Assets, 'Asset-ness' and Graduation

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Abstract Asset-based approaches – usually involving asset transfers and/or asset building – are increasingly central to thinking about poverty alleviation, social protection, graduation and livelihood resilience. Although the notion of assets is well established in the literature, the meanings of and relationships between asset(s), livelihood capital(s), risks(s), welfare and wellbeing, and graduation need further analysis. We examine issues arising from asset-based approaches to poverty reduction and introduce the idea of 'asset-ness' – the qualities and characteristics of different assets – which have received little attention from those promoting or designing asset-based social protection programmes. We argue that asset-ness provides a key to understanding differences in the impacts of asset-based social protection and associated processes and dynamics of graduation. As such the article aims to advance understanding of graduation theory. We develop this argument with reference to domestic livestock, which are commonly distributed to poor people as part of asset-based poverty alleviation and social protection programmes.

1 Introduction

What is poverty, and how can the incidence of poverty be reduced? These two questions have been at the core of development studies for over six decades. But while the questions may have remained the same, the answers have evolved quite significantly. Concepts, definitions, methods and interventions that were once at the heart of the debate have given way to new orthodoxies. Social protection and graduation are key elements of today's orthodoxy about poverty and poverty reduction, as is the notion of assets. Indeed, in 2015 it is almost inconceivable that development-oriented social policy, or a national poverty reduction strategy or plan, would not put assets and asset-building at centre stage.

This article is about the 'turn to assets' and its implications for both theory and practice around social protection and graduation. We argue that the level of enthusiasm for assets and asset-based approaches to poverty reduction has not yet been matched by more nuanced analyses of the qualities and characteristics of different assets, or what we refer to as their 'asset-ness'. Yet, there is reason to think that these qualities and characteristics provide a key to understanding observed differences in the expected and actual impacts of asset-based social protection, and the complex dynamics of graduation.

Specifically, we argue that the literature that brings together concerns about poverty, assets and asset-based development has generally used a set of broad categories to group together what are essentially different assets (e.g. as financial, physical, natural, human and social assets) (Scoones 1998). There has been little recognition that assets within these categories can be very heterogeneous. Further, there has been little acknowledgement of the subjective and contingent nature of assets; and specifically the idea that the 'value' (desirability of, usefulness of, and income that can potentially be derived from) an individual asset, as perceived by its actual or potential 'owner' or 'user', reflects: (1) the asset's attributes (its asset-ness); (2) the individual's goals, preferences, interests, skills and access to other assets; and (3) the context within which the individual lives and hopes to deploy the asset.

We suggest that the implications of such a contextualised understanding of assets are particularly important for programmes that seek to provide social protection through the transfer of a single type of asset (e.g. cash or a cow). Specifically, we hypothesise that as the costs associated with holding and/or managing the asset increase, with increasing variation in recipients' goals, preferences, interests, skills and access to other assets, and increasing

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variation in the contexts within which the recipients live and will need to deploy the asset, the likelihood of the transfer not resulting in the desired outcome also increases.

The article proceeds as follows. In the next section we put the turn to assets in historical perspective, and explore its links to asset-based community development, livelihood approaches, poverty transitions and social protection. Following this we develop the notion of asset-ness, using domestic livestock as an example of a particular type of asset that has been central to many asset transfer programmes. Some examples from relevant empirical studies will be presented to illustrate the notion of asset-ness. Finally, the article ends with a discussion of the implications of taking asset-ness seriously for social protection and graduation.

2 The turn to assets

This section briefly reviews the background to and history of asset-based approaches to development, and the increasing importance given to assets in thinking about poverty alleviation, poverty transitions, social protection and graduation. The beginning of the turn to assets can be traced to the (late) 1980s, and reflects a growing appreciation of the multi-faceted nature of poverty and a concomitant dissatisfaction with income and consumption measures of poverty. Sen provided the intellectual underpinnings for a broader understanding of poverty through his emphasis on 'functional capabilities' and their relation to wellbeing (Sen 1985: 104).

In the USA, Sherraden (1991) proposed a theory of social welfare based on assets and asset accumulation. The argument is that 'assets might yield positive welfare effects that income alone does not provide' (Sherraden 1990: 598). Sherraden argues that these positive welfare effects arise because assets provide stability; create an orientation towards the future; stimulate the development of human capital and the maintenance and development of existing financial assets and real property; enable focus and specialisation; provide a foundation for risk-taking; and increase personal efficacy, social power, political participation and the welfare of offspring. Thinking along these lines provided the rationale for policy initiatives such as 'Individual Development Accounts' and 'Child Trust Funds' (Page-Adams and Sherraden 1997; Gregory and Drakeford 2006; Finlayson 2008).

Sherraden's work and the language of capabilities were fundamental to asset-based community development approaches that emerged out of the experience in urban communities in the USA and Canada. Thus, Kretzmann and McKnight (1993) contrasted approaches that focus on 'a community's needs, deficiencies and problems' with one that 'insists on beginning with a clear commitment to discovering a community's capacities and assets' (*ibid*.: 1). Kretzmann and McKnight concluded that such an asset-based approach must necessarily be both internally focused, i.e. concentrating on 'agenda building and problem-solving capacities of local residents, local associations and local institutions', and relationship driven (*ibid*.: 8).

Assets, and particularly asset accumulation, also appear as part of what was called the 'new poverty agenda' (Lipton and Maxwell 1992). Lipton and Maxwell suggest that a principle of the new approach to poverty and development championed by the World Bank and UN agencies in the late 1980s and early 1990s was 'labour intensive economic growth, designed specifically to increase the assets, employment and incomes of the poor' (*ibid*.: 7). We can thus see links to both Sherraden and the ethos of asset-based community development outlined above, in that labour-intensive economic growth 'promotes the use of the poor's most abundant asset – labour' (World Bank 1990: 30). The irony is that while Kretzmann and McKnight contrasted deficit or needs-based approaches with 'asset-based' approaches, as assets became more central to the poverty agenda within international development, the framing again reverted to a deficit approach – i.e. the fact that poor people had either insufficient assets or sub-optimal combinations of assets. The World Bank, the Ford Foundation and the Brookings Institute all identified household assets as important for social risk management and key drivers of sustainable growth and poverty reduction (Siegel and Alwang 1999: 67; Siegel 2005). Moser's 'asset vulnerability framework' (Moser 1998) was particularly influential, and continues to guide thinking about assets and poverty (Moser 2008; Moser and Stein 2011: 49). The core is the relationship between income, production, assets and poverty transitions. Moser summed up the story:

> Vulnerability is therefore closely linked to asset ownership. The more assets people have, the less vulnerable they are, and the greater the erosion of people's assets, the greater their insecurity […] the more assets people command in the *right mix*, the greater their capacity to buffer themselves against external shocks [author's emphasis] (Moser 1998: 3, 16).

Over this same period the sustainable rural livelihoods framework came to prominence (Scoones 1998) with the so-called 'asset pentagon' sitting at the centre of the version widely disseminated by the Department for International Development (UK) and others (Carney 1998). Grouped under the headings natural, financial, physical, social and human, and variously referred to as capitals, assets or capital assets, this framework stimulated countless efforts to inventorise and value households' livelihood assets, and to trace asset dynamics, the substitutability of various assets, and the role of assets in buffering against shocks. Scoones suggests that 'the focus on the "asset pentagon" and the use of the "capitals" metaphor was an unfortunate diversion' because it moved attention away from issues such as institutions, governance and power (Scoones 2009: 178).

A final dimension of the turn to assets is represented by the growing body of work that links assets and asset dynamics to poverty traps and poverty transitions (Carter and Barrett 2006). This work provides probably the best articulated theoretical basis for investment in 'asset-building' to support successful poverty transitions. The basic idea is that it is possible to identify both static and dynamic asset poverty lines: 'Households whose assets place them above that threshold would be expected to escape poverty over time, while those below would not' (*ibid*.: 190). Those households that are below the asset poverty line experience persistent or structural poverty and can be considered to be caught in a poverty trap. The problem of valuing tangible and non-tangible assets is acknowledged. In recent work, Lang and colleagues address the problem that the relative value of assets will differ in different geographical areas, and suggest that 'inter-asset comparisons of expected marginal benefits can be made for each region and linked to spatially-explicit poverty estimates' (Lang, Barrett and Naschold 2013: 233).

We suggest that a major limitation of much of the literature on assets, from asset indices (Moser and Felton 2007: 20) and the sustainable livelihoods asset pentagon, to asset poverty lines, is the focus on household welfare in relation to the aggregate (money) value of a household's asset holdings. Even Lang *et al.*'s more spatially differentiated approach still assumes that the expected marginal benefit is the same for all households within a given spatial unit. In other words, the drive to aggregate and compare negates the reality of individual or household variation in how the same assets may be valued. It is important to note that despite the growing interest in assets and asset-based approaches to poverty reduction, experience with and understanding of asset-based programmes are still limited (Desai 2007: 60).

3 Assets and asset-ness

What is an asset? More importantly, what distinguishes one asset from another? While the first question has been addressed relatively well in the literature, the latter still looms large in social theory and in the political arena (Shapiro and Wolff 2001). In the broadest sense, an asset is something of value. Thus a plot of land, a plough, a cow or a house may be an asset, and also one's good reputation, education, a friendship, or even a disputed claim (e.g. to a plot of land). Assets are often conceived of as a 'stock' from which a 'flow' of benefit is (or can potentially be) derived. While in some cases a single asset on its own may be sufficient to generate a flow of benefits, it is more common that benefits arise from combining several assets of different types. Thus different assets – seeds, land, labour and skill – need to be brought together to produce a crop.

Assets are described and categorised in many different ways:

- **By form:** tangible (e.g. real property) and intangible (e.g. a claim);
- **By type:** physical (e.g. tools), natural (e.g. water, biodiversity), financial (e.g. savings), human (e.g. health, education, skills), social (e.g. relationships, networks);
- **By accessibility:** current (e.g. cash), deferred (e.g. insurance) and fixed (e.g. land);
- **By fungibility:** liquid (e.g. cash) or illiquid (e.g. an insurance policy);
- **By nexus of access or use:** individual, household, family, or community;

- **By productivity or reproductivity:** performing (e.g. fruit-yielding trees) and non-performing (e.g. livestock in gestation).

Assets have attributes and these attributes are important in determining how they are valued by different people in different situations. Dorward *et al.* (2001) identified eight key attributes of livelihood assets, as follows:

- **Productivity:** production or income activities and processes associated with employing an asset to generate resources for consumption and social reproduction;
- **Utility:** the individual, social and demographic wellbeing (health, nutrition, shelter, clothing, independence, status, dignity, security, leisure, education, friendship, etc.) derived from the use of an asset;
- **Security:** risk of theft, loss of control or access, susceptibility to pathogens or other risks;
- **Holding costs:** the costs associated with holding or maintaining an asset;
- **Life:** costs associated with acquiring or disposing of the asset; expected period over which the asset is held; seasonal and lifecycle effects on an asset's value;
- **Convertibility:** costs involved in converting or exchanging an asset;
- **Complementarity:** effects on and of other assets (e.g. a plough without a bullock will be of little value);
- **Ownership/control:** private (individual/household); communal; public; gendered rights and responsibilities for disposal, acquisition, costs and returns.

Dorward *et al.* suggest that there are real challenges with objective measures of even the more seemingly straightforward of these attributes – for example productivity, utility and security – particularly in the context of risk and uncertainty. Thus, an understanding of the variability around 'normal' values and the probability of different conditions affecting this variability is important. However, the idea that there are 'normal' values for these attributes is itself problematic. With an asset like livestock, for example, both the 'normal' value and the degree of variation around it will shift – and potentially very significantly – depending on the choice of management system and the context. In other words, even for a given asset there is nothing intrinsic about these 'normal' values.

While implied in Dorward *et al.*'s analysis, the social relations around assets are critically important and need to be made explicit. For example, a plantation, plot of land or animal that was inherited or received as a gift may be used, managed and valued differently than an otherwise equivalent plantation, plot or animal that was purchased through the market. This is one of the basic premises of the now extensive literature on the 'social life of things' (Appadurai 1986; van Binsbergen and Geschiere 2005). Assets are clearly more than a simple economic proposition; on the one hand, the suggestion is that the creation and use of things are embedded in social relations; and on the other hand, we have Sherraden's argument that the mere fact of having assets increases social power, political participation and so forth.

We argue that the experience and/or implications of owning or using a particular asset are linked to, but at the same time go far beyond, the sum of the individual attributes identified above. We refer to this more integrated quality of assets as their *asset-ness*. Perhaps the easiest way to understand asset-ness is with an analogy to food. While we can describe an individual food item in relation to a number of specific attributes or qualities – for example, texture, mouth feel, colour, aroma, and saltiness – these descriptions may tell us little about the experience of actually eating that food item. Yes, the attributes contribute to the eating experience, but they can interact in ways that are complex, unexpected and unpredictable, and that cannot be captured with reference only to the individual attributes.

As we have seen, an asset can be described in terms of a number of individual attributes, but it is the integration and interaction of these attributes that help determine the asset's perceived value and the experience and implications of owning or using it. It follows that the notion of assets, and the perceived value of a particular asset, are contingent, subjective and context-sensitive. Specifically, the value (desirability of, usefulness of, and income that can potentially be derived from) of an individual asset, as perceived by its actual or potential 'owner' or 'user', reflects: (1) the asset's asset-ness; (2) the individual's goals, preferences, interests, skills and access to other assets; and (3) the context within which the individual functions and hopes to deploy

Table 1 **Attributes of some different types of livestock**

Attribute	Poultry	Small ruminants (sheep and goats)	Large animals (cattle, camels)
Productivity	Depending on management, feed, etc.	Depending on sex, breed, management, feed, etc.	Depending on sex, breed, management, feed, water, etc.
Utility	Depending on preferences for eggs, poultry meat, cash, etc.	Depending on preferences for meat, wool, cash, etc.	Depending on preferences for draft power, milk, meat, hide, cash, etc.
Security	High risk of mortality, especially Newcastle disease	High risk of reduced productivity or loss associated with disease; theft in some situations	High risk of reduced productivity or loss associated with disease; theft in some situations
Holding costs	Low per unit; with low management, free roamng approach near zero	Low to high per unit depending on management (e.g. if free roaming may be near zero)	Relatively high per unit depending on breed, management and feed supply
Life	Low cost to acquire; may be held a few months to a few years; seasonal and lifecycle effects dependent on management and feeding	[Intermediate]	Cost to acquire can be significant; may be held for several years; seasonal and lifecycle effects dependent on management, reproduction and feeding
Convertibility	Small units, easily convertible; but of little value	Easily convertible	Large units, conversion may be difficult or undesirable; 'lumpy'
Complementarity		Productivity of a female animal dependent on access to male or artificial insemination	Productivity of a female animal dependent on access to male or artificial insemination; Access to appropriate equipment (plough, cart, etc.) may be needed to realise full potential
Ownership/control	Individual; few restrictions	Individual; few restrictions	Individual; may be more gendered restrictions
Social relations	Probably of little significance	[Intermediate]	May be significant, e.g. animals passed on from relatives; acquired as gifts or through loan arrangements

Adapted from Dorward *et al.* (2001) and Sumberg and Lankoande (2013).

the asset. At the extreme, nothing – perhaps other than good health – should be seen intrinsically and exclusively as an asset, i.e. which is valuable to and valued by everyone in all contexts. Indeed, as we will see in the next section, something that may be a valuable asset to some people in some situations, may be a crippling liability to others. To particular individuals in particular situations, an asset's value is determined as much by power and political relations, historical legacies, and the local institutional context as by cost, risk and return considerations (Shapiro and Wolff 2001: 14).

4 The attributes and asset-ness of livestock

The claim is often made that livestock are a particularly important asset for poor people, especially women, and can (and should therefore) play a central role in poverty reduction (e.g. LID 1999; Alary, Corniaux and Gautier 2011; Njuki and Sanginga 2013). This claim is based on five key propositions, that:

- Poor people can start, for example, with a few chickens or a goat and through progressive accumulation work their way up to more valuable assets like small ruminants and perhaps cattle. This is the so-called 'livestock ladder'.[1]
- Livestock are both a store of wealth or savings (a valuable service where financial services are limited) and a productive asset (providing milk, meat, income, manure, etc.).
- Livestock are a special kind of asset that can both grow and reproduce (but both growth and reproduction normally require work, resources and investment – Sumberg and Lankoande (2013) described this as a type of forced savings).
- Livestock can be used as a buffer stock and risk-coping instrument in times of hardship for consumption smoothing and self-insurance purposes (Dercon 1998; but also see Fafchamps, Udry and Czukas 1998 for counter-evidence).
- Particularly with poultry, small ruminants and milk, in many situations women are able to keep control of the proceeds from any sales.

However, there is an important caveat here because there is nothing very meaningful behind the category 'livestock'. Rather, there are different species, sexes, breeds, ages, etc., all of which create different demands, have different requirements, different potentials and so forth. In other words, a detailed consideration of asset attributes and asset-ness is particularly important when considering the use of livestock within asset-based development.

Building on Dorward *et al.* (2001) and Sumberg and Lankoande (2013), in Table 1 we highlight some attributes of different types of livestock. It is clear that the individual attributes are different both across the three livestock types, and within each type depending on the genetic and environmental conditions and management requirements. In general, however, the attributes of larger animals mean that they are potentially more difficult and demanding to manage.

What does this table tell us about the asset-ness of different types of livestock? Perhaps most importantly, it highlights the fact that for some people in some contexts a large animal has the potential to be more productive, but is also a more complex and difficult asset to own and manage than a small animal. These differences are about more than simply size or number equivalents as implied by notions such as the 'livestock ladder' and 'Tropical Livestock Units' (TLUs).[2] Rather, there are fundamental, qualitative differences between the livestock types. It is only when these bump up against real and perceived risks and uncertainties, social norms, local agro-ecological and institutional contexts that the lived experience of livestock asset ownership and accumulation (i.e. asset-ness) can be appreciated.

5 Asset-based graduation and implications of asset-ness of livestock

There are many programmes in sub-Saharan Africa that use livestock to try to build the assets of the poor. These include government initiatives on a national scale such as the Girinka (One Cow per Poor Family Programme) in Rwanda, as well as numerous local projects by non-governmental organisations (NGOs) such as BRAC's Challenging the Frontiers of Poverty Reduction Targeting the Ultra Poor (CFPR-TUP) programme. The notion of 'progressive asset accumulation' is the underpinning principle of many livestock transfer programmes that seek 'asset-based graduation' (Sumberg and Lankoande 2013).

Generally, the 'sustainable graduation' model aims to achieve three things: (1) to build the

assets of the poor and their capability to overcome the initial poverty conditions (through asset transfers and intensive trainings); (2) to help the programme recipients reach (and remain above) a certain level of living conditions and consumption (i.e. threshold graduation); (3) and to maintain the means and the diversity of livelihoods and income sources that are self-generative and viable in the long term (i.e. sustainable graduation) (Sabates-Wheeler and Devereux 2013).

It is worth noting, however, that the question of 'sustainable graduation' is not universally applicable to all beneficiaries of social protection programmes. Clearly, for some people (e.g. with severe disability), the notion of 'graduation potential' is less relevant in identification and design of interventions. Pursuing this line of thought, it is remarkable to observe the linear discourse around asset-based graduation programmes: it is suggested that the poor, even the poorest of the poor, would climb the development ladder if they were provided with productive assets (usually livestock), positive motivation and aspiration, and long-term mentorship and training. Of course, this assumes a conducive market and an enabling institutional environment. We argue that better targeting and context-specific assistance for livestock asset-based graduation programmes would be possible if it took account of local understandings of the asset-ness of livestock.

Strong claims have been made about the impact and sustainability of these models; however, the evidence is limited and mixed (Kabeer *et al.* 2012; Krishna, Poghosyan and Das 2012; Raza, Das and Misha 2012; Browne 2013: 11). Here we review selected empirical cases, to highlight the implications of the asset-ness of livestock in practical terms.

The literature around these programmes highlights five main themes: household economic outcomes and household nutrition; animal feed and health (including breeding and reproduction), and disease challenges. For instance, an empirical study of intensive dairy cow production for smallholders revealed significant increases in household cash income and consumption of dairy products in coastal Kenya (Nicholson, Thorton and Muinga 2004). A recent study of the impact of a Heifer International project in Rwanda also reported significant improvements in nutrition outcomes for the beneficiary children (Rawlins *et al.* 2014). While such productivity and utility outcomes are notable, their successes are linked to (and will depend on) other livestock attributes like holding cost (e.g. feed availability). Indeed, recent work in Rwanda by Klapwijk *et al.* (2014) suggests that poor farmers who receive a cow through Girinka are unlikely to be able to cultivate sufficient feed for a local animal, to say nothing of a more productive cross-breed.

Nicholson *et al.* (2004) acknowledged other general but crucial livestock attributes that need to be addressed: first, disease challenges due to local environmental conditions, in this case, of coastal regions (higher temperature and humidity) may hamper and even halt the livestock development (this is relevant to the asset-ness of *security* and *life*); second, intensive dairy production (i.e. zero-grazing) requires a constant and reliable feed supply, which is dependent on the household (or hired) labour supply to source and 'cut-and-carry' fodder at varying capacity and severity of seasonal feed shortages (this is, *holding costs*); and third, more intensive dairy production (and higher genetic potential of dairy cows) may require changes in management practices and inputs used at the household level, which will vary on an individual basis (this is, *complementarity* and *ownership/control*).

Similar concerns and limitations were observed in pilot projects targeted at women in extreme poverty in West Bengal, India and in Sindh, Pakistan (Kabeer *et al.* 2012). 'Bengali' goats and hens were introduced in the project villages in Sindh with the expectation that the chickens would soon provide eggs for sale, while goats would later provide milk for household consumption. However, the technical challenges were real and unforgiving: poor artificial insemination rates for goats and the spread of avian virus almost wiped out all the livestock distributed in the project villages (*ibid.*: 14–37). Besides these unpredictable and uncontrollable factors, there were implementation errors such as introducing unsuitable livestock and giving wrong breeding and purchasing advice. These could have been avoided if the asset-ness was taken more seriously. It is interesting to note that the project eventually realised that the beneficiaries 'needed a more immediate source of income which livestock was not providing

them' and that the 'slow-performers' (i.e. beneficiaries with low graduation potential) would be better off giving up their livestock and instead invest in petty trade to generate daily income, and 'redistribute the animals to "strong performers" to boost their herd sizes' (*ibid*.: 42).

6 Discussion and conclusion

In the previous two sections we identified a number of important asset attributes and introduced the notion of asset-ness. We then looked at the attributes and asset-ness of different kinds of livestock. A critical conclusion from this is that the attributes and asset-ness of specific livestock are not intrinsic, but linked directly to the agro-ecological and social and institutional context.

Here we explore implications of this analysis for the use of livestock in asset-based social protection and for the understanding of graduation in relation to livestock-based social protection programmes. Although these programmes and projects are not necessarily framed using the language of social protection or graduation, their philosophy, objectives, target groups, etc. are closely aligned with the ethos and methods of social protection. While it is seldom made explicit, Lankoande and Sumberg (2014) suggest that one assumption underpinning these programmes is that over time the recipients will maintain or increase their livestock holdings. If this assumption holds, in principle it would provide a useful indicator of success and important insights into the dynamics of graduation. On the other hand, if recipients transfer the original livestock gift and/or the offspring it generates to other types of assets, or use these for other purposes, the evaluation of success and impact may be much more difficult.

We have suggested that, in general, assets must be understood (and valued) in context. This is particularly so for livestock as assets because of different requirements for feed and management and the implications for productivity and reproduction (to say nothing of mortality). For an individual with limited access to land or feed, a cow may not be much of an asset. If that cow was a 'gift' from the government or an NGO, and the recipient therefore is or feels that she is unable to sell it, then it may become a real liability. Thinking along these lines is particularly important for programmes that seek to provide social protection through the transfer of a single type of asset (e.g. a cow), and highlights again the importance of effective targeting. Putting poor people at greater risk or constraining their room to manoeuvre because what was intended as an asset in fact became a liability would be inexcusable.

In terms of future research we hypothesise that: (1) as the costs associated with holding and/or managing the gifted asset increase; (2) with increasing diversity in recipients' goals, preferences, interests, skills and access to other assets; and (3) with increasing diversity in the contexts within which the recipients live and will need to deploy the asset, the likelihood of the transfer not contributing to sustainable graduation also increases.

Notes

1 The notion of 'livestock ladder' – a varying level of economic and non-economic benefits that are attributed to different livestock-keeping systems – is a novel concept to explain the various return-potentials of a livestock production system. However, the process of how poor smallholders can and will actually climb such a 'ladder' is less obvious.

2 According to FAO, 'For a number of applications there is a need to use a common unit to describe livestock numbers of various species as a single figure that expresses the total amount of livestock present – irrespective of the specific composition. In order to do this, the concept of an "exchange ratio" has been developed, whereby different species of different average size can be compared and described in relation to a common unit. This unit is 1 Tropical Livestock Unit (TLU).' For instance, a camel is commonly considered to equal 1 TLU, a head of cattle 0.7, a sheep or goat 0.1 and a chicken 0.01; or in other words, 1 camel = 1.4 cattle = 10 sheep or goats = 100 chickens. For more details see www.fao.org/ag/againfo/programmes/en/lead/toolbox/Mixed1/TLU.htm.

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