For the purposes of evaluating the impacts of capacity building it was felt that using a narrative stories-based approach could help to explore the depth and complexity of human, relational and organisational change. Capacity building processes can produce diverse, unpredictable and emergent outcomes which cannot always be catered for using conventional approaches based on pre-established indicators of success. What is also attractive about MSC as an approach is that, as is expressed in the reasons given above, it can also facilitate organisational learning by helping staff to make sense of and conceptualise the impacts of their work, and generate new ideas and innovative practice.
>
> (Wrigley 2006: p6).

4.2.4 Peer Ethnographic Evaluation and Research (PEER)

This method is also reliant on the richness of narrative data to illustrate the complexity and particularities of social change. The key idea is to train members of a community – peer researchers – to carry out in-depth conversational interviews with colleagues in their social networks, and to report back findings in a series of in-depth interviews with a social scientist. It builds upon the creation of trust between researchers and the community. Peers are often recruited among marginalised and harder to reach social groups. Through getting insider knowledge PEER collects local interpretations of social change and can attribute these to development interventions and other external factors[12] (Options 2011).

4.2.5 Appreciative inquiry

Originally designed to improve organisational performance in private companies, appreciative inquiry is a project design and M&E tool based on focusing on 'strengths' rather than 'gaps' or 'weaknesses'. It explores the 'best of what has been' i.e. it is appreciative, and it aims to be applicable, provocative and collaborative (Johnson and Cooperrider 1991). It aims to create a collective image of a better future in the organisation based on 'what works'. The process aims to discover best examples of organising and organisations within the institutions, to understand what forces – the people, the organisation or the context – create better performance, and finally to reinforce and amplify the people and processes exemplifying best practice. The aim is to build a momentum of good practice within an organisation.

The process is very similar to MSC in its bottom-up approach of collecting stories of good change within an organisation. It involves:

> … a bottom-up interview process where almost all organizational members were interviewed to uncover the "life-giving forces" in the organization. People were asked to recall times they felt "most alive, most vital, most energized at work" and were then questioned about those incidents. The interview data were then treated much the same as any qualitative data set; through content analysis the consultants looked for what people in the organization valued and what conditions led to superior performance. This analysis was fed back into a large planning group which was charged with developing "provocative propositions". Provocative propositions were statements of organizational aspiration and intent, based on the analysis of the organization at its very best. These propositions were then validated by organizational members along two dimensions: (1) how much does this statement capture our values? and (2) how much are we like this?
>
> (Bushe 1995[13]).

4.2.6 Horizontal evaluation[14]

This is another participatory approach that fosters programme improvement and knowledge sharing among network participants; combining self-assessment with external reviews by peers. It is a good method for organisations that work in different sites. By introducing peers it 'neutralizes the lopsided power relations that prevail in traditional external evaluations creating, a more favourable atmosphere for learning and improvement' (Thiele, Devaux et al. 2006: 1).

Horizontal evaluation has been used by farmers to evaluate ARD methodologies. It consists of the following:

> The central element of a horizontal evaluation is a workshop that brings together a group of local participants, who are developing a new research and development (R&D) methodology and a group of peers from other organizations and mostly from other countries in the region, who are interested in learning from the experience. The workshop combines presentations about the methodology, field visits, small group work and plenary discussions. Views of the two groups concerning the strengths and weaknesses of the methodology under development are elicited and confronted. Suggestions are generated for improving the methodology, and further development of the methodology is encouraged in other settings.
>
> (Watts, Horton et al. 2008: 27).

[12] For more info on the PEER method see http://www.options.co.uk/images/stories/resources/peer/peer_process.pdf

[13] Advances in Appreciative Inquiry as an Organization Development Intervention , published in the *Organization Development Journal*, Fall 1995 Vol.13, No.3, pp.14-22

[14] For a practical example of a horizontal evaluation see http://ageconsearch.umn.edu/handle/52522

4.2.7 Social Return on Investment (SROI)

Another way of assessing impact is the Social Return on Investment (SROI).[15] This is currently used (among other methods) by AWARD. SROI is an analytical tool to measure and account for a broad concept of value. It incorporates social, economic and environmental costs and benefits into decision-making, providing a fuller picture on how value is created or destroyed. SROI is a measuring methodology built on traditional forms of cost-benefit analysis and aims to capture the economic value of social benefits. It transforms social objectives into financial measurements.

SROI is based on seven principles:[16]

1. Involve stakeholders
   Understand the way in which the organisation creates change through a dialogue with stakeholders.

2. Understand what changes
   Acknowledge and articulate all the values, objectives and stakeholders of the organisation before agreeing which aspects of the organisation are to be included in the scope; and determine what must be included in the account in order that stakeholders can make reasonable decisions.

3. Value the things that matter
   Use financial proxies for indicators in order to include the values of those excluded from markets in same terms as used in markets.

4. Only include what is material
   Articulate clearly how activities create change and evaluate this through the evidence gathered.

5. Do not over-claim
   Make comparisons of performance and impact using appropriate benchmarks, targets and external standards.

6. Be transparent
   Demonstrate the basis on which the findings may be considered accurate and honest; and show that they will be reported to and discussed with stakeholders.

7. Verify the result
   Ensure appropriate independent verification of the account.

Recent donor pressures for measuring results may be a key push for this type of approach that aims to include social change in financial measures. The quality of the exercise will depend not on churning out financial measures, but on the richness and inclusiveness of the debate to identify, measure and interpret the proxy indicators for this 'financialisation'.

There are many other participatory approaches based on a similar logic to the tools detailed above: self-assessment over external 'arms length' approaches, qualitative data directed at learning for organisational change (and thus delivering practical useful outcomes) and empowering participants e.g. utilisation-focused evaluation and guided self-assessment (from the roots up).

[15] Guidelines for use of SROI: http://www.sroi-uk.org/sroi-analysis/the-sroi-guide-uk and see http://sroiseminar2009.files.wordpress.com/2009/02/90204-guidelines-sroi.pdf

[16] http://www.sroi-uk.org/home-uk

5 Conclusion

This literature review has highlighted the relevance of individual approaches to capacity development within broader debates in the capacity development literature. It has put forward the key elements and indicators to consider in an evaluation of a fellowship, including a reflection on the different methods available to assess these programmes. Lastly it has explored the literature on agricultural research and development and impact evaluation to find alternative and complementary participatory methods to incorporate notions about complexity and the multi-stakeholder nature of research, and its impacts on social change.

In conclusion there are six lessons learnt from the literature review:

- the importance of process;
- the need to focus on learning;
- the benefits of using several methods;
- the need to include stakeholders in inclusive participatory ways;
- the importance of initiating processes of reflection about assumptions and power; and
- the need for ARD programmes to understand that different kinds of technologies have different social outcomes and that a technological solution may not be the desired solution every time.

5.1 The importance of process

When designing an evaluation for a fellowship programme, emphasis should not be on research outputs such as an evaluation report. The learning that can be sparked through the process of evaluation itself could be significantly more useful than with the ulterior use of the evaluation outputs. This is particularly true when the evaluation involves different actors within the organisation – managers, M&E staff, project managers, mentors, fellows, etc. – and when it engages with different stakeholders. Thus an inclusive approach that fosters debates both internally and externally has more potential to generate reflexivity and organisational learning.

As indicated by Horton and Mackay, participation and process can have lasting effects on knowledge, attitudes and skills of people, and ultimately affect their behaviour and decisions. The question that an evaluating team must raise is: do we have the time and resources required? Programmes must have budgeted time and resources to engage with stakeholders for ongoing evaluative processes (theories of change workshops, deliberation on projects, discussion on impacts, etc.). This means that when designing the evaluation, one must reflect on who needs to be involved, when and how to ensure ownership, inclusion and empowerment; and to identify who will be the facilitator in this learning process and how they will be selected.

Another question arises: who will benefit from the lessons learned in the evaluation, and how will the lessons learned be used? As noted in Section 2, it is important not to take a 'gap' approach to the organisations involved (in this case the fellowship programme and its partners such as the African research centres), but to focus on those existing endogenous capabilities. Thus this assessment has to contribute to and catalyse these endogenous processes for change; the evaluation must tap into existing energies. Involving partners in the design is a way of ensuring we build on these energies.

5.2 A focus on learning

The lessons learned from evaluations must translate into future change. Will the fellowship programme continue? Will it work with the same partners? If the programme staff and organisations do not continue working together, the lessons learned become less useful, and merely acquired for accountability purposes. If the programme does continue, maintaining in some degree the same institutions and people albeit in a different shape, there are more pragmatic lessons to be learned and therefore lasting change is more likely. For evaluation results to be useful for behavioural change, it is fundamental to look toward the future in practical ways.

Evaluations need the space to be critically reflective. A strong focus on accountability – for instance, if the evaluation has been demanded by the donor to assess performance and therefore future funds depend upon it – will inevitably lead to a 'culture of success', in which different actors are pressured to give evidence of good practice. Delinking M&E from funding will yield more effective learning.

If delinking is not possible, the donor involved must at least be aware that short-term projects and a 'culture of success' often deters organisations from being self-critical and from engaging in organisational learning that tackles structural issues. They therefore may not be able to produce tangible benefits in a short period of time. Commitment should thus be long term and expectations regarding tangible results should be flexible – their involvement in the process should be in a partnership form.

When assessing the impacts of a specific capacity development programme such as a fellowship, it is also important to be flexible in its requirements of attribution. Social change in ARD is complex and multiple capacity development providers work with different organisations. This literature review has shown that attributing a particular impact to a particular donor-funded scheme is quite problematic. There are two ways forward: either engaging in sector-wide impact assessments conducted by sector platforms, evaluating the impact of the broader system in which research is embedded; and/or delivering evidence of contribution and progress that is not strictly attribution, for instance, illustrations of change, recording changes that have occurred, and highlighting specific examples that illustrate wider changes.

5.3 Using multi-methods

In order to evaluate an ARD fellowship, the best option is to combine several methods.

5.3.1 Questionnaire

An evaluation of a fellowship often includes a questionnaire for project managers, supervisors in home and host research centres, mentors and fellows including the different variables outlined in Section 3, regarding design, effectiveness and impact.

A questionnaire should include questions on:[17]

Design

- the coherence and relevance of the programme
- each component and how they contribute to programme goals
- the appropriateness of candidate and research project selection
- the appropriateness of programme duration
- the appropriateness of programme location
- the degree to which the organisational development of home organisations was integrated into the design
- the degree of involvement with stakeholders

Effectiveness and implementation

- the running of the programme
- the degree of implementation of activities and results obtained
- the quality, motivation, time and resources allocated for the programme managing team
- on whether and to what extent the expectations of fellows and supervisors in home and host centres were met
- the degree of learning acquired by fellows
- the subsequent changes in behaviour
- the development of soft skills and personal development (self-awareness, leadership and management skills, confidence and motivation, capacity to become role models, etc.)
- the contribution of the programme to organisational capacity (in both host and home organisations)
- fellow mobility and causes (if applicable) of brain drain
- the quality and impact of mentor relations
- the effect on networking
- the impact on partnership building
- cost-effectiveness (to project managers)

[17] Please note that the evaluation team must assess what is the desired 'weight' of the questionnaire. For optimal responses it cannot be too long or complicated. Depending on the goals of the evaluation – what it wishes to learn and apply afterwards – some sections can be prioritised.

Impact

- impact on fellows' careers: publications, promotions, etc.
- impact on fellows' behaviour
- projects taken up by the fellow after the fellowship
- fellows' perceptions of the impact of their work on technology adoption and changes in production.

The evaluation team will need to ascertain if it is relevant to launch a career tracker, surveying fellows every year (or more frequently) to see how their careers unfold. This is most relevant if the fellowship programme is likely to continue for several years.

5.3.2 Interviews

To gain a more nuanced understanding of the issues above, a random selection of fellows, supervisors (home and host) and mentors should be interviewed, as well as the programme management team and M&E officers, and a selection of relevant stakeholders. These interviews should be in depth (from 60 to 90 minutes) and should be semi-structured, assessing the critical decision points in a fellow's career and the dynamics of programme implementation.

5.3.3 CV analysis

To assess the impact on fellows' careers, a search should be conducted on publications, citations, projects designed, and funding grants (those applied for and those successfully obtained).

5.3.4 Participatory impact exercise

In order to gauge the impact of the programme, it is interesting to organise a participatory exercise such as those proposed in Section 4. The most appropriate for the AFP scheme seems the Most Significant Change (MSC). It is important to note here that in this method, the most important thing is the discussions at different levels to identify the MSCs and not the resulting MSC itself. What adds value and representativity is the quality and inclusiveness of the participatory processes to identify the MSCs at the different levels.

5.3.5 Stakeholder deliberation

Depending on the resources, it would be interesting to bring together the different stakeholders involved, in a workshop or a series of focus groups, to discuss the project design, implementation and impact, raising some of the questions indicated above.
This stakeholder deliberation is particularly useful to appraise the research projects carried out by fellows and their relevance for small-scale farmers. Similarly, it is a useful way to question stakeholders about the overall impact of the programme on changing small-scale farmers' livelihoods. It also helps in identifying and learning about the 'chain of events' that leads (or not) from a capacity building exercise to technology adoption, to livelihood changes.

As noted in 4.2, it is also useful to have a workshop on theories of change (or an impact pathways analysis), to explore in detail the assumptions that different actors have about this 'chain of events' and how that affects the impact and relevance of these programmes. This exercise will be most useful if the scheme continues in the future in some form or another, so that practical lessons learnt can be carried over.

5.4 Stakeholder participation

This literature review has strongly emphasised the importance of stakeholder participation at all stages of the capacity development cycle, from design to evaluation. In the case of a fellowship evaluation related to ARD, stakeholders should include not only those involved directly in the fellowship – donors, programme managers, fellows, supervisors (host and home research centres) and mentors – but also those indirectly involved in broader ARD processes. These include the 'broad system of agricultural research', such as universities, policymakers, extension workers farmers, farmers' unions, NGOs, etc. Who the stakeholder participants are will depend on the objectives of the evaluation and the conditions required to give enough weight to the end-users' voices.

In ARD fellowship programmes such as the AFP, the end-users of technology or research outputs are very often small-scale farmers. Ultimately fellowship programmes and ARD aim to change the livelihoods of poor farmers. Capacity development literature shows that user-catered capacity development evaluations lead to improved learning outcomes. Small-scale farmers must have a voice in the review of performance of agricultural research, extension and training systems. In this case, these users should have a voice in the evaluation design and should have a central role in the appraisal of research projects and in the evaluation of the programme as a whole. As

discussed in the literature review, great care has to be taken not to interpret the category 'farmer' or 'small-scale farmer' as an homogeneous one: a farmers' association does not represent necessarily all farmers; technology will influence different kinds of farmers differently depending on context (for example, small or large-scale farmers, rainfed or irrigation agriculture, marginal areas, agricultural labourers, tenants or landowners, etc.). A stakeholder discussion must acknowledge the complexities of rural social dynamics.

It is important to note that it is not required for multi-stakeholder consultations to reach a consensus. It is only necessary to have some sense of shared understanding and values as a starting point for the capacity development assessment. Consensus should not be an objective (and in any case it is not a realistic objective). Evaluations should explore the diversity of visions and opinions to enrich the learning process, always making sure that the most powerful actors (donors, project managers, etc.) do not co-opt (voluntarily or not) the process and instead do give space for marginalised voices to speak.

5.5 Exposing assumptions and power relations

Are we being critically reflective and are we prepared to challenge our assumptions? Capacity development programmes should encourage stakeholders to reflect on how each has different notions about how change occurs, and these assumptions are often implicit in stakeholder actions. Different development actors involved in an individual approach to a capacity development programme will have different theories of change and will thus act according to their assumptions, shaping the development outcomes. Similarly, a divergence between different actors' premises will generate conflict and contradiction.

A theories of change exercise (or a very similar process such as the impact pathways analysis) is a good way to put assumptions at the centre of analysis and recognise the non-linear, complicated or complex nature of development. A fellowship evaluation should have this type of element to make assumptions explicit. For example, AWARD has included a workshop of this kind in their work. The idea is to problematise linear assumptions like the one below:

> Increased capacity of scientists → research outputs → emergence of new technology → adoption of new technology by small-scale farmers → increase in agricultural productivity→ reduction in poverty.

Different stakeholders then discuss the different pathways that (may) link the capacity building activities of the fellowship to the ultimate changes in small-scale farmers' livelihoods. The more the exercise allows for diversity of opinions and debate, the more it will become a learning exercise and the less it will become a stepping stone to obtain a convoluted logframe (making it therefore less useful).

It is important to note that the theories of change exercise in a fellowship should strive to explore the assumptions beyond the area of control of the programme – from capacity building to fellows producing a certain research output. It should look into how fellows may organise other projects/initiatives, the research outputs transformed into technologies, how small-scale farmers adopt those technologies, and what happens to farmers who change their practices and those who don't.

Questioning must also cover broader programme assumptions such as the location and nature of support included in the scholarship. For example, some actors may see a value in investing in developing country research centres and paying fellows to remain in those centres; others may think fellows will be able to bring back more capacity if their training occurs in a northern research centre.

Lastly, stakeholder deliberations must reflect on power relations: individual approaches to capacity development take place in an environment that is messy and political, where certain knowledges are privileged over others, where the voice of the marginalised is silenced. Thus capacity development initiatives should strive to expose these power differentials and aim to redress them encouraging real partnership. We have to acknowledge the role of hierarchy and power in the partnerships formed to deliver these programmes. Deliberation must focus on what knowledge is prioritised and what power relations emerge between partners such as donors, northern NGOs, southern NGOs, and southern research centres. Ultimately we must ask: are we seeing donor-driven capacity development and, if we are, how is this curtailing or facilitating learning?

5.6 'Good science' is not sufficient

Research fellowships (as opposed to taught fellowships) often entail the selection of a candidate and a research project. The relevance and quality of these projects must be assessed both in the implementation of the scheme and in its evaluation.

It is particularly important to note that candidates' research projects should not only be evaluated with regards to their scientific quality (a necessary condition), but also with regards to their relevance vis-a-vis the programme objectives. An assessment panel (which should include not only agricultural scientists but also social and development scientists) should assess the real use of those potential research outputs in the lives of poor small-scale farmers, ensuring not only that the science behind the research is good, but that the potential technologies are relevant for the models of production used by marginalised small-scale farmers.

It is also important to integrate into the programmes the realisation that technology and research outputs are not a silver bullet in development processes. Technological change may be appropriate in some contexts, but not in others. Often the livelihoods of small-scale farmers can be improved through other means – for instance, economic or legal changes, or new social arrangements. ARD must engage with broader development processes, acknowledging that improved agricultural technologies are only one piece of the development puzzle.

6 Annex 1: Summary of Individual Approaches to Capacity Development

Individual approaches to CD scheme	Summary of scheme	Evaluation: What stage are they at?	Summary of evaluation indicators	Link to questionnaire / evaluation report
Marie Curie Fellowship Scheme (Now Marie Curie Actions)	*Interalia* support to scientists to conduct high quality research in third countries in the EU.	Marie Curie Actions reviews its work yearly through 'Work programmes'. Its last impact assessment was carried out in 2005.	• Population profile • Fellows' and supervisors' expectations and views on scheme • European mobility • Networking • Research outputs • Supervision and training • Inter-sectoral exchange • Post-fellowship career trajectories	Impact evaluation report: http://ec.europa.eu/research/fp6/mariecurie-actions/pdf/impact_fellow_en.pdf Survey questionnaire: ftp://ftp.cordis.europa.eu/pub/improving/docs/mcf_finrep_vol3.pdf
OECD Research Fellowships	Support to scientists working in agriculture to conduct research projects abroad, in another member country. (Note: forced return to home institution)	N/A	N/A	N/A
Wellcome Fellowships (Biomedical Scientists and International)	Support to researchers in Biomedical Science to conduct research. International Fellowships tend to focus on public health.	Yearly Strategic Review, and occasional programme review (e.g. SCIART). No evaluation of fellowship programmes yet.	Implemented career tracker: an online survey updated yearly by current and ex-fellows, including career performance indicators such as • average salary • position • country of destination • reason for relocating (if applicable) • research outputs • achievements.	Yearly strategic review: http://www.wellcome.ac.uk/About-us/Strategy/How-we-develop-strategy/ Career tracker: http://www.wellcome.ac.uk/Funding/Biomedical-science/Research-careers/WTDV026334.htm

UN Fellowships	Grant to a qualified individual or group of qualified individuals to fulfill special learning objectives. Such training may be of short or long duration and may take place in an appropriate training institution, in the field inside or outside the fellow's country.	Each agency evaluates training programmes separately. There have been initial efforts to harmonise impact assessment of schemes.	Clear objectives: • Fair and transparent selection of fellows based on established selection criteria • Relevant and appropriate placement of fellows • Use of host institution with relevant expertise and adequate resources to provide an effective and efficient programme • Successful and timely completion of fellows' programme • Return home to relevant position with adequate support • Level and appropriateness of support provided to returning fellows (mentoring) • Evidence of positive contribution to work • Evidence of positive development in performance • Improved performance leading to enhanced services and benefits provided to community.	Methodology: http://www.human-resources-health.com/content/pdf/1478-4491-8-7.pdf
Ford Foundation – International Fellowship Programme (IFP)	Provides opportunities for postgraduate study for outstanding individuals from social groups and communities that lack systematic access to higher education in IFP countries and to enable them to become leaders in their field to promote economic and social justice.	Since 2003 the University of Twente (CHEPS) has been carrying out impact assessments of the IFP. Recently published a book on the impact of the fellowships on people and development.	The CHEPS reports are not public. From the book, most questions seem to revolve around brain drain: return or not and pull and push factors on fellows. Also covers impact on fellows' careers (positions, publications, etc.). Important partnership component.	Impact assessment book: http://www.fordifp.net/Portals/0/content/OJR_Complete_Book.pdf

International Foundation for Science (IFS)	IFS supports young developing country scientists. The research must take place in a developing country. The grant is intended for the purchase of the basic tools needed to conduct a research project: equipment, expendable supplies, and literature.	IFS keeps track of the scientific careers of grantees through the Monitoring and Evaluation System for Impact Assessment (MESIA) which produces and analyses data on grantees and undertakes surveys of the condition of young scientists in developing countries.	Micro impacts: • Achievements of the IFS grantees • Advancement in their research careers Meso impacts • Strengthening of institutions • Formation of research groups • Formation of research networks Macro impacts • National Impact Studies • Regional Thematic Impact Studies • IFS impact on strengthening scientific capacities in developing countries	Impact Assessment Guidelines: http://www.ifs.se/Publications/Mesia/MESIA_1_Conceptual_Framework.PDF Questionnaire of Survey on African Scientists: http://www.ifs.se/Publications/Mesia/MESIA_2_Questionnaire_Africa_english.PDF
Rockefeller Foundation	Does not fund individuals but organisations and fields. Key donor for AGRA and funded the G&D Women In Science programme (now AWARD: see below)	The Evaluation Unit supports grantees in the development of M&E systems.	Each grantee develops their own M&E system	Each grantee develops their own M&E system
Royal Agricultural College African Land Fellowship	Fellowships are offered to Africans mainly from Southern and East Africa who have experience in agriculture and a desire to make a contribution to Africa's development. The fellowship covers tuition fees, accommodation, living costs, flights to and from the UK, provision for networking and a short industrial placement in the UK.	Annual reports and audits, no specific framework for fellowship evaluation.	No information about the 5 year fellowships/grants could be found	No information about the 5 year fellowships/grants could be found

Bill and Melinda Gates Foundation (BMGF)	The goal of the Agricultural Development initiative, the largest initiative in the foundation's Global Development Program and one of the largest at the foundation, is to reduce hunger and poverty for millions of poor farm families in Sub-Saharan Africa and South Asia. BMGF funds research organisations in Africa such as FARA and AGRA.	BMGF has developed guides to actionable measurement. They do not have a specific framework to assess their fellowship programmes.	No specific framework to assess fellowship programmes.	Guide to actionable measurement: http://www.gatesfoundation.org/learning/Pages/a-guide-to-actionable-measurement.aspx
African Women in Agricultural Research and Development (AWARD)	Mentoring programme initiated by the CGIAR in 2008: aim is to provide career development and retain African women in agricultural research and leadership. The mentoring programme runs for two years for post-bachelors fellows and one year for post-masters and post-doctoral fellows. It is a continuation of the G&D Rockefeller.	Good model for fellowship M&E and impact assessment. They are expanding their M&E framework, and have carried out a theories of change exercise. For the previous programme, the G&D Rockefeller, a comparative study with the Borlaug programme was conducted.	The structure used for the comparative study was: 1. The programme design • Relevance and timeliness • Drivers for the programme design • Coherence and comprehensiveness of the programme design • Design for sustainable positive results and action • The selection of target groups • Design of the mentorship component 2. Implementation • Implementation issues and the programme design • Successes and challenges • Meeting expectations • Use of G&D resources • Cost-benefit 3. Outputs, outcomes and impact • Methodological challenges • Outputs • Outcomes • Unintended consequences • Impact **Note:** AWARD's new M&E framework is exploring different ways of measuring empowerment in very interesting ways, exploring the different dimensions of power: power over,	M&E framework and theories of change: internal documents available on demand.

			power to, power with and power within.	
Rothamsted International African Fellowship Programme (AFP)	The aim of the African Fellowship Programme, as established in 2004, is to provide problem-focused training for mid-career Africans in skills and technologies relevant to the agricultural needs and aspirations of their countries which could be effectively implemented in Africa. The overall objective of the programme is to leverage advanced science from Europe, where it is needed, to solve specific problems in African agriculture. Note: originally funded by Gatsby foundation.	Carried out evaluation report in 2008, and an alumni workshop in 2009. Currently designing the early results impact evaluation.	Follow-up questionnaire for fellows: 1. What scientific skills and techniques did you learn during your Fellowship? 2. What were the most important findings of your research work during the Fellowship? 3. What are the benefits of the Fellowship to your home institute or university? 4. What activities have you been involved with to publicise the work from your Fellowship? Have you given talks to scientists or farmer groups? Are there any scientific publications or articles in newspapers and magazines? 5. What are the main problems in carrying out scientific research in your home institute or university and what needs to be done to improve the situation? 6. Were you happy with accommodation, financial and travel arrangements for your Fellowship? Please give details of any areas which could be improved. 7. Did the European Institute appoint a mentor to assist you with non-scientific issues? If so, was it a successful arrangement? If not, would you have liked to consult a mentor from time to time?	Evaluation report and alumni workshop: internal documents available on demand.
Forum for Agricultural Research in Africa FARA-SSA	The Forum for Agricultural Research in Africa (FARA) is a continent-wide umbrella organisation that provides a forum for all stakeholders, African and non-African, of agricultural research and development in Africa.	FARA have developed an M&E strategy. No specific framework for fellowship evaluation.	No specific framework for fellowships, yet indicators for result 4 "human, organizational and institutional capacity for innovation developed": • Staff–student ratios in agricultural learning institutions across the region • Measures of curricula-coherence across the region • Measures of training at farmer and agricultural extension level • Measures of evolution of R&D institutions towards use of innovation systems approaches • Extent of successful regional capacity strengthening initiatives in appropriate areas • Levels and measures of success of ICT-based initiatives for learning • Measures of the increase in diversity and	M&E framework: http://www.fara-africa.org/media/uploads/File/mne/fara_m-e_lowres_01june2011.pdf

			competence of stakeholders and partners engaged in innovation.	
Regional Universities Forum for Capacity Building in Agriculture (RUFORUM)	Established in 2004, RUFORUM has the mission to foster innovation and adaptive capacity of universities engaged in agricultural and rural development to develop and sustain high quality in training, innovative and impact-oriented research and collaboration.	RUFORUM has developed an M&E strategy. Currently developing an M&E system.	Not a specific fellowship evaluation framework per se, but in the M&E strategy there is a section on Quality of Training: 1. How many students have graduated from all regional programmes? Where are they employed? What occurred with students who did not finish the training programme? 2. As part of M&E, we are establishing an online tracking system to trace whereabouts of our alumni, their employability/relevance to the job market and contribution to society. 3. Are the curricula of the faculties adequate and appropriate for producing well-trained students? This will be assessed through the National Forums that help provide feedback to universities and support re-orientation of universities to development relevance. 4. Has RUFORUM influenced the quality of instruction and research of the associated faculties? Will be assessed through tracer studies and feedback from National Forums. 5. Is adequate supervision being provided to the students who are the core of the regional programmes? As part of the Secretariat's activities and annual meetings of Deans and Vice Chancellors, we shall continue to push for improvements. We shall hold meetings with students to assess their views, including on use of project funds. 6. Do the students have an affiliation and loyalty to RUFORUM? How can this be instituted or strengthened? This is important for sustainability of RUFORUM. The alumni association for RUFORUM graduates and their support for RUFORUM including organising internship attachments of students and grant sourcing are key assessment indicators. 7. Are the regional programmes recognised as quality programmes? Are they perceived as dynamic, innovative and evolving programmes? Continued reflection on this use of independent evaluators will help assess this. 8. Is the modus operandi of the programme review process sufficient to maintain a high standard?	M&E strategy: http://www.ruforum.org/sites/default/files/file/Monitoring%20and%20Evaluation/RUFORUM%20M&E%20Strategy%20-%20Board%20version.pdf

Alliance for a Green Revolution in Africa (AGRA)	AGRA's integrated programmes in seeds, soils, market access, policy and partnerships and innovative finance work to trigger comprehensive changes across the agricultural system. The programmes also strengthen agricultural education and extension, address the issue of efficient water management, and strive to involve and train youth.	Currently redeveloping their M&E structure, Have not re-thought their impact evaluation as yet.	No evaluation framework available	No evaluation framework available
African Capacity Building Foundation (ACBF)	ACBF's key objectives are to build new capacity, strengthening and better utilising existing capacity in a sustainable manner. ACBF funds think-tanks and policy institutes in African countries, and leads training programmes for individual and institutional capacity strengthening for development management.	ACBF has recently launched a thematic evaluation of its capacity building programmes with five areas which are: Economics, Agricultural Economics, Policy Analysis and Management, Financial Management, and Public Sector Management.	ACBF has launched a Thematic Evaluation (not available yet) for the training programmes it has supported which will compare the various types and modalities adopted in the implementation of the training programmes in order to ascertain characteristics of each type and identify strengths, weaknesses and lessons learned. The comparison of modalities will include those adopted in the academic postgraduate degree programmes to professional postgraduate degree programmes, and to non-degree in-service training programmes. The training programme is also being evaluated to identify performance levels, achievements and also measure which programme has the greatest impact and why. This evaluation will also assess the ACBF investment in Training Model regarding: effectiveness, efficiency, relevance, and sustainability. The evaluation is also expected to inform decisions on ACBF future training programming structuring by recommending the training programme(s) with the best/biggest potential impact. This will thus inform key policy decisions on training as an instrument of ACBF capacity development. The evaluation is being conducted by Universalia. The report and questionnaire are not yet available.	For Universalia's Organisational Assessment approach: http://www.universalia.com/publications-and-resources/evaluation-tools

Strengthening Capacity for Agricultural Research and Development in Africa (SCARDA)	The purpose of SCARDA is to strengthen the institutional and human capacity of African agricultural research systems, to identify, generate and deliver research outputs that meet the needs of the poor. SCARDA project is implemented by FARA and funded by DFID.	Currently developing their M&E framework in parallel with FARA.	See FARA above	See FARA above
Sasakawa Africa Association for Extension Education (SAFE)	SAFE is a product of two development imperatives: (1) to bring African agricultural universities and colleges more fully into the agricultural and rural development process through the creation of new innovative continuing education programmes; and (2) to expand and strengthen the knowledge and skills of frontline agricultural and rural development advisory service providers to improve their capacity to more effectively serve the needs of smallholder farm families. A fundamental activity is the capacity development of extensionists.	SAFE carries out regional workshops. And at a country level: - Career tracking - Impact assessments - Evaluation reports of particular exchanges (e.g. Alemanya university)	Country-level case studies mainly focus on career development indicators and not on broader impact: • Individual characteristics of respondents • Academic background before joining the mid-career programme • Respondents' employment history • Current employment situation • Job mobility • Relevance of studies to current job • Job satisfaction • Appropriateness of position and work to level of education • Utilisation of different competences learned in the mid-career programme • The managerial responsibilities of the respondents • Changes observed in professional status • Remuneration and benefit packages • Influential job positions held by the respondents • Further training since graduation from the mid-career programme • Suggestions for improvement of the mid-career programme The evaluation studies such as the one in Ghana assess the increased competences of the extensionists trained by the safe programme, *interalia*: • programme implementation • programme planning • level of confidence and understanding in applying various job requirements programme	For reports see: http://www.safe-africa.net/Survey%20%26%20Review%20Reports.htm

			• Strengthening of universities' outreach programmes • Capacity of adaptation of research • Improved teaching methods • More diverse curriculum delivery mode • Improved field experience by faculty and extension staff.	

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