



# LEGS

Livestock Emergency Guidelines and Standards

## Livelihoods and Resilience

A Discussion Paper for the Livestock Emergency Guidelines and Standards (LEGS)

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# CONTENTS

<b>1.</b>	<b>Introduction</b>	<b>3</b>
<b>2.</b>	<b>Framing Resilience</b>	<b>5</b>
<b>3.</b>	<b>Attempts at Measuring Resilience and Recent Studies</b>	<b>9</b>
<b>4.</b>	<b>Livelihoods and Resilience in the Context of the Development and Humanitarian Nexus</b>	<b>10</b>
<b>5.</b>	<b>A Resilience/Livelihoods Framework and Role of Livelihoods Assets within the LEGS Approach.</b>	<b>10</b>
<b>6.</b>	<b>Conclusions</b>	<b>12</b>
<b>7.</b>	<b>Bibliography</b>	<b>12</b>
<b>8.</b>	<b>Case Studies</b>	<b>14</b>

## ABBREVIATIONS

<i>ACP</i>	Asset Creation Programmes
<i>ASALS</i>	Arid and Semi-arid Lands
<i>CoBRA</i>	Community Based Resilience Assessment
<i>CRM</i>	Coping and Risk Management
<i>DFID</i>	United Kingdom's Department for International Development
<i>FAO</i>	United Nations Food and Agriculture Organisation
<i>FDLPCS</i>	Federal Department of Livestock and Pest Control Services
<i>HPAI</i>	Avian Influenza Virus
<i>IFRC</i>	International Federation of the Red Cross and Red Crescent
<i>IPCC</i>	Intergovernmental Panel on Climate Change
<i>KES</i>	Kenyan Shillings
<i>LEGS</i>	Livestock Emergency Guidelines and Standards
<i>NDMA</i>	National Drought Management Authority of Kenya
<i>RIMA</i>	Resilience Index Measurement and Analysis
<i>SLA</i>	Sustainable Livelihoods Approach
<i>SERS</i>	Subjective self-Evaluated Resilience Score
<i>TANGO</i>	Technical Assistance to NGOs
<i>UMMB</i>	Urea Molasses Mineral Blocks
<i>UN</i>	United Nations
<i>UNDP</i>	United Nations Development Programme
<i>UNISDR</i>	United Nations Office for Disaster Risk Reduction
<i>USAID</i>	United States Agency for International Development

# I. INTRODUCTION

The objective of this discussion paper is to provide detailed recommendations to the LEGS Advisory Committee on how resilience and livelihoods issues can better be represented in the next edition of the LEGS Handbook. The paper provides a summary and analysis of the concepts of sustainable livelihoods and resilience in order to promote the issues among practitioners and policy makers who are the users of the Handbook. It includes a brief review of selected secondary literature and two short case studies illustrating the impacts of livestock emergency responses – one from West Africa, and the other from East Africa.

The first case study is a response to Avian Influenza in rural Nigeria – in West Africa. The second case study looks at how drought management structures in Kenya – East Africa were used to not only respond to emergencies following the 2016/17 drought in the Horn of Africa, but ensured that the communities bounced back better; in some cases, with minimal or no loss of livestock assets. Bouncing back better, in the context of livelihoods means the communities acquired skills and resources in all or some of the five capital areas; physical, social, natural, financial and human, that enabled them to live more effectively post-crisis.

## I.1 Definition of Livelihoods and Sustainable Livelihoods Framework

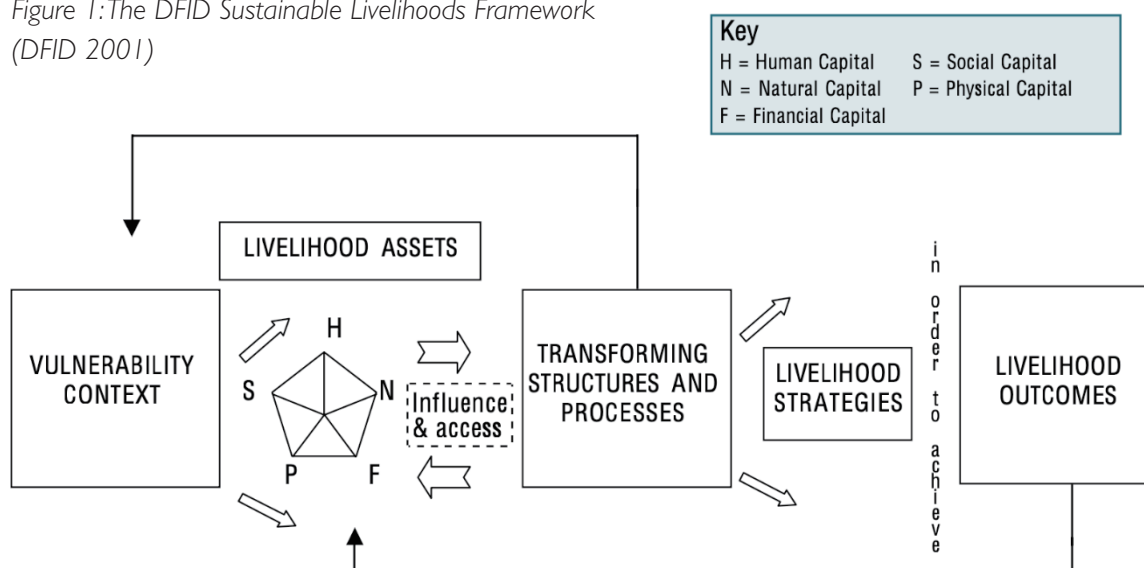
“A livelihood comprises the assets (Natural, Physical, Human, Financial and Social Capital), the activities linked to these assets and access to them, (mediated by institutions and social relations) that together determine the living gained by the individual or household” (Chambers and Conway, 1992). They are means of making a living; in other words, the various activities and resources that allow people to live. Further “a livelihood is judged sustainable when it can cope with and recover from the stresses and shocks, and maintain or enhance its capabilities and assets both now and in the future without undermining the natural resource base” (ibid). The LEGS approach is based on three livelihoods objectives which are: to provide immediate benefits using livestock resources, to protect livestock assets, and to rebuild the livestock assets of crisis affected communities. (Livestock Emergency Guideline and Standards p.9)

To achieve the three livelihood objectives, the approach promotes support to existing local service providers, suppliers, and markets, wherever this is feasible and relevant. The approach also works on transformation of structures and processes i.e. working with levels of government and improving and finding ways of working with existing laws and policies, cultures and institution to fast-track delivery of emergency services. Immediately it does this, LEGS steps off the humanitarian platform and begins to engage in development, hence its claim to operate in the humanitarian and development nexus.

The LEGS Approach aims to support local systems to enable recovery and long-term development and to complement rather than undermine development programmes. Certain aspects of emergency programming such as distribution of free drugs rather than using the local private suppliers, or provision of food aid without considering the longer term issues around access to food can, and often do, undermine development in some contexts and should be avoided if possible, as they undermine resilience of communities' livelihoods strategies and systems. The Sustainable Livelihoods Approach (SLA) underscores how programming around the Sustainable Livelihoods Framework (Figure 1) enhances development and builds resilience even in crisis-affected communities. A shock emerging from the vulnerability context of a community can affect livelihood assets influencing them in different ways. In the case of livestock – a financial and social capital - emergency response

interventions such as provision of water and feed, or destocking can help sustain the breeding herds to tide the households across the crisis, and ensure continuity with the livelihood strategies around livestock after the crisis has passed. The mediating institutions e.g. structures of government, and operating policies and laws can support or undermine such actions and the living gained from it, in which case, adjustments will be necessary to ensure the livelihood assets can be sustained beyond the crisis. The emerging livelihood strategies can ensure better outcomes, for example, more income, increased well-being etc. – which are themselves aspects of resilience – bouncing back better. These outcomes feed back to enhance the livelihoods assets. Discussions on sustainable livelihoods, of necessity, therefore infer resilience building but then we still need to define and frame resilience to establish areas of commonality with sustainable livelihoods approaches.

Figure 1: The DFID Sustainable Livelihoods Framework (DFID 2001)





## 2.0. FRAMING RESILIENCE

The notion of resilience has a long history spanning multiple academic disciplines (Alexander 2013). In recent decades, the term has gained prominence across the sustainability sciences in describing how socio-ecological systems respond to shocks and stresses. The rise in popularity has coincided with the adoption of resilience as a unifying framework in bridging humanitarian and development practices. Indeed, resilience is now central to a number of international policy commitments, including the United Nations Agenda 2030 (UN 2015a) and Paris Agreement on climate change (UN 2015b). It follows that various development agencies define the term in different ways depending on where they choose to lay the emphasis. Yet the need for enhancing resilience of communities and countries cannot be ignored, especially by the development and humanitarian fraternity.

### 2.1 The International Federation of the Red Cross and Red Crescent - IFRC

The IFRC defines resilience as, “the ability of individuals, communities, organizations or countries exposed to disasters, crises and underlying vulnerabilities to anticipate, prepare for, reduce the impact of, cope with and recover from the effects of the shocks and stresses without compromising their long-term prospects. The definition recognizes that resilience can be observed and strengthened at multiple levels:

1. Individual level: a resilient individual is healthy; has the knowledge, skills, competencies and mind-set to adapt to new situations and improve her/his life, and those of her/his family, friends and community. A resilient person is empowered.
2. Household level: a resilient household has members who are themselves resilient in the description above.
3. Community level: a resilient community strengthens the resilience of its constituent individuals and households.

4. Local government: can either strengthen or weaken resilience at the individual, household and community levels as it is responsible for infrastructure development, maintenance, provision of social services and application of the rule of law.
5. National government: resilience at this level deals with policy, social protection systems, infrastructure, laws and governance issues and can profoundly impact community resilience.
6. Organizations such as National Societies of the Red Cross, including their branches and volunteers, make contributions that are integral to resilience at all the levels.
7. Regional and global levels: the impacts of conflicts, violence and insecurity; hunger; mass migration; economic recession and prosperity; pandemics; pollution and climate change; positive and negative effects of globalization and new technology all offer examples of the inter-connectedness of the levels and how actions at one level can negatively or positively impact the other levels” (IFRC 2014).

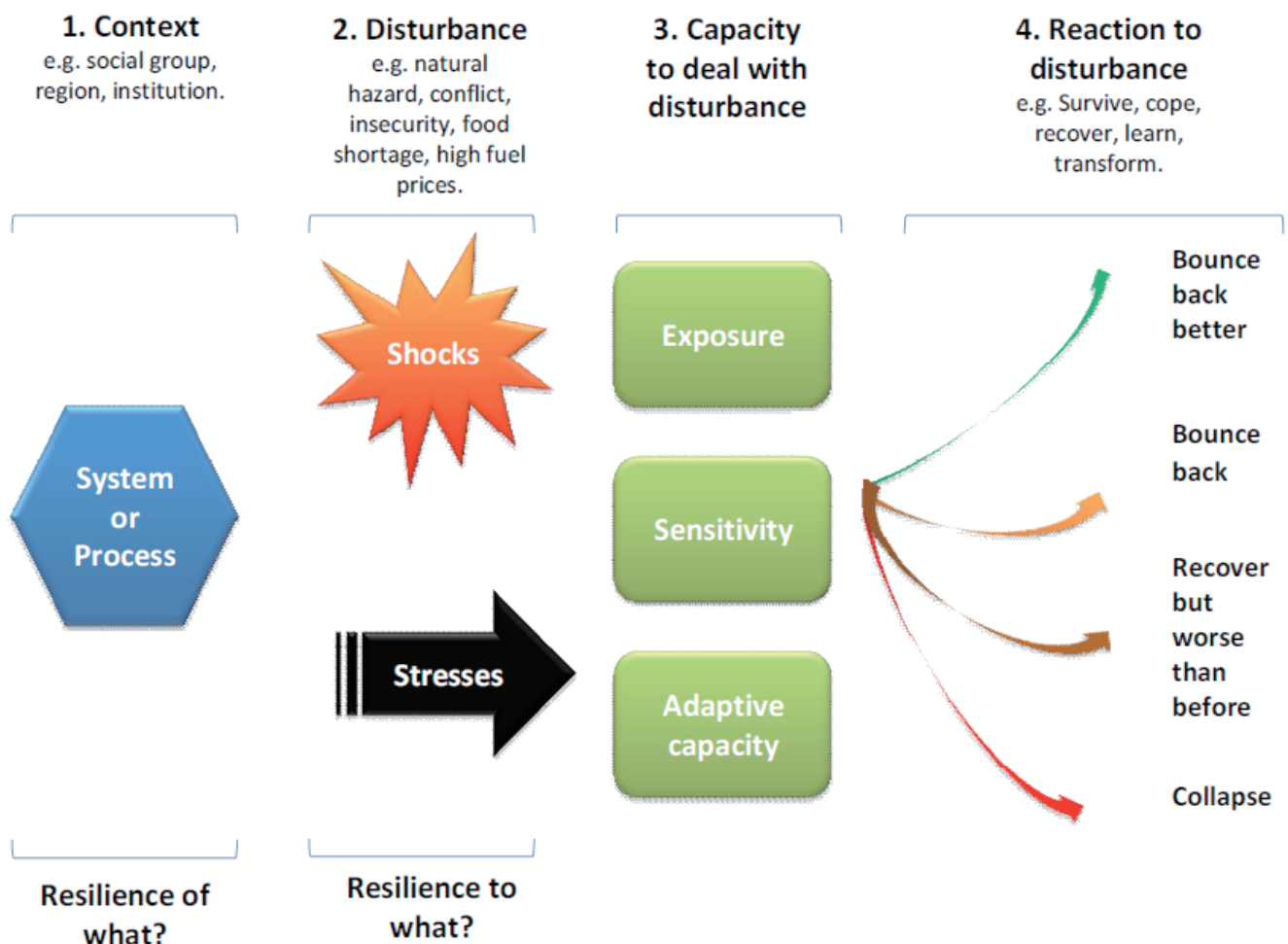
## 2.2 The UK's Department for International Development - DFID

In defining resilience, DFID focuses on disaster resilience, (although some experts question "why disaster resilience" or what it even means, preferring to simply talk of resilience) and defines it as the ability of individuals, communities, organisations and states to adapt to and recover from hazards, shocks or stresses without compromising long-term prospects for development (Combaz 2014). Further, it is "the ability of countries, communities and households to manage change, by maintaining or transforming living standards in the face of shocks or stresses – such as earthquakes, drought or violent conflict – without compromising their long-term development prospects" (DFID 2011). In practice, DFID's framework (Figure 2 below) depicts the four core elements of resilience as follows:

- a) **Context:** Whose resilience is being built – such as a social group, socio-economic or political system, environmental context or institution?
- b) **Disturbance:** What shocks the group aims to be resilient to.

- c) **Capacity to respond:** The ability of a system or process to deal with a shock or stress depending on exposure (the magnitude of the shock or stress), sensitivity (the degree to which a system will be affected by, or will respond to, a given shock or stress), and adaptive capacity (how well it can adjust to a disturbance or moderate damage, take advantage of opportunities and cope with the consequences of a transformation).
- d) **Reaction:** A range of responses are possible, including: bouncing back better, where capacities are enhanced, exposures are reduced, and the system is more able to deal with future shocks and stresses; bouncing back, where pre-existing conditions prevail; or recover, but worse than before, meaning capacities are reduced. In the worst-case scenario, the system collapses, leading to a catastrophic reduction in capacity to cope with the future.

Figure 2: DFID Elements of Resilience Framework (DFID 2011)



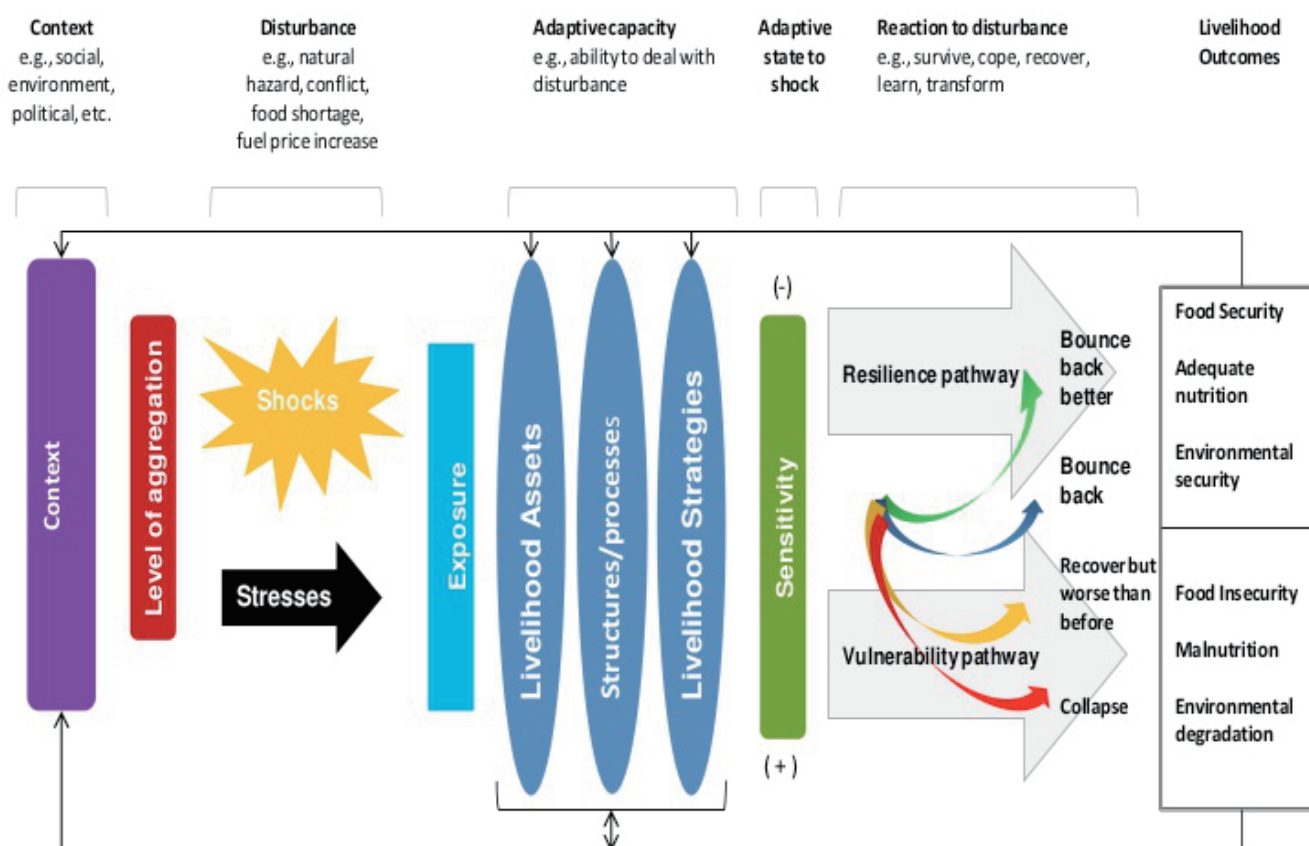
The Technical Assistance to NGOs (TANGO) adapts the DFID 2011 resilience framework (see Figure 3) to illustrate how one can build “resilience to” certain hazards (classified under Disturbance section in Figure 2 above), while at the same time building “resilience of” – a system’s Adaptive capacity (which includes livelihood assets, structures and processes, and livelihoods strategies) to respond to the Disturbance (natural hazard, conflict, food shortage, pandemic, fuel price increase). The Reaction then defines the resilience and vulnerability pathways that the system will take following exposure based on its sensitivity to the disturbance.

The list of livelihood outcomes must include all the above and those mentioned in the livelihoods framework which include more income, increased well-being, and reduced vulnerability.

## 2.3 The United Nations Food and Agriculture Organisation - FAO

FAO defines resilience as “the ability to prevent disasters and crises as well as to anticipate, absorb, accommodate or recover from them in a timely, efficient and sustainable manner”<sup>1</sup>. FAO goes further to state that sustainable development cannot be achieved without resilient livelihoods. People around the world are increasingly exposed to natural hazards and crises – from drought, floods, earthquakes and disease epidemics to conflict, market shocks and complex, protracted crises. Worldwide, 75% of poor and food insecure people rely on agriculture and natural resources for their living. They are usually hardest hit by disasters. Since FAO assists countries to increase the resilience of households, communities and institutions to more effectively prevent and cope with threats and disasters that impact agriculture, food security and nutrition, it is not surprising that their definition of resilience focuses on the recurrence of disasters and crises that undermine efforts to eradicate hunger and malnutrition, and to achieve sustainable development. People who rely on farming, livestock, forests or fishing for their food and income – around one-third of the world’s population – are often the most vulnerable and affected.

Figure 3: TANGO’s- Adaptation of the Elements of Resilience Framework (TANGO 2012)



## **2.4 The United Nations Development Programme - UNDP**

UNDP defines resilience as: “an inherent as well as acquired condition achieved by managing risks over time at individual, household, community and societal levels in ways that minimize costs, build capacity to manage and sustain development momentum, and maximize transformative potential” (UNDP 2016). UNDP notes however that there is a lack of consensus on the definition of resilience and states that this lack of clarity undermines the ability of stakeholders to objectively verify the success (or failure) of their efforts at programming to build resilience.

## **2.5 The Intergovernmental Panel on Climate Change - IPCC**

The IPCC defines resilience as “the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change....it is the ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions” (IPCC 2012).

Due to its focus on climate change, the Panel notes that climate-resilient pathways include strategies, choices, and actions that reduce climate change and its impacts. They also include actions to ensure that effective risk management and adaptation can be implemented and sustained (Denton et al 2014).

## **2.6 United Nations Office for Disaster Risk Reduction – UNISDR**

Disaster resilience is the ability of individuals, communities, organisations and states to adapt to and recover from hazards, shocks or stresses without compromising long-term prospects for development. “According to the Hyogo Framework for Action (UNISDR 2005), disaster resilience is determined by the degree to which individuals, communities and public and private organisations are capable of organising themselves to learn from past disasters and reduce their risks to future ones, at international, regional, national and local levels” (Combaz 2014).

According to the Hyogo Framework of Action (UNISDR, 2005, p4), resilience means the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions. Resilience building, for example, focuses investment on increasing a city or area's overall ability to support a vibrant, healthy society and economy under a wide range of circumstances.

The Sendai Framework for Disaster Risk Reduction 2015-2030 (UNISDR 2015) adopted at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan, on March 18, 2015 is the successor to the Hyogo Framework. Its goal is “to prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster; increase preparedness for response and recovery, and thus strengthen resilience.”



## 2.7 United States Agency for International Development - USAID

For the purposes of its policy guidance, USAID views resilience in the face of recurrent crisis as “the ability of people, households, communities, countries, and systems to mitigate, adapt to, and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth”. Shocks and stresses take many forms. Dramatic events such as hurricanes, earthquakes, or tsunamis can have a devastating, immediate impact. Stresses can take less apparent but insidious forms and often have more gradual onsets than shocks. Stresses may include events such as drought, global economic volatility, or natural resource depletion. In areas of chronic poverty, for example, a simple increase in food prices can trigger significant underlying vulnerability and result in crisis. Conflict can be both a shock as well as an underlying source of stress that can make communities more vulnerable to other shocks when they hit.

The actual impact of any given shock or set of stressors at the community level is largely determined by the magnitude of the hazard itself, combined with the vulnerability to the shock and the capacity of those affected to withstand them. In the most catastrophic case, a shock can completely overwhelm a community to the point of collapse. At a less extreme level, a society may eventually recover, but diminished livelihoods and resources may leave affected populations worse off and more vulnerable than before (USAID 2012).

## 3. ATTEMPTS AT MEASURING RESILIENCE AND RECENT STUDIES

Measurement of resilience has remained a current and interesting area of study especially in light of the various findings. Four methods (both quantitative and qualitative) have been documented. FAO's Resilience Index Measurement and Analysis RIMA-I and RIMA-II methodologies estimate resilience through a set of pillars, which are then aggregated through latent variable models (FAO 2016a). RIMA is a quantitative approach that enables a rigorous analysis of how households cope with shocks and stressors.

UNDP proposes the Community Based Resilience Assessment (CoBRA) methodology to measure resilience at the community level by establishing a tool for identifying the key building blocks or characteristics of resilience, and then assessing the attributions. In order to help communities onto a path of resilience building, rather than increasing vulnerability, it is clear that a multi-faceted approach at scale is required. This is in sharp contrast to the fragmented, largely sectoral and project-based approach to interventions. In disaster affected areas, where protracted crises with spikes in needs are the norm, resilience measurement tools are required through which to document evidence of groups of interventions that have high impact and spur positive changes at household and community levels (UNDP 2016).

Recently, the potential for subjective approaches has been proposed and is being explored by resilience scholars. This is the view that informs UNDP's CoBRA methodology discussed above. The subjective approaches take the view that soliciting people's judgements of what resilience means to them and getting them to self-evaluate their own resilience could provide more accurate results than the objective observation by external experts. Another measurement approach is the Subjective self-Evaluated Resilience Score (SERS). The outcomes from SERS are directly compared with an objectively evaluated approach, the Resilience Index Measurement Analysis (RIMA), widely used by resilience practitioners (Jones and D'Errico 2019). Overall, the results highlight the need for resilience evaluators to consider a diversity of knowledge sources and seek greater use of evidence in indicator selection.

The TANGO Analytical Framework used by USAID<sup>2</sup> generates three groups of indicators required to model resilience. These indicators are collected around the initial states and capacities (before the event) i.e. Initial Well-being and Vulnerability, Shocks and Stresses (Disturbance component) and Subsequent States and Trajectories – wellbeing and vulnerabilities. The framework also selects indicators on political, cultural and agro-ecological factors that control the outcomes.

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2 [https://fsnnetwork.org/sites/default/files/resilience\\_measurement\\_in\\_usaid.pdf](https://fsnnetwork.org/sites/default/files/resilience_measurement_in_usaid.pdf)

#### **4. LIVELIHOODS AND RESILIENCE IN THE CONTEXT OF THE DEVELOPMENT AND HUMANITARIAN NEXUS**

There appears to be limited documented research of livelihoods and resilience in the area of the humanitarian-development nexus, within which LEGS operates.

As noted above, according to Chambers and Conway (1992) a “livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living; a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long-term.”.

In the definition above, a number of strands coalesce. On the one hand there is a requirement for livelihoods to be able to recover from “stress and shocks” but also to be able to “maintain and enhance” capabilities and assets into the future. A central element in this “resilience” to stress and shocks is the diversification of elements that comprise “livelihood”.

Carney (1998) provides a simpler version but also one which resonates with that of Chambers and Conway: “A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living,” and, when merged with sustainability “A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base.” (Carney 1998).

The sustainable livelihoods approach is an example of the “multiple capital” approach where sustainability is considered in terms of available capital (natural, human, social, physical and financial) and an examination of the vulnerability context (trends, shocks and stresses) in which these assets exist. In other words, resilience is implicit in the definition of sustainable livelihoods because it has to do with shocks and stresses.

The humanitarian sector is intended to address emergency situations and meet the immediate basic needs of people affected by crises. It is short-term, flexible, and may circumvent existing national systems in order to quickly deliver aid to people in need (Bennett 2015; Buchanan-Smith and Maxwell 1994; Macrae 2012). Development assistance, on the other hand, seeks to address structural causes of poverty, by working to change the social, economic and political systems that create the conditions in which poverty and inequality occur and thrive. For this reason, the development sector cannot be neutral, impartial or independent as the humanitarian sector tries to be.

Livelihood based approaches in emergencies straddle these two worlds of addressing the urgent, short term needs of protecting the assets of crisis affected communities while also addressing structural causes of poverty by transforming structures (levels of government) and processes (policies, laws, culture – ways of working, and institutions) in order to ensure livelihoods are sustained beyond the emergencies while at the same time building the resilience of systems and assets to the shocks and stresses. Any humanitarian initiatives that works at sustaining life and protecting assets while at the same time strengthening existing socio-political structures (governments structures at all levels, policies, cultures etc.) does not only build sustainable livelihoods but also contributes towards building resilience.

#### **5. A RESILIENCE/LIVELIHOODS FRAMEWORK AND ROLE OF LIVELIHOODS ASSETS WITHIN THE LEGS APPROACH.**

TANGO’s adaptation of the resilience framework (see Figure 3 above) provides a good summary of six components that act together to illustrate what happens in the case of a disturbance of a livelihood system and the resulting reactions and livelihoods outcomes. The four main components that explain resilience as shown in Figure 2 above are, Context, Disturbance, Adaptive Capacity, and Reaction to the disturbance. The framework is therefore a progression of Figure 2 as it captures the concepts that explain “resilience of” systems and livelihood assets as well as “resilience to” disturbances – shocks and stresses.

As noted above, the LEGS Approach is based on three livelihoods objectives which are: to provide immediate benefits using livestock resources, to protect livestock assets, and to rebuild the livestock assets of crisis affected communities. Hazards and disasters happen not just within communities but also in institutions and systems operating and affecting the five livelihoods assets. In the case of livestock, whether considered a social or financial asset by a given community, there are certain systems that sustain the keeping of livestock e.g. veterinary services, water, pasture and grazing patterns, grazing committees in pastoral areas amongst other systems. When a disturbance of whatever nature occurs, there is a destabilisation of the order, and depending on the system's capacity to cushion the livelihood, the outcomes will be different; from total collapse to bouncing back better. The interventions proposed and undertaken by the LEGS Approach are to provide immediate benefits to affected communities using livestock resources which could mean selling off livestock in order to provide cash; protecting livestock assets which could mean providing shelter or feed for breeding herds to ensure the asset can survive the disaster; or rebuilding livestock assets which could include restocking initiatives after herds are depleted in order to provide continuity following a disaster.

Another concept that has been known to build resilience in fragile communities with unsustainable livelihoods strategies and outcomes is the asset creation programmes (ACP) at community level. The concept is an upgrade of food for assets and cash for work to actual investment into the development and management of livelihood assets (especially physical, but also the other four assets) through external financial support. With assets such as earth dams, roads, pasture production, improved community and local government capacity, the projects move the communities and households from dependence on food aid during crisis to production of their own food and securing of water for livestock during drought crises, which in turn improves food and nutritional security. Such assets can give households and communities the ability to not only withstand shocks, but also become independent of food assistance in droughts or flood emergencies, producing surplus food and achieving stronger and diversified, sustainable livelihoods (WFP 2016).

The success of ACP depends on integrating and layering supported projects with those of other development partners and agencies for a more

sustainable and transformative impact. In one community which undertook an asset creation programme with the aim of addressing seasonal food gaps in a lasting manner, the asset creation project set out to achieve six outcomes: improved pasture and browse production, improved production and diversification of food and income sources, improved access to water for both crop and livestock consumption, reduced environmental degradation, improved access to markets and other social services (feeder roads), improved capacity of community, and staff and stakeholders to implement food security projects (WFP 2018). In the end, the community reported many gains including improved nutrition and improved livestock and human health.

In responding to natural hazards – say drought or floods, interventions using the LEGS approach (i.e. pursuing the achievement of the first two livelihood objectives: providing immediate benefits using livestock resources, and protecting livestock assets) will be building “resilience to” a disturbance through protecting livestock following the disturbance e.g. by provision of livestock feed through the government and private sector channels. The LEGS Approach will build “resilience of” both the systems and the livelihood assets, through support for governing structures and livestock value chains during the crisis, the resulting outcome being likely to follow the resilience pathway as opposed to taking the vulnerability pathway. Figure 3 above is thus an appropriate resilience framework for the LEGS Approach, as it combines the concepts of sustainable livelihoods and resilience building.

The LEGS Approach responses include such interventions as training of government officers or supporting the development of response plans as is happening in the Philippines. Another example is through building regional networks and framing conversations in international forums, such as COP 25, to include animal welfare in planned emergency responses as is happening through partners in Nicaragua and Honduras. While the Approach is better known for engaging in actual efforts to provide immediate benefits using livestock resources, to protect livestock assets, and to rebuild the livestock assets of crisis affected communities, reaching out to strengthen systems and framing national, regional and international dialogues moves the LEGS Approach rightly out of humanitarian only, into the humanitarian-development nexus where it desires to engage.

## 6. CONCLUSIONS

1. While operating under the sustainable livelihoods framework the LEGS Approach is more likely to be applied to disparate elements of resilience that are removed from one another. However, within a livelihoods and resilience framework, the LEGS Approach is able to combine livelihood assets, and systems and structures so that humanitarian responses aimed at sustainable livelihoods also address issues within the systems and structures in which the crisis occurs. Addressing the needs jointly enables the building of not just resilient livelihoods assets but better structures and systems as well as resulting in sustainable livelihoods outcomes.
2. Whenever an economic unit (say household) is exposed to a disturbance (for example livestock disease), all three factors of capacity to deal with the disturbance – livelihood assets, structures and processes, and livelihood strategies – are affected, although not equally. The Coping and Risk Management strategies chosen by the unit will depend on how strong their adaptive capacities (assets, systems and strategies) already were before the disturbance. Case Study 2 below, about an outbreak of Avian Influenza in Nigeria, demonstrates this point. It also shows that resilience building initiatives should focus not only on building livelihood assets but also on strengthening structures/systems/processes, as well as establishing emerging livelihoods strategies that will lead towards the resilience rather than the vulnerability pathway.
3. The place for LEGS therefore is to support the design of interventions that do not only protect livestock assets during emergencies, but also promote programmes that build structures and systems. In this way the resilience of the community will be built within the framework that combines resilience building and sustainable livelihoods as shown in Figure 3 above.

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## 8. CASE STUDIES

### 8.1 CASE STUDY I

#### Building livelihood resilience to avian influenza outbreaks in rural Nigeria

Two years after the first detection of Highly Pathogenic Avian Influenza virus (HPAI) in a poultry farm in Nigeria, outbreaks had been recorded in 25 out of 36 states in the country. HPAI is a poultry disease that causes not only supply shocks due to bird losses but also demand shocks due to reduced poultry sales and market disruption. The emergence of this shock does not result only in loss of income and livelihoods but also creates a significant level of risk of future HPAI outbreaks (UNDP 2006). According to a 2008 study, about 60% of Nigerian households obtained their livelihoods from the agricultural sector (Obi et al. 2008), and the poultry sub-sector contributed 9-10% to the Nigerian agricultural GDP with a net worth of \$250 million (FDLPCS 2007). Poultry keeping is part of life in the country because it represents an entry point into business with a small start-up capital required. As a result, the industry is dominated by small-scale poultry producers.

The Federal Department of Livestock and Pest Control Services (FDLPCS 2007) reported that Nigeria's poultry sub-sector was, at the time, made up of 60% village extensive and backyard intensive poultry (flock size: 5 – 999 birds; minimal or no biosecurity), 15% semi-commercial (flock size: 1000 – 4999 birds; medium level of biosecurity) and 25% commercial (5000 – hundreds of thousands, high level of biosecurity). This structure of the poultry industry establishes the rationale for focusing on rural poultry because apart from poultry producers, the disruption of markets caused by HPAI outbreaks could well lead to indirect effects on welfare outcomes of other stakeholders within the poultry value chain (farm employees, feed millers, petty traders of poultry foods, etc). The UNDP (2006) rapid appraisal assessment revealed that the official confirmation of HPAI in Nigeria caused initial panic resulting in a total boycott of poultry and poultry products. Within two weeks, egg and chicken sales declined by 80.5% and up to 4 months after, prices had not recovered up to 50% of pre-outbreak levels. The objective of the study was to examine factors that influence farm households' coping and risk management adoption decisions subsequent to shocks and stresses created by the 2006 and 2007 avian influenza outbreaks.

To understand how a socio-economic unit such as a household or community responds to shocks and risks, it is important to analyse the factors that influence coping and adaptive capacities which are then adjusted to maximise resilience and minimise vulnerabilities. According to Ellis (2000), "coping strategies are the unplanned short-term reactions of households to unanticipated livelihood failure or ex-post coping with crisis; while risk management or adaptive strategies involve planned attempts to spread risks and reduce 'risk covariance' between different livelihood components".

The study in the Nigerian case revealed that five coping and risk management strategies were commonly adopted in the study area with varied proportions choosing different strategies, with some choosing multiple strategies to cope with the risk or adapt to spread the risk.

Table 1: A case study of factors affecting farm households' adoption of coping and adaptive strategies in the face of a hazard.

Coping and Risk Management (CRM) Strategies	Percentage adopting the CRM Strategy
1. Immediate sale of the remaining birds to avoid loss due to HPAI/culling (immediate bird sale)	71.0
2. Seek support through social network (borrow birds or cash)	28.3
3. Restock poultry fully up to the ex-ante level (restock full)	29.5
4. A household member stops poultry trading/rearing and diversifies into non-farm village petty trading of manufactured items (diversify into non-farm)	20.7
5. A household member stops poultry trading and migrates to seek employment in a nearby town (migrate)	15.7

## Conclusion

Whenever an economic unit (in this case household) is exposed to a disturbance (in this case disease), all three factors of capacity to deal with the disturbance – livelihood assets, structures and process, and livelihood strategies are affected, although not equally. The Coping and Risk Management (CRM) strategies chosen by the unit will depend on how strong their adaptive capacity (assets, systems and strategies) already were before the disturbance. The resulting reaction to the disturbance, whether along the resilience or vulnerability pathway will again largely be determined by how strong the adaptive capacity was before the disturbance. In the case of the Avian Influenza outbreak in rural Nigeria, a large proportion (71%) opted to sell/cull the animals to minimize loss and probably never got back into the trade. Only 29.5% restocked to pre-disturbance level showing they bounced back, but certainly not better. The other groups that were not resilient opted out of the poultry livelihood system with worse livelihood results.

The study however concluded that those households where a member stopped poultry trading/rearing and diversified into non-farm but village-based petty trading of manufactured items performed better in terms of building household resilience than their counterparts who chose other coping and risk management strategies. *Source: Oparinde and Hodge 2011*

## 8.2 CASE STUDY 2

### Implementation of drought response activities

The National Drought Management Authority of Kenya (NDMA) implemented a programme of activities geared towards mitigating the impact of the 2016/2017 drought in 21 of the 23 Arid and Semi-arid Lands (ASAL) counties of Kenya. In addition to providing rapid assistance, protecting livestock assets, and rebuilding the livestock assets of crisis affected communities, the activities were noted for putting communities on the resilience pathway, securing food security for the affected communities and adequate nutrition, as well as protecting the environment. In conclusion, the drought response activities implemented assisted local communities to cope with the drought experienced between July 2016 and November 2017.

**Feed Supplements:** Provision of livestock feed supplements targeted the core breeding and milking herds. NDMA distributed drought pellets (range cubes/drought survival mash) and urea molasses mineral blocks (UMMBs). In total 235,268 x 50 Kgs bags (11,763,400 million Kgs) of drought pellets/survival mash and 53,490 x 2.5 Kgs (133,725 Kgs) of UMMB blocks were distributed to over 168,748 households for feeding 448,338 cattle and 558,099 sheep and goats costing over 550 million Kenyan Shillings (KES). A total of KES 550,580,359 utilized to procure and distribute feed supplements and hay during the 2016/2017-drought response saved pastoralists' livestock assets estimated at KES 7,213,594,800, translating to a return on investment of about 13 times the value invested. The feed supplementation saved livestock from imminent death as they were already weak and recumbent or being supported to stand.

**Slaughter Destocking:** Slaughter destocking activity from July 2016 to November 2017 targeted 12,774 cattle and 41,063 sheep and goats. The meat, which was distributed to 391,674 beneficiaries from the most vulnerable households at a total cost of KES 291,007,360, supported 62,517 pastoralists' households. The exercise injected KES 252,516,573 into the local economies of 12 affected counties at a time when the pastoralists could not market their livestock due to poor body condition or collapsed market systems. Such income was useful in the purchase of food, livestock feeds and water besides other needs such as paying school fees and health services. The meat from the slaughtered livestock was distributed amongst the poor and vulnerable households improving their nutritional status.

**Water:** Access to water through fuel subsidy, water trucking and procurement of spare parts to repair and service submersible pumps and generator sets at strategic boreholes serving a high concentration of livestock populations was also a key NDMA 2016/2017 drought support response. On average, for every KES 100 (1US\$) spent on fuel subsidy, 18 animals were watered.

The UMMB feed supplement blocks saved the assets, and in the estimation of the evaluators, the assets bounced back thirteen times better than what was invested, in effect building the community's resilience. The slaughter destocking ensured food security for vulnerable households while at the same time cushioning the livestock owners from imminent loss of livestock. Access to water protected livestock assets, in effect achieving one of the LEGS livelihood objectives. In effect the three different activities carried out in response to the drought crisis of 2016/17 served to enhance the resilience of the communities and sustain livelihoods. *Source: Vedaman Consultants (2017).*



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Suggested citation: Suji, O. (2020). Livelihoods and Resilience: A discussion paper for the Livestock Emergency Guidelines and Standards. Livestock Emergency Guidelines and Standards, UK.

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2020

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Cover photo: Julia Ashmore