

Heifer-in-trust, Social Protection and Graduation: Conceptual Issues and Research Questions

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Introduction

The imagery of movement is deeply engrained in development discourse, and particularly in relation to poverty: we commonly talk, for example, of people moving 'out of poverty' or 'up the asset ladder'. Nevertheless, these simple images hide what are now widely understood to be complex, non-linear and dynamic processes that are impacted by a bewildering array of factors from human agency and policy to the structure of the global economy and natural disasters. It is within this context that the potential role and contribution of social protection to poverty reduction must be understood.

However, much social protection discourse and policy also articulate with images of movement through the concept of graduation. Again, the sense is of graduation as an orderly sequence of incremental steps – from a position of vulnerability where social protection is required, to one where it is not. The concept of graduation now sits at the heart of a number of large-scale social protection programmes in sub-Saharan Africa (SSA), of which the Ethiopian Productive Safety Net Programme (PSNP) is a prime example (Sabates-Wheeler and Devereux, 2011). Fundamental to most conceptions of graduation is the idea of progressive asset accumulation, giving rise to the notion of 'asset-based graduation'.

In this paper we look at a well-established genre of livestock projects through the lens of asset-based graduation. Specifically we ask what can be learned about social protection and graduation from the experience of projects built around the 'heifer-in-trust' or 'livestock-in-kind credit' model that specifically target poor people. What does graduation look like? Is there anything special about the 'asset-ness' of livestock in the context of social protection that either facilitates or constrains their contribution to graduation processes?

The next section provides a brief introduction to social protection with a particular focus on the links between social protection and agricultural development. Following this we review the concept of graduation as it relates to social protection. We then consider the characteristics of livestock as livelihood assets before looking in detail at heifer-in-trust projects as an example of social protection – what can these projects tell us about graduation? We end the paper with a discussion of the implications for further empirical work.

Social protection

Sabates-Wheeler and Devereux (2007) define social protection to include 'all initiatives that transfer income or assets to the poor, protect the vulnerable against livelihood risks, and enhance the social status and rights of the marginalised; with the overall objectives of extending the benefits of economic growth and reducing the economic or social vulnerability of poor, vulnerable and marginalised people' (p.25) (also see Ellis et al., 2009; Gentilini and Omamo, 2011). Here we are concerned specifically with social protection measures that have been classed as 'promotive' ('aim to enhance real incomes and capabilities...') and 'transformative' ('seek to address concerns of social justice and exclusion...') (Sabates-Wheeler and Devereux, 2007).

Given that the majority of the poor in Africa live in rural areas and are involved to some degree in agriculture

and/or livestock production, and acknowledging the strong arguments that agriculture provides the obvious route to broad-based, pro-poor growth, the links between social protection and agricultural growth have received some considerable attention (Farrington et al., 2004; Dorward et al., 2006; Dorward et al., 2009; Sabates-Wheeler et al., 2009; Sumberg and Sabates-Wheeler, 2011). Farrington et al. (2004) reviewed the potential complementarities between different social protection measures (i.e. cash transfers, subsidised or free food, subsidised or free inputs, employment generation and financial services) and agriculture. They concluded that while the scope for synergy between social protection and agriculture is limited, 'there is substantial unexploited scope for introducing the perspectives of the one into the design and implementation of the other, i.e. for giving aspects of SP [social protection] more of a growth-promoting dimension, and for designing agriculture initiatives in ways that aim to reduce risk and vulnerability' (p.v). Dorward et al. (2009) reviewed the links between social protection and agriculture in Malawi and highlight the complexity of these linkages and the large number of factors determining related outcomes. Reflecting this complexity they concluded that 'a mix of complementary social protection, agricultural and wider economic and institutional policies across different sectors are needed for effective promotion of short, medium and long term social protection, agricultural and non-agricultural development, and poverty reduction' (p.23). Similarly, Sumberg and Sabates-Wheeler (2011) were cautious about 'home-grown school feeding' which is now being widely promoted as a 'win-win' social protection and agricultural development model. The main conclusion that emerges from this literature is that while opportunities for complementarily exist, social protection measures should not be seen as an easy or direct route to agricultural development.

Graduation in social protection discourse and programmes

Sabates-Wheeler and Devereux (2011) provide a detailed review of the origins and theoretical underpinnings of the concept of graduation and how it is being operationalised in social protection programmes in SSA. Chirwa et al. (2011) explore the concept of graduation in the context of farm input subsidy programmes in Malawi. We will not cover this same ground here. What is important is that Sabates-Wheeler and Devereux argue that judging graduation simply on the basis of an individual or household having passing a specific threshold (e.g. number of months in a social protection programme; or the accumulation of a pre-defined level or array of assets) does not do justice to the complexity or the heterogeneity of livelihoods. Depending on the household, context and so on – what Chirwa et al. (2011) call 'the potential graduation conditions' – the fact of passing any such threshold may be quite unrelated to key livelihood outcomes such as improved food security or well-being.

As an alternative Sabates-Wheeler and Devereux argue for what they call 'sustainable graduation' defined as 'the ability of the household to remain above the benchmark in the medium- to long-term via a transformed livelihood'.

Here graduation is linked explicitly to the notion of 'promotive' and 'transformative' social protection measures – indeed in one sense graduation is the confirmation of a successful transformation. As opposed to passing a common threshold, sustainable graduation implies that there has been some fundamental and lasting change in a household or a livelihood. Perhaps the critical point here is the recognition that this kind of fundamental change – and the sustainability of the associated improved outcomes – may require changes other than simply an increase in specific assets. Thus, asset-based social protection may only be transformative where social, market and environmental conditions are conducive. Such a conception of graduation better reflects the dynamics of livelihood change. The difference between the threshold and sustainable graduation approaches can be seen along two dimensions. The first dimension is time, where livelihoods must have changed enough that they are resilient to moderate shocks, thus highlighting the 'sustainable' nature of the graduation. The second dimension is agency, with graduation being seen as either a passive ('she was graduated') or an active ('she graduated') process. In the first instance, once the beneficiary passes a given threshold, the programme declares that she has graduated; in the second, the graduation reflects real change in the beneficiary's livelihood (in effect she graduated herself with the help of the social protection programme).

Intriguingly Sabates-Wheeler and Devereux (2011) refer to assets in relation to individuals, households and communities, but provide little additional detail: the relationships between assets that are transferred, held and/or controlled at these various levels are never theorised or explored. How does where an asset sits (e.g. individual, household or community) affect its use (or the efficiency of its use), particularly when its transformative potential is realised only when it is combined with other assets? How might the web of asset use, ownership and control be affected by a social protection intervention and in turn affect graduation processes?

For example, the transfer of a dairy heifer to a poor woman may be necessary to get her established as a milk producer, but it is unlikely to be sufficient. She may need to negotiate access to other assets including land for grazing or feed production, timber and know-how for shed construction, and access to water, training, credit etc. Some of these negotiations will take place within her household, others within her larger kin group, producers' group or community. In any case, the specific conditions of access that she is able to negotiate may be less than optimal and thus have a material effect on the viability of the fledgling dairy enterprise. This may be especially so in situations where the additional assets she requires access to are particularly scarce and when the new enterprise threatens to upset established power relations.

Livestock as livelihoods assets

It is commonly said that domestic livestock, from poultry to camels, play a special role in African rural livelihoods (LID, 1999; Alary *et al.*, 2011). As livelihood assets livestock

can be a source of nutritious food and/or income (e.g. from the sale of milk, meat, eggs or young-stock) and capital growth (through increased body weight and reproduction). In areas where banking services and insurance are limited, the importance of livestock as a form of savings ('walking banks' or 'savings banks on the hoof') is often highlighted. In times of climatic stress in dry areas, sale of stock serves as a coping mechanism which helps smooth consumption (cf. Fafchamps *et al.*, 1998) and in the case of small-stock, protecting people's ability to recover as conditions improve by sparing their larger animals. In addition, the suggestion is commonly made that small-stock including poultry, goats and sheep are particularly important for women, even poor women, in that women frequently control decision-making over their disposal, the animals may be kept within the domestic sphere, and they are less valuable financially so do not attract the attention of men (Kryger *et al.*, 2008; Okali, 2011). Small-stock can be quickly and easily turned into cash (in contrast, large-stock such as cattle and camels are often described as 'lumpy' assets). Thinking along these lines has resulted in small-stock being central to many women's economic empowerment and asset-building projects (de Haan, 2001; Peacock, 2005). On the other hand, small-stock might be seen as a risky asset for women since they are likely to be the first animals to be sold when a household comes under stress. Beyond economics and gender dynamics, livestock can play critically important roles in identity, social dynamics and culture.

The consideration of livestock as a livelihood asset becomes more complicated when the category 'livestock' is broken down into particular species, age and sex combinations. These combinations determine the type and time-frame of potential benefit flows (immature animals may not produce any benefits for several years; a male animal on its own will not reproduce; shorter gestation periods and multiple births drive different growth dynamics across species).

Further, to realise these potential benefits animals must have access to feed and water; they may require land, housing, tending, breeding and veterinary services; and there must be functional markets for sales and re-stocking. In other words – and again depending on the species and management system – the benefits associated with livestock as a livelihood asset may require significant outlays (of labour, other resources and/or cash) and management skills. Morbidity and mortality are two factors that can greatly reduce the actual benefits derived from owning livestock. In some situations small-stock may be valued precisely because they place lesser demands on land and labour.

As our interest is in livestock in relation to models of graduation from a position where social protection is required to assure e.g. food security, a closer analysis of the savings and capital growth functions is warranted. The story of livestock as a savings mechanism has two parts. The first, which is far and away the most common, portrays livestock as a store or stock of savings, similar to a simple savings account. New animals represent deposits; growth is the earned interest; and the consumption, sale or death of animals represent the withdrawals. In areas without reliable and accessible banking services

the value of this savings function is beyond doubt; on the other hand, in some situations these 'walking banks' have been associated with what some have interpreted as less than optimal stocking levels (a large number of animals in relatively poor condition) and low off-take rates.

The second element of the story stresses flows of savings as opposed to stocks. The fact that livestock require continual investment in the form of feed and care over some considerable time before production or reproduction takes place (depending on species, production system etc) means that livestock ownership can be seen as a kind of daily, forced savings scheme. However, nothing is guaranteed: the moment the daily deposits stop, the value of the accumulated savings pot is at risk. Age, disease and market conditions can also affect the value of the accumulated savings; death can quickly reduce it to zero.

What, if anything, is special about the 'asset-ness' of livestock? First they are living organisms with an inherent growth dynamic but at the same time, a limited life span. In this way they are more akin to assets like economic trees than a bar of gold bullion. Second, as discussed above, livestock require continual investment – at one level for maintenance and at a higher level to support growth, production and/or re-production. Again the analogy with economic trees seems apt, but an asset like a piece of machinery may also need periodic maintenance and upgrading. Third, unlike economic trees, livestock are mobile and can be lost or stolen. Fourth, some livestock have additional value when they are in combination with others: two oxen may be needed for ploughing; a ram increases the value of a ewe in that both are required for reproduction. Here there is a useful analogy with machinery, where having the right combination of different machines increases the value of each individual machine. Fifth, there are significant global health concerns associated with the cross-border movement of livestock and livestock products: 'interests' in livestock assets can go beyond those of individuals or households, and sometimes to the detriment of the poor (e.g. the case of Swine Fever in Haiti and/or Avian Flu in Asia). This is not the case with either trees or machinery. Sixth, small-stock such as sheep and goats can be an invaluable social asset for the poor as they allow them to participate in social events (like religious and birth ceremonies) that demonstrate membership and belonging. Finally, there may be significant social and psychological relationships among livestock and between livestock and people that would not develop with other kinds of assets.

Much that is written about social protection and graduation assumes that assets can be denominated by cash, so the emphasis is on the scale and size of the transfer rather than the nature or type of the asset being transferred. Our argument is that with livestock assets, nature or type is all important. Poultry are not small goats, and goats are not small cattle. Despite the long tradition of reducing a camel, a head of cattle, a sheep and a goat into 1.0, 0.7, 0.1 and 0.1 'Tropical Livestock Unit' (TLUs) respectively, in terms of their asset-ness and their potential role in graduation processes, the differences between these are far more than quantitative.

Heifer-in-trust as social protection

In this section we introduce the heifer-in-trust model which has been widely used by NGOs and others as a basis for poverty focused livestock interventions. It is important to note that in the main projects based on this model were (are) not described in terms of 'social protection'; similarly, they made (make) no explicit reference to graduation. Nevertheless, as will become clear these projects have much in common with what are now understood as social protection interventions, and the idea of flock or herd growth has a particular resonance with the notion of graduation.

Heifer-in-trust projects

We use the term heifer-in-trust (also referred to as 'livestock-in-kind credit') to refer to a whole genre of projects that aim primarily at building-up the productive asset base of poor people. While there are many variations, heifer-in-trust projects are essentially rotating, in-kind loan schemes based on in-kind repayment. Typically a project will transfer one or more female animals to someone on the understanding that over time a specified number of female offspring will be returned to the project so they can be passed on to other beneficiaries (this is sometimes referred to as 'the pass on system'). Until the repayments are complete the original animals are 'owned' by the project 'in trust' for the beneficiaries and after repayment they become the property of the beneficiaries to do with as they please. Similar to other micro-credit models, many heifer-in-trust projects are designed to work through groups and therefore have additional group formation and empowerment objectives.³

The heifer-in-trust projects implemented by NGOs and others across Africa differ along six important dimensions:

- **Targeting and selection of beneficiaries:** definition and identification of 'poor'; minimum requirements in terms of availability or establishment of a suitable shed and fodder supply; prior knowledge or experience with livestock
 - **Species:** poultry (chickens and ducks), goats, sheep and cattle
 - **Number loaned:** 1–3 depending on species (e.g. seldom more than one for cattle)
 - **Number to be repaid:** 1–3 depending on species
 - **Actions if loaned animal dies before repayment:** variable, but usually no attempt to force repayment
 - **Additional services available through project:** credit, technical training, group support, marketing
- Some of these dimensions have important implications for the ability of heifer-in-trust projects to deliver social protection benefits, and perhaps none more so than the choice of species. Three chicks that are allowed to wonder around the compound freely, are occasional fed kitchen scraps but provided with little other 'management' is a very different proposition from a dairy heifer kept permanently in a stall and which, when mature, will require considerable quantities of water, fodder and purchased concentrate feed, in addition to daily milking and careful management of breeding and health. Clearly the heifer is potentially the more valuable asset, having

the ability to produce a significant income stream. However, the physical, financial and management inputs required in order to realise these benefits are such that they may be beyond the grasp of those most in need of social protection. A heifer (or indeed a pair of dairy goats) placed in the wrong environment or with individuals who do not have the means to support, may be more of a liability than an asset.

The fact that heifer-in-trust projects are built around a model of rotating, in-kind loans has been used to justify claims of sustainability. If substantiated through project experience, these claims have important implications as they would help dispel the sense that social protection programmes must be, by their very nature, a continuous burden on either government or donor funds. The sustainability of any rotating loan scheme is sensitive to the balance between the interest charged and the default rate. The case of heifer-in-trust is however somewhat more complicated. As shown by Afifi-Affat (1998) the critical variables in the schemes are: the number of animals repaid per animal received (in effect the interest rate); the survival rates of adult animals and their offspring; and the reproductive performance of the adults. With inexperienced livestock keepers, morbidity and mortality would be expected to be high and reproductive performance low. Based on a simple modelling exercise Afifi-Affat demonstrated that for schemes involving cattle, if repayment of only one calf is required they are unlikely to be sustainable at the scheme level; but if the repayment requirement increases to two, sustainability at the participant level is unlikely. However, insurance arrangements could potentially be used to overcome these problems.

Case study 1: Dairy goats in Kenya and Ethiopia

The NGO Farm-Africa has been involved in small-scale goat development in East Africa since 1988, and this work provides one of the best documented examples of the use of the heifer-in-trust approach (or what Farm-Africa refer to as 'goat credit') (Ayele and Peacock, 2003; Ahuya *et al.*, 2005; Peacock, 2005; Dennis *et al.*, 2008; Peacock, 2008; Peacock and Sherman, 2010).

While the term social protection is not used in relation to this work, the objectives – asset building, improved nutrition, increased income – resonate strongly with social protection discourse, as do the stated target groups: 'particularly vulnerable households', 'the poorest of the poor', 'those affected by HIV/AIDS' and 'households headed by women' (Peacock, 2008).

The approach has evolved over the years and more recently was formalised into a nine step 'Goat Model' (Peacock, 2008). Goat credit is only one (optional) element of the model, with other components including group formation and development, training (of implementers and beneficiaries), community-based animal health and breed improvement. In some locations beneficiaries have had access to a micro-credit fund and were helped to start e.g. back-yard poultry enterprises (Ayele and Peacock, 2003).

In Ethiopia the goat credit component involved giving two female goats to selected women who were then expected to return two kids (Peacock, 2005). Ayele and

Peacock (2003) suggest 'it is not uncommon to see 100% of such repayments made within 2 years' (as a result, in part, of 'peer pressure'); while Peacock (2005) asserts that these kinds of schemes 'can be self-administered by even illiterate people and the revolving fund managed in this way is "inflation-proof" and can increase and multiply benefits very widely with repaid stock lent to new members'.

In terms of impact, some quite dramatic claims are made. Ayele and Peacock (2003) report increased milk consumption, income generation, investment in productivity enhancing crop technology, higher crop yields, asset creation and 'up to 20% of the households have moved into ownership of cattle, generally cows'. Even more impressive is the claim that participating farmers experienced approximately a 10-fold increase in both annual income (from \$93 to \$995) and the value of goat assets (from \$156 to \$918) (Peacock, 2008, citing Laker and Omore (2004)).⁴ One constraint to the up-scaling of these efforts is the 'misplaced disease concerns' on the part of some African governments which have stopped the importation of European breeding stock which is central to breed improvement efforts (Peacock and Sherman, 2010).

Case study 2: Dairy cattle in Tanzania⁵

Since 1973 the heifer-in-trust approach has also been used by churches, NGOs and government in an effort to develop the small-holder dairy sector in Tanzania. The target group is variously described as 'those who could not afford to purchase a heifer on their own' (Rugambwa *et al.*, 1995), 'low income farmers' (Mkenda-Mugittu, 2003) and 'resource-poor farmers, especially women' (Kurwijila, 2001); with the objectives of protecting and increasing income, alleviating malnutrition and poverty and creating and/or strengthening self-reliant grassroots farmers' groups (Kabumbuli and Phelan, 2003).

As the feed, water and management requirements for even a single dairy cow can be substantial, prerequisites or conditions for participation are common. These may include undergoing a capability assessment, the preparation of a zero grazing unit (shed plus covered compost pit), planting a specified area of fodder, training and agreeing to keep records (Kurwijila, 2001; Kabumbuli and Phelan, 2003; Bayer and Kapunda, 2006). Kabumbuli and Phelan (2003) suggest that these conditions can lead to discrimination against the poorest; nevertheless, without them the project would be bound to fail. In any case, the poorest can benefit 'from increased employment opportunities in the area and from the increased availability of a very good nutrition source, i.e. milk'. Others have suggested that where land and fodder are abundant 'able-bodied poor people' can easily enter into the dairy business through these schemes (Bayer and Kapunda, 2006).

Projects have generally provided one or two pregnant cross-bred heifers to farmers on the understanding that either one or two in-calf (i.e. pregnant) heifers must be returned for each original animal (Rugambwa *et al.*, 1995; Bayer and Kapunda, 2006). Some projects have passed one of the repaid heifers to another farmer with the second being sold by the project to cover expenses. Because of the value of the cattle and the level of

management required, most projects have provided technical assistance and continuous monitoring, which might cost as much as 40% of what the producers receive for their milk (Rutamu and Munster, 1998, cited by Kurwijila 2001).

Repayment rates have been variable and generally low. In one experience in Kagera region 32 heifers were passed on from 56 original animals, with an overall repayment rate of 44%; in another 244 heifers were passed-on from 1,286 original animals, with an overall repayment rate of 21% (Houterman et al., 1993). Houterman et al. (1993) concluded that the pass-on system was slow and estimated that it took approximately 10 years to produce 100 pass-on pregnant heifers from 100 credit (HIT) heifers'. Data for the period 1980 – 1992 from Kagera and Tanga regions was summarised by Kurwijila (2001): 1,463 farmers received a total of 1,593 heifers, 80 of which died or were stolen or slaughtered and 21 were withdrawn. In total, 205 pass-on heifers were either produced or paid (13% of the total originally lent). Nevertheless he concluded that a repayment (pass-on) rate of 60–70% can be achieved with good monitoring.

According to Bayer and Kapunda (2006) the impacts on participating households can be 'spectacular'. After 3–6 years some families that had previously been on the edge of survival were considered wealthy; some improved their houses; increased their cropped area; dug wells; purchased additional dairy cattle; and sent their children to secondary school. Other reported impacts include improved relationships between husbands and wives; strengthened economic and political role of women; and creation of jobs for poorer people. Strong farmer groups and nearness to markets were identified as keys to success.

Despite these claims of success, a number of concerns have been raised. Kabumbuli and Phelan (2003) suggest that the farmers who benefited from these schemes tend to be better educated, have more land and have a higher tendency to send children to school. In other words, there would seem to be a contradiction between the stated objectives of helping the poorest and the characteristics of the actual participants. On the other hand, because of the demands of a dairy cow it is clear that dairying, even at a very small scale, it may not be an appropriate enterprise for those with very limited resources.⁶ The gender strategies and impacts of the various heifer-in-trust dairy programmes in Tanzania have received some attention (Okali, 2011). Some programmes specifically targeted women as recipients of animals in an effort to

become more 'gender sensitive' and address gender equity concerns, although women recipients never seem to have been more than 20 percent. In any case, this strategy may have been flawed because many poor women do not have access to the land and other resources required. In addition, transforming a concern about gender into a focus on women takes no account of the complexity and flexibility of household and wider (gendered) social relations, and how these play out around potentially valuable interventions such as heifer-in-trust for particular women, men and other family members.

Other issues include poor access to milk markets, the cost of veterinary services, ineffective artificial insemination and limited availability of feed and water (Kabumbuli and Phelan, 2003), leading Bebe (2008) to conclude that these schemes were 'unsustainable for farmers and for projects'.

Heifer-in-trust and graduation

Here we use 'to graduate' as an active verb so that graduation from social protection (1) is to a significant degree a function of the action and agency of the beneficiaries of social protection measures – i.e. they graduate themselves through their own actions aided by social protection intervention; (2) involves dynamics that are specific to particular contexts and individual and household circumstances; and (3) reflects a transformation such that social protection measures are no longer required in order to assure that food security and other livelihood needs are met despite the normal vagaries of the environment, markets, health and so on.

In theory, heifer-in-trust programmes can promote this type of graduation by providing benefit streams including nutritious food, income and asset growth. However, different livestock species, management systems and project contexts will produce different benefit possibilities over different time frames. For example, small-stock including some breeds of goats and sheep will not produce a constant source of income or nutrition in the form of milk.

In general we can surmise that:

- the poorer or more vulnerable the beneficiary, the deeper and more sustained the social protection intervention will need to be in order to contribute to graduation;
- the more sophisticated, management intensive, market-linked or large-scale the intervention, the more

Table 1. Requirements and risks associated with different social protection interventions.

Type of SP intervention	Requirements	Risks
Cash transfer	Access to markets in which to purchase desired goods / services and/or a secure savings mechanism	Loss, theft, dispersion
Subsidised fertiliser	Land, labour, seed, market access (if not for own consumption)	Weather, crop pests, low market price
Heifer-in-trust	Depending on species: feed, water, labour, veterinary services, breeding services, training, peer group, market access (if not for consumption)	Morbidity, mortality, theft, poor reproductive performance, weather, low market price

- important accompanying measures (training, credit etc) and close monitoring will be;
- the longer the period before meaningful benefits begin to appear, the more difficult it will be for poor people to use the intervention for successful graduation;
 - the less that the financial demands and risks associated with the intervention are offset by accompanying activities (training, monitoring, micro-credit, insurance), the more difficult it will be for poor people to use the intervention for successful graduation
- Thus in any situation where project resources are constrained there is a set of trade-offs between the transformative potential of the intervention, the type and level

of accompanying measures required to assure success and the number of potential beneficiaries.

Taken at face value the reported impacts of the Farm-Africa goat model – including increased investment in productivity enhancing crop technology and asset creation – seem to point to what could be considered graduation. However, a much closer analysis of the initial circumstances of the participants, the distribution of these positive outcomes and the costs associated with the accompanying measures and close monitoring is certainly warranted.

How is the graduation story via heifer-in-trust different from those of graduation via cash transfers or subsidised fertiliser? For one thing, what is required in order to get

Table 2. Contrainers, enablers and sustainers of graduation in relation to heifer-in-trust interventions.

Constrainer	Enabler	Sustainer
Programme-specific		
Low repayment rates	Peer pressure	Profitability of livestock activity
High cost of contact	Group formation / strengthening	
Livestock morbidity	Access to veterinary services	Profitability of livestock activity
Limited genetic potential of stock	Systematic upgrading programme Access to AI services	Profitability of livestock activity
Poor reproductive performance	Training Access to AI services	Profitability of livestock activity
Theft / death	Insurance	Profitability of livestock activity
Emergency sales	Micro-credit	Profitability of livestock activity
Beneficiary-specific		
Lack of interest / motivation	Interest / motivation as selection criteria	Consistent & attractive flow of benefits
Lack of knowledge / skill in stock management / marketing	Training	
Limited quantity and/or quality of feed / water	Adequate availability as selection criteria Micro-credit	Profitability of livestock activity
Limited cash to purchase inputs	Adequate cash as selection criteria Micro-credit Savings schemes	Consistent profitability of livestock activity
Appropriation of income / assets by other household members	Peer / social pressure Education	Empowerment
Market-specific		
Low prices or thin markets for animals & livestock products	Access to larger markets Value added	Urbanisation, rising incomes & changing consumption patterns
Environment-specific		
Seasonal variation in feed/water availability	Year-round availability as a selection criteria Irrigation development Well / borehole / dam development	Profitability of livestock activity

value from each is different, as are the risks (Table 1). It seems clear that a successful livestock intervention – particularly if it involves dairy goats or cattle – has significantly more, and more complex requirements, and is subject to a wider array of risks. Of course it is also about the respective values of the cash transfer, fertiliser subsidy or livestock: but on a pound for pound basis is one of these a better graduation investment than the others?

Sabates-Wheeler and Devereux (2011) develop an analysis of 'enablers' and 'constrainters' of asset-based graduation, highlighting the market context; local and household initial conditions; scale and coverage of transfers; household-level incentives and dependency; and environmental conditions. Here we build on their approach by identifying four categories of constrainters, enablers and sustainers to graduation in relation to heifer-in-trust interventions: programme-specific, beneficiary-specific, market-specific and environment-specific (Table 2). Constrainters are the problems or issues that heifer-in-trust programmes regularly confront and that, if not dealt with effectively, limit programme impact; enablers are the common programme responses to these constrainters; while sustainers have the potential to sustain changes brought about by enablers. It is important to stress that depending on species, management system, context etc, some of these constrainters, enablers and sustainers will be more important than others. Nevertheless, the importance of profitability as a sustainer cuts across all livestock activities with transformative potential.

Conclusions and implications for empirical work

From this review we conclude that *in principle* the heifer-in-trust approach has considerable potential as a promotive social protection measure. We also conclude that the asset-ness of livestock may *in principle* allow them to make a unique contribution to a dynamic of livelihood transformation that in turn allows beneficiaries to graduate themselves from a position of requiring social protection.

These general conclusions must however be heavily qualified, as the actual outcomes associated with heifer-in-trust programmes are dependent on a wide array of considerations ranging from beneficiary selection criteria, through the livestock species and breeds distributed, to local environmental and market conditions. Perhaps most problematic is the fact that one

characteristic of the asset-ness of livestock – that they are alive, growing and reproducing – creates significant and continual demands for feed, water, management and veterinary services, and implies significant risk associated with morbidity and mortality. While some heifer-in-trust programmes create mechanisms to reduce initial costs and mitigate risk, there appears to be a fundamental tension between the conditions and circumstances associated with a need for promotive social protection measures on the one hand, and the requirements for successful – livelihood transforming – livestock production on the other. In other words, while livestock may have great potential to transform livelihoods, it is the most obvious target group for promotive social protection measures that is least likely to be in a position to handle the demands and risks associated with livestock assets.

On the basis of this analysis a number of empirical questions merit further investigation:

1. What is the evidence that heifer-in-trust programmes have allowed people in need of social protection to transform their livelihoods on a sustainable basis – to graduate?
2. What combinations of programme characteristics, targeting strategies and contexts are associated with evidence of sustainable graduation through heifer-in-trust?
3. What individual, intra-household and inter-household dynamics are associated with evidence of sustainable graduation through heifer-in-trust? When is sustainable graduation a group or community affair?
4. What are the implications for our thinking about asset-based livelihood transformation when assets that need to be worked together are transferred, held or controlled by different people, households or groups?

Finally, when analysing the operation and impacts of heifer-in-trust programmes from a graduation perspective it will be important to be mindful of both positive and negative unintended consequences. On the positive side, the income and capital growth associated with successful livestock production might be used to invest in new or innovative economic activities, or in ways that are not obviously 'productive' but nevertheless transformative. On the negative side, closer association with livestock may result in increased risk, both financial (e.g. from an epidemic) and health-related (e.g. from zoonotic diseases).

End Notes

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³ A group-based variant is the so-called 'livestock bank' (Begg and Santos, 2010).

⁴ We note that Laker and Omore (2004) provide no data which supports this claim.

⁵ This review does not take account of unpublished project evaluations etc.

⁶ This same argument can be made for any intensive livestock production activity – see Sumberg (1998) and Nymarunda and Sumberg (1998) in relation to poultry and dairy respectively.

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