Integrating 'lifesaving' in human security Framework: a post-interventional study of livelihood restoration in conflict-ecological fragile Somalia

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Abstract

'Lifesaving' interventions involving livelihood restoration in situations experiencing double tragedies of armed conflict and ecological fragility (CEF) can be a solid building block for improving the applicability of human security framework. However, redesigning human security framework to conform with the realities of CEF needs more detailed refining of the current framework and new building blocks than is the case currently. This paper applies semi-Cluster Randomized Controlled Trial (S-CRCT) with individual-level outcomes and treatment at post-lifesaving and livelihood restoration programme (LLRP) III to explore the association between the notion of "*lifesaving"* and human security framework. The trials for the *Lifesaving and Livelihood Restoration Programme* III were set up in Gedo region of Somalia. Gedo region experiences both armed conflict from the terror group- Al Shabaab, and ecological instability due to frequent drought. The nature of this complex relationship is explored by analyzing post-intervention evaluation data on the community scale, which include challenges in conducting randomized controlled trials in a geographically expansive region. We conclude that although the rate of absorption of the LLRP III intervention among the selected community was high, redesigning the human security framework to reflect local realities of lifesaving will require further work on refining the newly identifies building blocks that seem unique to communities characterized by armed conflict and ecological fragility.

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1. Introduction

The notion of *lifesaving* is mildly developed in social sciences, especially in applied disciplines such as development studies. However, the concept, in its applied form (lifesaving skills- LSS) has fairly received scholarly attention in behavioral sciences, public health and medical sciences. These disciplines have interrogated the notion of lifesaving in reference to various aspects; emergency management, critical care, safety, improved health-seeking behaviors as well as acquisition of appropriate skills on risk prevention and reduction (Shaukat et al. 2023; Ugwu and Adewusi 2022; Wilks and Pendergast 2017). In this regard, it is common to hear folks say, “lifesaving skills” or “skills for life”, to refer to capacity building (training) initiatives to equip paramedics in creating societal awareness on issues relating to safe motherhood and disaster management. Similarly, health professionals have conducted quasi-experimental studies to gauge the efficiency and effectiveness (on the basis of availability of equipment, supplies and medication) of LSS in addressing life threating conditions (Sloan et al. 2005). Health care providers have applied the *LSS* to address the high mortality rate in the global south associated with lack of skilled birth attendant (August et al. 2016).

The outcomes of community-based lifesaving initiatives have indeed hailed LSS as the most effective path to saving lives through interactive interventions, evidence-based care and informed decision that in turn lowers mortality and morbidity (Karkee et al. 2013). In advanced countries such as the United States, competency-based systems such as the Home-Based Life Saving Skills (HBLSS), have been integrated in the national health care service provision to enhance access to emergency health facilities within communities (Sibley et al. 2001). Military psychologists have experimented the application of combat lifesaving skills (CLS) in safety critical occupations such as the military to gauge the retention and normalization of this skill in responding to emergencies (Landman et al. 2022). In day to day living, *lifesaving*, is a cocktail of things; medical emergency, skills required to prepare those concerned in handling unanticipated risky situations, first aid and hands-on practical activities and assets important for accessing, understanding and using available information to make community health decisions. It is evident that the usage of the notion of *lifesaving* in disciplines such as development studies remain mundane. Rarely would one come across its analysis in long-term human security endeavors such as livelihood restoration or development projects. Yet its association with human security, as a subset of development studies can redirect attention to important discussions of clarifying the nexus between security and development. As such, the notion of *lifesaving* as relates to human security, finds a natural home in the field of development studies, as espoused by the 1994 UNDP report (cited in UNDP 2005).

Although the overarching focus of human security is on individual’s protection from myriads of threats-economy, environment, politics, person’s life, and so forth. More so, in the era of Anthropocene emerging threats (inequalities, violent conflict, digital technology and health threats) are interconnected and their interaction affects individuals’ well-being and access to opportunities (Biggeri and Tapia 2023; UNDP 2022). However, the limited focus of health security to

diseases and infection, negates various aspects of security that would otherwise be handled if the human security framework was broadened to accommodate the notion '*lifesaving*.' Further, the notion *lifesaving* gets narrower when lives to be saved go beyond the confines of health facilities and immediate medical emergency. This is especially the case when lives are lost or saved through long-term processes such as livelihood disruptions resulting from climate variability or loss of lives through armed violence instigated by scarcity of livelihood assets, thus raising the fundamental questions of whether the current human security framework takes care of the long-term lifesaving enablers, including, livelihood restoration assets and activities? In this perspective, how should human security framework be redesigned? Can human security paradigm and practice incorporate *lifesaving*, and if so, how? What is the theoretical basis of incorporating the notion of *lifesaving* in the human security framework? And is there empirical evidence supporting the relevance, effectiveness, efficiency, impact and sustainability of the notion of *lifesaving* as an integral part of human security framework?

It is against this conceptual lacuna and development policy perspective that this study was designed to gauge the viability of the notion of *lifesaving* as the eighth (8th) component human security framework. We argue that given the conceptual ambiguity associated with the notion of human security (Nussbaum 2003; Fukuda-Parr 2003), delineating the notion of *lifesaving* as a separate dimension of human security can offer a broader framework of intervention to normalise livelihood activities and assets thatfall outside the remit of health security. Such activities and assets include livelihood restoration- a key focus of this study. Livelihood restoration is a key independent variable in this study. As explained in the methodological section of this article, Gedo region of Somalia was selected as the site of study given its vulnerability to double tragedies- armed conflict and ecological stress associated with drought and climate variability (European Institute of Peace 2020; Gavin 2022). Although not a "cure it all" for development and environmental challenges, this case study provides an example of how human security framework can be conceptually and empirically clarified, as well as how the link between ecological sustainability and state's stability can be achieved through comprehensive human security interventions.

Specifically, the article interrogates the depth and breadth of human security framework and the*normalisation* of the notion of *lifesaving* into the current framework. This intellectual engagement lies at the core of making decision about the future of human security framework in reference to conflict ravaged and ecologically fragile societies (CEFS). Both classic and contemporary debates have already presaged the eminent limitations of human security to accommodate other emerging issues and how the notion could be enhanced to accommodate the multifaceted nature of fragile societies (Zeigermann 2020). This article makes a contribution towards these considerations on the conceptual assumptions about the limitations of human security, noting that any attempt to save lives through long-term interventions in the current framework is implicit. The article presents a case study from a CEFS to experiment the *normalisation* of the notion of *lifesaving* as a distinct dimension of human security, which has thus far been silent in both discourses of international development and empirical application of health security.

This study proceeds in four parts. First, we introduce the notion of lifesaving as is used in day-to-day life and its connection to the concept of human security. In the second part of the article, we will conceptualize the notion of lifesaving on the basis of three dimensions- human right, socio-economic development and human capability. Thirdly, we

will describe the methodological considerations- outlining how the study was designed and engaged the various stakeholders to inform the article. The fourth part presents the findings of the study on the basis of the four indicators of project design and implementation- relevance, effectiveness, efficiency, impact and sustainability. The conclusion evaluates the limitations and leverages for enhancing the human security on the basis of the notion of lifesaving.

2. The geo-economics of the beneficiaries of the *lifesaving* experiment

We begin this section by contextualizing the study on the basis of the independent variable- livelihood restoration within a complex geo-economics region in Somalia- Gedo. In this region, livestock (sheep and goats (shoats), camels and cattle), are the primary assets owned by households. The main livelihood and source of income is the sale of livestock and their products. In 2012, majority (75%) of the estimated population of 600,378 in the region were pastoralists, with the other groups defined as urban dwellers, agro-pastoralists and farmers along the Juba and Dawa rivers (UNOCHA[1] 2012). In 2021, UNOCHA estimated population of 736,706 in Gedo region with livestock keeping being their main activity (UNOCHA 2022). Thus, livestock is a critical asset for the population residing in the region, providing incomes, food, economic security, and social status. It also generates revenue and income for a large number of actors engaged in the value chain. As a result of reliance on these natural resource base, the people in the region have remained vulnerable to natural hazards and disasters such as droughts and famine that have become endemic in Somalia. Gedo, the second largest region in Somalia, with a 75/25- rural/urban divide and average household size of up to 6.5 members, the majority of them being nomads (UNOCHA 2012). The region has six administrative districts: Garbaharey, Bardhere, Elwak in the south and Belet Hawo, Dollow, and Luuq in the north. Two major rivers run through the region, the Dawa and the Juba. The Dawa River runs along the border of Ethiopia into Somalia's Gedo region. The Jubba River starts from Dollow, just north of Luuq district, and flows to Burdhubo and Bardhere. These natural resources are however inaccessible (especially Bardhere and Garbaharey) to the general population due to the presence of the terror group- Al Shabaab.

A large population in the region are food insecure and in need of humanitarian assistance. As at the time of conducting the study that informs this article, the Famine Early Warning Systems Network (FEWS NET) reported that poor households in the region experienced dire food security situation (FEWS NET 2022). In such situation, the productive sectors are the most affected – as noted in the *Somalia Drought Impact and Need Assessment, 2019,* livestock and agriculture accounted for 59% of all the effects of droughts, followed by physical sectors (water, sanitation, environment, and transport) which make up 38% of the effects, with social and cross-cutting themes making up the rest (FEWS NET 2022). Agriculture and livestock have been the most affected, accounting for 56% of the total effects and thus have the greatest needs, estimated at 34% of the total needs. These impacts include production and productivity losses, food security, livelihoods and employment, and social protection and safety nets. The Lifesaving intervention targeted 45,000 people, the majority of them in the rural villages, and reaching about 53% of the stressed population and 7.5% of the general population. In the evaluation, the team conducted 43 key informants (KIIs) and 8 focus group discussions (FGDs), reaching a total of 139 beneficiaries in the four districts. It must be noted that the region has one of the lowest per capita incomes in Somalia (at USD 100 – 150 per year) (FEWS NET 2022), with the majority depending on livestock as a source

of food and incomes, with households accessing over 80% of their incomes from livestock and livestock product sales. In addition to the crop and livestock dependent population, the three districts have significant urban populations that make their living from formal and informal employment and trading, and the internally displaced populations (IDPs) that are dependent on humanitarian assistance. These living conditions are aspects of human security in which case the focus shifts on how the lives of those suffering insecurities in Gedo region of Somalia can be saved.

Notwithstanding the point that human security can be enhanced to accommodate aspects that address the underlying root causes of conflict and ecological instability, it is important that the notion of lifesaving is differentiated from health security. As indicated elsewhere in this article, lifesaving, especially as it relates to the environments engulfed in conflict and ecological instability, challenges the current human security framework by suggesting that communities that are victims of both conflict events and ecological disruption, cannot be secured by only treating the immediate diseases and epidemics, rather, by addressing long-term *livelihood restoration* activities and assets. For instance, although humanitarian assistance is an important aspect of lifesaving, it does not feature among the dimensions of human security framework, raising the question as to whether such long-term activities and assets should be discounted or infused as an integral part of human security? We argue that the current human security framework on health security is inadequately structured to accommodate such nuances of communities who suffer double tragedies- CEF and ecological fragility (hence this article adopts the notion, *Conflict-Ecological Fragile Societies* (CEFS). The article examines the normalization of the notion of *Lifesaving* as an integral, at the same time a distinctive, part of human security. The next section pinpoints the*why* and *how*.

3. Conceptualizing lifesaving as (an additional) a dimension of human security

It is never easy to conceptualize and perhaps operationalize a concept that is underdeveloped in the scholarly discourses and literature. The notion of lifesaving is a necessary component of human security, but less explored in social sciences to merit an in-depth literature review. Much of the conceptual treatment in this section is my own initiative in trying to gauge its (mis) fitability as a distinct dimension of human security. Despite its absence in the academic literature, the notion lifesaving, has been applied to various aspects of public health emergency training and disaster preparedness (Shaukat et al. 2023). This essentialisation of Lifesaving, including, supportive attitude, community participation, safety and security, brings to the fore the relationship between the notion and human security. At the core of human security lies in the human-centric focus which is inherent in human development- that is, safety from threats such as disease, hunger and secondly, protection from disruption in the daily life (UNDP 2005).

For the purpose of analysis in this article, the notion of lifesaving can be conceptualized on the basis of three global debates: a) Lifesaving is a human right issue that promotes right to healthy living conditions; b) Lifesaving as an agent that promotes the socio-economic development and that it increases people's wellbeing; and c) Lifesaving is a human capability enabling people make appropriate choices about lives.

The first conceptual dimension is domiciled in the human rights law discourses (Lui 2021; Buchanan 2009; Forman 2010;

Young 2008; Liebenberg 2005). This proposition is framed within Article 12 of the International Covenant on Economic, Social and Cultural Rights (ICESCR) providing for the right to good health (cited in Lui 2021). It states that the state parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health (Skogly 2012). The state obligation goes beyond immediate health care services. The underlying preconditions (food, water and sanitation) for the provision of good health services must be accessed by those whose lives are being saved. However, be as it may, does this right entail long-term lifesaving interventions? If so, does the current human security framework provide a comprehensive policy that can go beyond emergency treatment and healthcare facilities? While the current human security framework is narrowly structured, it nevertheless gives important pointers on vulnerabilities of communities with inadequate access to health facilities. The focus however should be enhanced, to include long-term lifesaving interventions such as livelihood restoration. For instance, when there is failure to provide adequate food to population, there is a gross violation of the people's basic needs and rights. It is fairly acceptable that States are rarely apprehended to bear the cost of failed lifesaving. In this study, we note that the community in Gedo region of Somalia are denied the right to good health resulting from a combination of intractable conflict and ecological fragility- CEFS. The ecological factor here is not absolutely a human error. This is so given the agroecological zone in which the region falls naturally receives erratic rainfall, that often leads to low farm productivity. Even though this aspect of human security is covered under environmental security and other dimensions, does the current framework provides for long-term lifesaving skill development? Is the denial of population access to lifesaving assets and activities justifiable within the Somalia's of African Union's court systems? Addressing these questions require an examination of the notion of lifesaving as a bed-rock for promoting socio-economic development among communities suffering double tragedy- CEFS.

Secondly, lifesaving promotes the socio-economic development within communities and that it increases people's wellbeing (Busumtwi-Sam 2002; Poku et al. 2007; Ajdari and Asgharpour 2011; Stoett 1999). This debate is mainly grounded in the Japanese and Canadian foreign policy frameworks- community development and liberal international, respectively (Fukuyama 2004; Axworthy 1997). Both the broad and narrow schools of human security espouse individual and community well-being and protection from threats such as war, hunger, and socio-economic underdevelopment (Owen 2004). The pioneer advocates of human development index (HDI) (as an alternative measure of human progress beyond GDP), Mahbub ul Haq and Amartya Sen (cited in Homolar 2015: 858), intended to debunk the dominance state-centric approach to the measure of economic security. The core of Haq and Sen's approach lies in the concept of human development which is inherent in good governance and socio-economic development relationship. The basic idea is that human security should be considered in its holistic dimensions that ensures improved human lives and progress remains at the centre of development (UNDP 2022). This approach is predominantly concerned with the people's wellbeing, capability and human progress. While these conditions are sometimes viewed as components of human security, when viewed in conjunction with lifesaving skills can enable states and development analysists to make measurable connections between lifesaving, people's wellbeing, state fragility and security. The Gedo case study in this article serves to benchmark how livelihood restoration can serve to correlate conflict and ecological fragility with threats to individual long-term lifesaving assets and activities. Yet despite the linkages between the lifesaving skills and long-term livelihood assets and activities, communities predisposed to double tragedy of conflict and ecological fragility remain trapped in insecurity due to lack of conceptual differentiation and policy clarity. Thus, the need to redefine threats and perhaps

restructure human security framework and objects to differentiate between lifesaving objects from health security.

The third and final conceptual dimension is the human capability that enables people make appropriate choices about lives and what people are able to do and be (Sen 1984; Sen 2004; Alkire 2002; Alkire 2005; Stewart 1995). Amartya Sen, the main proponent of the capability tool offers alterative framework in which he argues development intervention should focus on quality of life and addressing any obstacle that hinders people's freedom to live the life they value (Sen 1985). It emphases the individual agency, access to opportunities and empowerment in human development (Onditi and Odera 2017). But then, how does these set of capabilities transform people's lives? On this, Sen (1985) proposes three dimensions underpinning the capability approach: a) long-healthy life; b) access to knowledge; and c) a decent standard of living. The point of convergence between capability tool and human security framework is the centrality of people in the process of development. This relationship is strengthened by human development scholars (Gasper 2010: 27) who coins the phrase "capability to be safe", to demonstrates why people requires knowledge and food in order to live decent life. It is clear the two concepts are conceptually interactive. However, the differences are not difficult to discern from the enormous literature of human security and capability approach. Whilst the capability approach focuses on the end as the critical determining factor in people's well-being, the means through which people's safety and opportunities is attained is as important as the end. Moreover, public policy scholars (Liotta and Owen 2006) have argued that not all human security issues involve physical threats.

Liotta introduces "vulnerability" as a soft issue arguing that some regions are more vulnerable to climate change, conflict and humanitarian catastrophes, hence the need to rethink the current human security framework. On a similar note, Vogel and O'Brien (2004) have stressed the importance of distinguishing between internal and external aspects of vulnerability in the context of human security intervention. Key considerations in what they call, "double structure vulnerability" (cited in Liotta and Owen 2006: 45) model include; a) human ecology; b) entitlement; c) access to livelihood assets; and d) crisis and conflict. The model abode well with the conceptualization of the notion of lifesaving as a long-term building block for human security. In this case, rather than, confining capability to immediate health interventions (medication and emergency), lifesaving interventions should also involve long-term livelihood restorations activities and assets that ensures communities experiencing double tragedies of conflict and ecological fragility are equipped with lifelong learning skills enabling them to overcome vulnerabilities (Bohle 2001). However, the application of capability tools in designing projects and policies for lifesaving intervention will have to content with its critics. For instance, capability approach does not necessarily pay attention to groups in the society such as women, children (Robeyns 2003) or even communities with common livelihood assets and activities. In view of this limitation, when designing development projects in patriarchal societies such as Somalia, actors should strive to transform individual agency into group's agency (Robeyns 2003). For example, rather than focusing on emergency capabilities, community-based lifesaving centres can offer alternative safe spaces for communal learning soft skills. But also rethinking human security framework is equally important in restructuring human security framework. And so, for analytical purposes it is crucially important to unveil the structural components of lifesaving (including institutions and structures) as a distinct dimension of human security. This paper is based on post-Lifesaving and Livelihood Restoration Programme III, in Gedo region of Somalia. Before analyzing the outcome of the evaluative study, the following section outlines the methodological consideration.

4. Methodology

4.1. Trial Design

This study is a semi-Cluster Randomized Controlled Trial (S-CRCT) with individual-level outcomes and treatment at post-lifesaving and livelihood restoration project (LLRP) III[2]. The counterfactual is sub-regions listed as eligible, as indicated for LLRP III. The unit of randomization is a sub-region, where on average, LLRP III can form 2-4 groups of 10 people. This approach was adopted to address the inevitable biasness that may arise when people from the same subregion have been or are not part of the LLRP III. We randomly allocated subregions to the treatment and control group from selected list of eligible subregions. All eligible villagers/household heads were recruited for the study. The control group participants were waitlisted and integrated into the LLRP III.

4.2. Eligibility criteria

Participants of the study were beneficiaries of the Lifesaving and Livelihoods Restoration (LLRP) III implemented in six districts[3] within the Gedo by VSF Suisse in partnership with Emergency Pastoralists Assistance Group (EPAG) and Nasib Relief and Development Organization (NARDO) that was conducted in October 2019. The goal of the program was to provide immediate access to food and emergency support to restore livelihoods and alleviate suffering for the vulnerable drought-affected population in Somalia. With a total budget of USD 1,500,000 from USAID/OFDA for 12 months period, the program had two main sectors: agriculture and food security, and water, sanitation and hygiene (WASH). Every participant recruited by the facilitator of the VSF Suisse organization for potential participation was eligible to participate in the study. The LLRP III intervention included some members/defectors of the Al Shabaab terror group who wage violence in the villages[4]. To address the possibilities of stigmatization over the use of “members/defectors” of Al Shabaab, VSF Suisse facilitators worked hand in hand with village elders, sub-regional elders, family members, police to select participants based on mutual agreement.

4.3. Study tools

This study adopted an evaluation design to gauge the relevance, effectiveness, efficiency, sustainability and impact of livelihood restoration activities and assets in Gedo region of Somalia. As earlier described, Gedo experiences double tragedy of armed conflict and ecological fragility. The evaluation used meta- questions formed around the evaluation criteria of relevance, effectiveness, efficiency, impact and sustainability, to assess whether the program met its objectives. Focus Group Discussions (FGDs) and Key Informants (KIs) were utilized to gain in-depth understanding of the factors determining the absorption of livelihood restoration assets and activities as a long-term lifesaving intervention.

4.4. Selection criteria

In this evaluation process, pastoral households comprised about 52% of the respondents while agro-pastoralists and other respondents making up the remaining 48% of the informants. The evaluation took a phased approach starting off with detailed review of available documents, followed by the collection of a mix of both quantitative and qualitative data through the interviews with VSF Suisse, EPAG and NARDO staff, community leaders, local administrators, livestock professionals and service providers, focus groups discussions with various community groups, field observation of water and irrigation infrastructure, and triangulation of different sources.

In order to answer the key evaluation questions, both qualitative and quantitative data were drawn from both primary and secondary sources. Firstly, secondary data was obtained through a review of program documents (including technical proposals, baseline and other relevant assessments), donor reports, and monitoring data and reports; as well as the wider body of literature on humanitarian context, human security, ecological stabilization and food security in Somalia (Federal Government of Somali 2017). In-depth interviews were held with selected persons within the community, program staff, key stakeholders, and local authorities, and village and local leadership in the target districts and villages, while in the FGDs, an inclusive group of between eight to twelve men and women were selected in each village and discussions were held to explore the key evaluations in more detail. The interview and FGDs guides used to facilitate these discussions were open ended and designed to be detailed enough as to gather the necessary information on program planning, implementation, participation, ownership and sustainability. Table 1 provides the number of respondents interviewed, FGDs conducted and infrastructures observed during the evaluation exercise.

Table 1. The evaluation respondents, FGDs and infrastructures observed during the evaluation exercise

District	Number of KIIs	Number of FGDs	Number of infrastructures observed
Belet Hawa	10	2	2
Elwak	11	2	2
Dollow	11	2	2
Luuq	10	2	2
Others	1	-	-
Total	43	8	8

Source: Evaluation of the VSF Suisse Lifesaving and Livelihoods Restoration Program data, 2019

Considering the expansive geographic scope of the program and the time and context limitations, it was not practical to develop a fully randomized household survey (hence, *semi-Cluster Randomized Controlled Trial (S-CRCT)*) of the population within all the regions. Furthermore, as a result of the access and security issues, particularly the insecurity in Bardhere and Garbaharey, the fieldwork was limited to number of locations within the other four districts with the region. Nevertheless, the team was able to extract and triangulate valuable information from a number of source to build the required picture for assessing the performance of the program against the set indicators.

4.5. Intervention

The one-year USAID/FFP funded Lifesaving and Livelihoods Restoration Project III (LLRP III) aimed at providing immediate access to food and emergency support to restore livelihoods and alleviate suffering for the vulnerable drought affected population in Gedo region (UNFPA 2015). The program built on the experiences and lessons learnt in the previous OFDA awards in the same context and consolidated and scaled up the gained made to alleviate suffering through helping food security needs of the population. It was implemented within the six districts of Gedo region in partnership with (EPAG) and NARDO. The program delivered its goal though two sectors whose objectives were: i) Agriculture and food security: alleviate suffering, protect and restore the livelihoods of population in distress from the effect of drought; and ii) Water, sanitation and hygiene: to rehabilitate community assets and reduce vulnerability of Gedo communities to droughts.

5. Results

The evaluative study sought to assess whether the program targets and indicators were achieved (as outlined in Table 2), and the results that follow are an accumulation of secondary data review and primary data collection from KIIs, FGDs and field observations conducted within four districts of Gedo region. The program targeted 45,000 people across the six districts of Gedo region, of which 4,500 were internally displaced persons (IDPs). Table 2 provides the performance indicator for two sectors: agriculture and food security, and water, sanitation and hygiene as outlined in the program proposal.

Table 2. Performance indicators for agriculture and food security, and water, sanitation and hygiene

Agriculture and Food Security	Targets
Livestock	
Number of people benefiting from livestock activities	45,000
Number of animals benefiting from livestock activities	400,000
Number of animals owned per individuals	19
Number of people trained in livestock	240
Veterinary pharmaceuticals and other medical commodities (VPMC)	
Number of veterinary facilities out of stock of any vet medical commodity tracer products for longer than one week	0
Number of animals treated or vaccinated	400,000
Number of animal disease outbreaks	0
Number of people trained on veterinary medical commodity supply chain management	40
Irrigation	
Number of hectares under irrigation	80
Number of people directly benefitting from irrigation activities	2,400
Length of irrigation system implemented	18Km
Percentage of households with access to irrigation	80
Number of months of household food sufficiency	3 – 6
Water and Sanitation	**Targets**
Number of people directly utilizing improved water services provided with OFDA funding	13,320
Estimated safe water supplied per beneficiary in litres per person per day	15
Percentage of water user committees established or trained that are active at least 3 months after training	100%
Percentage of HHs whose drinking water supplies have free residual chlorine >0.2mg/l	100%
Percentage of water points developed, rehabilitated or repaired that are clean and protected from contamination	4
Hygiene promotion	
Number of people receiving direct hygiene promotion campaign	548
Number of people targeted by hygiene promotion who at least know three of the five critical hand washing times	70
Number of people targeted by hygiene promotion with soap and water at designated hand washing location	70
Percentage of people targeted by hygiene promotion who store their drinking water safely in clean containers	70

Source: Evaluation of the VSF Suisse Lifesaving and Livelihoods Restoration Program data, 2019

The following results are presented according to the evaluative criteria of relevance, effectiveness, efficiency, impact and sustainability.

5.1. Relevance of Interventions

The evaluation found out that the interventions under LRRP III were relevant to the lifesaving needs of the beneficiaries and strategic objectives of VSF Suisse, 2018 Somalia Humanitarian Response Plan (HRP) and its donors. While VSF Suisse aims to the well-being and resilience of vulnerable populations by promoting the health and productivity of their

livestock within a sustainable environment, the objectives of the 2018 HRP were to provide lifesaving assistance (reduce acute malnutrition, reinforce the provision of protection services to affected communities and strengthen resilience). In line with these objectives, the LRRP III was meant to alleviate suffering, protect and restore the livelihoods of the population in distress from the effect of drought and to rehabilitate community assets and reduce the vulnerability of Gedo communities to double tragedies of armed conflict and ecological fragility (CESF).

Gedo was among the most affected region by the drought. The context indicators clearly demonstrated the needs for the lifesaving interventions - VSF Suisse's own detailed assessments and those of partners highlighted that 85,000 and 13,000 households in Gedo were stressed or in crisis food security status (FSNAU 2018)[5]. Droughts, protracted insecurity and incursions of Al Shabaab had resulted in loss of life, market and trade disruption and restriction of humanitarian access adversely affecting the food security of poor households,

> *The prolonged droughts combined with the frequent attacks by Al Shabaab in our area affects how we live. I have lost close family members in a span of two months. The attacks lead to market closure making it difficult for us to trade. I remember the previous drought killed half of my cattle herd. All these happenings increase my stress levels (Anonymous, Elder, Bardhere District, Interview, October 2019).*

On similar note, the insights from FGDs and KIIs showed that the interventions were timely and relevant. The livestock and WASH interventions fall within the framework of *lifesaving* both for humans and livestock, facilitating access to productive herds and water for livestock and humans. One government official in Gedo had this say,

> *The importance of livestock in food security and livelihoods of households in Gedo cannot be underestimated and how important it is to protect these assets (District Commissioner, Luuq District, Interview, October 2019).*

Gedo, especially rural areas within Elwak and Garbaharey that are further away from the rivers face water scarcity. During FGDs in Waberi, Elwak, respondents highlighted that water sources in the region were scarce, prone to contamination, hence the need to restructure the current intervention framework to include long-term lifesaving initiatives such as water provision and food aid,

> *We could not get water from the Waberi shallow wells before the pump installations. Now we have water and we no longer experience the long queues for people and animals in search of water (Anonymous, Female participant in Elwak FGD, Interview, October 2019).*

As in other parts of Somalia, the livestock sector in the Gedo region played a central role in food security, incomes and nutrition of households in the region, with up to 80% of incomes being derived from livestock[6] and milk constituting an important component of pastoral diets. However, the sector was characterized by low herd productivity due to seasonal feed shortages, especially in drought years or dry season, poor quality forage and a high burden of diseases. The

baseline assessment conducted by VSF Suisse and partners noted a high prevalence of diseases during the months of July to September in donkeys, sheep and goats, compared to the other seasons[7]. The major livestock diseases/cases reported were worms, Contagious Caprine Pleuropneumonia (CCPP), Black quarter, diarrhea, mange, pneumonia, trypanosomiasis, tetanus and foot and mouth disease. These diseases impacted directly on the households as they reduced the quantity and quality of livestock products available to household as they decreased productivity and caused mortalities of livestock.

The support to community animal health workers (CAHWs) and veterinary drugstores was considered very relevant considering the limitations in access to veterinary services in the region. The CAHWs were instrumental in increasing the coverage of the program, as they were able to reach pastoralists in insecure and difficult to reach areas. The mass treatment team has increased the demand for quality services, as the impacts of the treatments and vaccination were clear. The veterinary drugstores were key to establishment of sustainable quality veterinary services, as without them access to the drugs for the CAHWs would be difficult once the program exited.

Farmers in riverine areas of Gedo were growing food and fodder crops, including a variety of maize, beans, sorghum and fodder for domestic consumption and sale. Asked about the key shocks that affected livestock and crop productivity, droughts, flooding, insecurity and displacements were regarded as the major shocks in the area. Erratic weather patterns were said to affect crop and livestock production causing significant losses in livelihoods and limiting food availability. Drought was the recurrent hazard in the region with serious consequences on lives and livelihoods. The situation was made worse by the dismal agricultural infrastructure[8] that limited improvement in production. Along the river, water was sourced through a series of canal system. These canals were prone to silting and overgrowth of weeds and other plants. Consistently, in the baseline FGDs, the participants identified the rehabilitation and maintenance of these infrastructures as a priority.

Baseline assessment for the program highlighted that as a result of the poor state and siltation of the irrigation canals, lack of irrigation equipment and farming tools, and high maintenance costs of the infrastructure, the area under cultivation in most of the target areas was low. The yields averaged 30 – 60Kg for maize, 20 – 30Kg for beans, and 20 – 70Kg for sorghum, while that of fodder was estimated at 70 – 900 bundles for maize, cowpeas, Sudan grass, beans and sorghum (VSF Suisse 2019)[9]. The other challenges included regular flooding of the farmlands, lack of storage facilities and limited capacities of the farmers in terms of crop husbandry, business development and marketing.

The rehabilitation of the shallow wells and pans was crucial in responding to the critical needs of most vulnerable populations. The baseline study had established that 90 percent of villages in Gedo region were reliant on unsafe water sources for drinking and domestic purposes. Other than the river, shallow wells and pans and few boreholes remain the main source of water for both livestock and human populations. Most of these water points were under pressure, unable to meet the demand due to the increased population depending on them in the dry season. With years of disrepair, lack of protection, poor management and recharge due to the lack of rains, the yields were too low and a number of them were contaminated. VSF Suisse rapid assessments revealed the region usually faced severe constraint in access to drinking water and water for livestock, as the status, yields and management of the water structures was poor, and lacking in

protection.

The region witnessed outbreaks of acute watery diarrhea and other water-borne diseases, with most of the rural areas lacking in hygiene awareness and sanitation services. The Joint Multi-Cluster Need Assessments by UNOCHA (2017) found that households in Elwak, Garbaharey and Luuq were drinking contaminated or unclean shallow well water. The majority of the households 66% had no training on hygiene and treatment of water. Similarly, handwashing at critical times was low, especially among rural communities as it was reported in 2017 (UNOCHA 2017). Other challenges faced by the community included a high prevalence of waterborne diseases, limited access to and coverage of latrines, poor solid waste management and inadequate *lifesaving* skills within the community. This reflected the importance of not only increasing access to water through rehabilitation of infrastructure, but also of sanitation and hygiene awareness as complimentary activities alongside the water interventions. At the time of conducting this study, the levels of malnutrition rates were highest, with global acute malnutrition (GAM) rates was at 15% and above with 10.7 or more of the children having Mid Upper Arm Circumference (MUAC) below the 125mm threshold.

5.2. Efficiency and effectiveness

The planned program output targets were generally met, with the program reaching the planned number of beneficiaries and geographical locations. The program built on the elaborate relationships, networks and infrastructure, including staffing and offices established under the previous programming. VSF Suisse developed relationships and had previously worked with the animal health professional, including the South West Livestock Professional Association (SOWELPA) and regional livestock administration that had a wide coverage across the regions, and was efficient in terms of cost and timely in reaching livestock populations in the region.

During the FGDs and KIIs, respondents were asked about who was included/excluded and why, how they defined priority target groups, the existence of specific targeting mechanisms to ensure the poorer households are reached and their opinion of the targeting strategy. The LLRP III interventions targeted a range of beneficiaries including the pastoral, agro-pastoral and IDPs populations in Luuq, Dollow, Belet Hawo, Garbaharey Elwak and Bardhere districts. While livestock interventions were provided across the region targeting core breeding herd, and lactating and replacement stock, based on access and resources available, other interventions were geographically targeted in consultation with the local administrations.

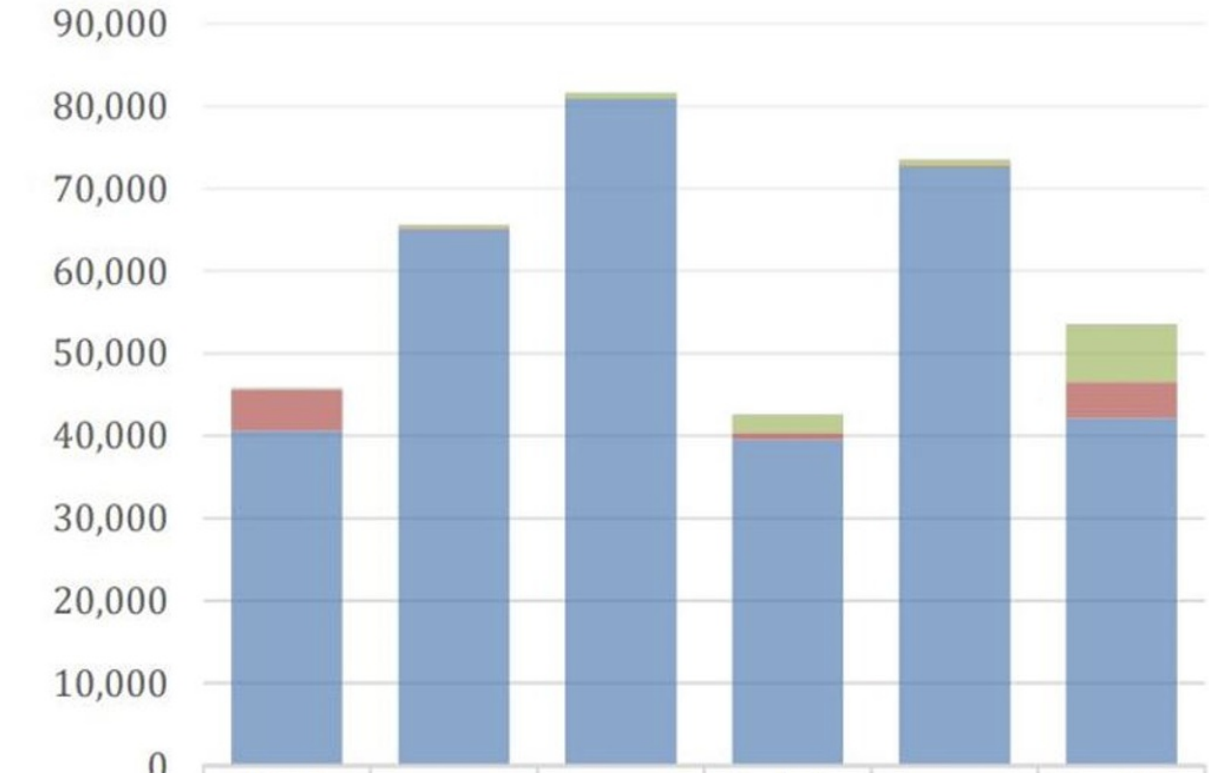
The selection criteria based on locally agreed vulnerability criteria, including women headed households, households with elderly or disabled members, households with limited assets or livestock, or households with special needs or that were highly indebted. For the income earning opportunities such as cash for work (CfW), while supervised by a management committee of eight persons, the beneficiaries selected included: youth (18 –25 years), women, religious leaders, elders and representation from vulnerable groups such as female headed households and people with disability.

The sustainability of a community-based animal health delivery system depends on a careful selection process of the CAHWs. It must be noted, as VSF Suisse had for a long time selected and trained CAHWs in the region, there was a general understanding of the selection criteria and the selection process of done in consultation with the community,

District Veterinary Officers (DVO) and Regional Veterinary Officers (RVO) and SOWELPA. During the evaluation, it was observed that all the selected CAHWs were active and motivated, clearly indicating the success of the selection process. Some of the selection criteria for the CAHW included; a resident of the locality and engaged in livestock production – at least the potential CAHW owned livestock and willingness to work within the community. As for the CfW beneficiaries, the selection was conducted by VSF Suisse, EPAG and NARDO in close collaboration with the local elders and administration based on a pre-define selection criteria. Some of the selection criteria for CfW beneficiaries included; vulnerable households with no or few livestock assets or alternative income sources and female headed households or households with people with disabilities or elderly member.

During the FGDs, respondents were asked about their satisfaction with the selection process; majority of them were satisfied with the process and people selected[10]. With respondents saying that the process of fair and transparent, they also noted that generally the people in need were much greater than the number targeted during the program implementation, and hence they request that the program duration be increased. Asked why they were selected; the FGDs respondents were able to identify and describe the selection process and criteria used.

The program aimed to deliver a number of outputs across the two sub-sectors: agriculture and food security, and water, sanitation and hygiene. Appendix (Table 6) compares the level of delivery on the key program outputs against the planned outputs. To start with the program conducted planning meetings in December 2018 for VSF Suisse, EPAG and NARDO teams.



	Belet Hawo	Luuq	Dollow	Garbaharey	Elwak	Bardhere
Donkeys	87	53	20	7	7	2
Camels	93	385	707	2,133	723	6,943
Cattle	4,993	199	18	938	151	4,405
Shoats	40,603	64,991	80,833	39,480	72,591	42,133

Fig. 1. Number of livestock treated and vaccinated by the teams

Source: Compiled by the Conflictology Observatory and Prediction Lab- 2023

Fig.1, a total of 331,378 animals for 48,138 households were reached, which was 83% of the target. Considering access to animal health services and feed were two of the critical challenges facing the livestock sector in the region, the program supported a “package” of lifesaving interventions to ease access to these inputs. Livestock treatments and vaccination targeting 400,000 animals of 45,000 households were conducted in all the six districts, following which support sustainable access to animal health were supported through 11 veterinary drugstores, 240 CAHWs and capacity building of the communities.

Additionally, routine treatments on a cost recovery basis, especially in difficult to reach areas were conducted by the trained and kitted[11] 120 CAHWs. Though it was difficult to adequately supervise and collect data from all the CAHWs due to the prevailing insecurity in rural parts of Gedo, 123,436 animals for 97,656 households were reached by the CAHWs as at the time of the evaluation.

While 100 existing CAHWs were provided with drug kits, an additional 20 CAHWs were trained for 35 days and provided with veterinary equipment and drug kits. The CAHWs linked to the supported veterinary drugstores for sustainable access to veterinary drugs and equipment supply. Table 3 provides the achievements in the livestock sub-sector in each district.

Table 3. Achievements under livestock interventions

District	Existing CAHWs	New CAHWs	Supported vet drugstores	Dialogue meetings	One health trainings
Belet Hawo	26	-	2	3	1
Luuq	6	-	2	3	1
Dollow	5	-	2	3	-
Garbaharey	41	3	1	-	1
Elwak	12	6	2	3	1
Bardhere	10	11	2	-	-
Total	100	20	11	12	4

Source: Evaluation of the VSF Suisse Lifesaving and Livelihoods Restoration Program data, 2019

54 CAHWs and 66 community health workers (CHWs) were trained from the 4 One health trainings on the concept of one health for four days covering: natural resource management, zoonoses, misuse of antibiotics and emergence of resistance, food security related risks to livestock products, human nutrition, and reporting of zoonotic diseases. In addition, 12 dialogue meetings were also conducted in four districts on the inter-linkages between animal, human and environmental health. A total of 13 community dialogue sessions (out of 18 targeted)[12] were held with pastoralists Belet Hawo, Dollow, Luuq and Elwak districts to discuss the link between animal, human and environmental health (one health). The dialogue sessions were attended by 387 people (255 female[13] and 132 male), which was 72% achievement of target.

As part of supporting veterinary infrastructure and institutions in the region, the program worked with existing veterinary drugstores, RVO, DVOs and SOWELPA. Rather than import veterinary drugs and equipment, the program procured them from Gedo Drugstore (GDS) that could supply safe, effective and quality drugs. This not only ensured strict control of the quality of products sourced, but also was meant to inject cash into the local economy while build the capacity of the drugstore to develop networks for sustainable supply of products in the region. The drugstores interviewed reported that they received a four (4) days training on veterinary commodity supply chain management covering: review of handling of veterinary pharmaceuticals and other medical commodities (VPMC), types of veterinary pharmaceuticals, identification of good quality VPMCs, proper handling, storage and transportation and use of VPMCs, inappropriate application of VPMCs and risks, recording and stock control, sources of quality VPMCs types of veterinary pharmaceuticals, identification of good quality VPMCs, proper handling, storage and transportation and use of VPMCs, inappropriate application of VPMCs and risks, recording and stock control, sources of quality VPMCs, vaccines – proper handling, storage, transportation and application of vaccines; and business skills.

The evaluation found that the program targets in fodder and irrigation were either met or surpassed. Fodder production was supported through the 18 Km irrigation canals, training of farmers and provision of fodder inputs such as seeds and tools. During field visits to the fodder producers, the evaluation team observed that planned 18 Km irrigation canals were rehabilitated (10 Km in Luuq – Luuq Goley, Boyle and Doryanley, and 8 Km in Belet Hawa – Oda, Gawido and Malkariyey) through cash for work (CfW) employing a total of 200 individuals across the targeted villages. Each of the CfW participant worked for 30 days clearing 1.5M3 per day and earning USD 5 per day. Payments for cash for work activities were conducted through mobile money transfer, once work was completed and verified. Also, 48 lead farmers were trained as ToTs on operation and maintenance (O&M) of irrigation equipment, agronomic practices, and business skills training[14]. The program established 8 demonstration plots were established, 800 farmers trained by the lead farmers (ToTs) and 2 days demonstration sessions organized at village level by the lead farmers to disseminate the knowledge to the large group of farmers. The farmers were also supported with seeds and other inputs, including farm tools (wheelbarrow, forked jembe, sisal, sickle), seeds (2kg of Sudan grass, ¼ of velvet beans, ¼ of Lucerne, 2kg of maize, 2kg of beans). Table 4 provide a summary of the number of beneficiaries of the irrigation canals and agronomic trainings conducted during LLRP III.

Table 4. Number of beneficiaries reached through the fodder production/irrigation interventions

District	CfW beneficiaries	Fodder ToTs – lead farmers	Agronomic practices training	O&M training	Business skills training	Demonstration plots
Belet Hawo	90	18	100	400	100	2
Bardhere	-	18	100		100	2
Dollow	-	6	200		200	2
Luuq	110	6	200	400	200	2
Total	200	48	600	800	600	8

Source: Evaluation of the VSF Suisse Lifesaving and Livelihoods Restoration Program data, 2019

Under the WASH sub-sector, the program rehabilitated one water pan (at Owru Dimtu, Elwak) and three (3) shallow wells (in Waberi village, Elwak, and Garsow and Aagshabelle in Luuq) and trained a committee[15] on water management structures for each facility to ensure sustainable access to water supply for the targeted pastoral livestock and households. Additional infrastructure, including two concrete troughs for watering livestock were provided at the water pan, while in the shallow wells, 5,000 litres overhead tank, solar pumps and two concrete troughs were provided.

The evaluation team visited the shallow wells and pans rehabilitated and population estimates showed that 9,900 households were using the improved water services compared to initial targets of 13,320 households. The rehabilitated water pan had not percolated water at the time of the evaluation as it was just at the start of the rainy season. Nevertheless, based on the discussion of the local communities, the pan would be utilized by a much larger population as was evidenced by the numbers utilizing the shallow wells. Data from routine monitoring showed that the rehabilitated

shallow wells were chlorinated to ensure to give a Free Residual Chlorine (FRC) level of 0.5mg/l to ensure the potability of the water supplied to humans. In addition, each of the households was accessing on average 15.32 litres of water per person per day for drinking, washing, cooking and other uses.

To contribute to changing collective and individual behaviour, and foster ownership and sustainable use of water and sanitation facilities, the program trained 80 CHWs, hygiene promoters (HPs) and CAHWs for five (5) days as trainers (ToTs) for community training and awareness creation. The households were also supported with jerrycans with lids and hygiene billboards[16] erected in all the locations where the water infrastructures were rehabilitated. Findings from monitoring data and evaluation showed that of the target of 584 individuals targeted for the hygiene messaging, the program reached 608 individuals, in addition to the 80 CHWs, HPs and CAHWs and 60 water user associations (WUAs) committees (Table 5). Of these households, 78% of them were able to identify the five critical times for handwashing, 21% had soap and water at designated handwashing locations and 68% were storing their drinking water in clean and covered containers, compared to a 70% target for each indicator.

Table 5. Number of beneficiaries reached through the WASH Lifesaving interventions

District	HPs ToTs	WUAs training	HHs reached through HPs	Water point users
Luuq	40	30	228	1,200 HHs
Elwak		30		500 HHs
Total		60		1,700 HHs

Source: Evaluation of the VSF Suisse Lifesaving and Livelihoods Restoration Program data, 2019.

5.3. Impacts

Over and above the key indicators outlined in the monitoring plan (Table 2), the beneficiaries overwhelmingly indicated that the program had had significant positive impacts. Below we detail the impacts of the program at the individual, household and community levels, as well as its impact upon the markets and other facets of the community.

A*griculture and food security interventions.* The "package"[17] of livestock interventions was said to be associated with reduced risks/incidence of disease outbreaks and enhanced livestock productivity. Livestock professionals interviewed noted that there were no livestock disease outbreaks, which was attributed to the livestock vaccination and treatments undertaken in the region. Similarly, FGDs participants associated the program with positive impacts on livestock health and productivity. The District Commissioner for Dollow District had this to say,

> *When you talk about the health of our livestock, VSF Suisse comes to our mind – they have provided years of services directly through the team or community animal health workers, for the past one year our people have benefitted from livestock vaccination and treatment services. The veterinary team has also increased for we have seen more community animal health workers carrying out different activities in Dollow district" (Anonymous, Key*

> *Informant 2, October 2019).*

The continuous engagement of veterinary teams and CAHWs in the provision of services meant increased human capital in veterinary service delivery for the region. Considering that livestock was the primary asset for the most population in the region, the vaccination and treatments provided significant income benefits for these households from the reduction in livestock mortality, increased production and savings from the costs of treatments of diseases.

As noted in the baseline survey, veterinary services in the region were in its infancy, which was exemplified by the prevalence of livestock diseases that caused mortalities and losses in production and markets, limited access to quality inputs, and tendency towards low input production. Livestock keepers indicated that without animal health services they incurred losses through diseases. Asked to compare the disease situation before and after the intervention, stakeholders and beneficiaries said there was a decrease in the incidence of diseases especially external and internal parasites. In terms of changes in the incidence of diseases, while the CAHWs indicated a definite reduction in the incidence of diseases, the livestock keepers reported the risk of an outbreak among the vaccinated herds had reduced though there was no much change in the general disease incidence. They reported that as vaccinated animals were protected, they were able to market them better.

The status of the CAHWs in the community was dependent on the success of their treatments, which in turn is dependent on their knowledge of the clinical signs, ability to diagnose diseases, and the ability to use the correct drug and dosage. It was observed that all the CAHWs interviewed were fairly knowledgeable and the case fatality rate was reported to be significantly when animals were treated by the CAHWs in comparison to those attended to by livestock keepers themselves. The veterinary team leads associated engagement with VSF Suisse and other partners with career growth – the previously trained and experienced CAHWs were engaged as Team Leaders in subsequent campaign and were also recognized by the government and appointed as District Veterinary Officers of their respective districts.

The evaluation found that the program not only surpassed its targets in fodder and irrigation components, but also contributed to the incomes of the producers and feed security[18] in the target areas. In the FGDs, participants consistently mentioned rehabilitation of irrigation canals as the main intervention that increased yields followed by input distribution and the training. While the canals were said to be serving an additional 150 – 200 farmers who had established secondary canals on the rehabilitated primary canal opening up news areas for irrigation, the seeds distributed had a high germination rate. Another key finding was the new opportunity identified by fodder producers in the production of fodder seeds such as “Sudan grass seeds” which were in short supply not only in Gedo but also the neighbouring Mandera county, Kenya. At peak seed scarcity period when farmers were exporting seeds to Mandera, they were able to earn an average of USD 8 per Kg of Sudan grass seeds, while the prices in normal seasons were USD 3 – 5 per Kg. Not only was the income from the sale of fodder seeds considered a profitable business, but it also represented a multiplier effect of the fodder production interventions. Addition, the rehabilitation of the irrigation canals through CfW provided opportunities for earning non-farm incomes during the agricultural lean season. The incomes from CfW activities was primarily used to meet basic needs, primarily household food expenditures.

Water, sanitation and hygiene interventions. The WASH interventions brought about positive impacts on the lives of beneficiaries helping them access safe drinking water and sanitation at a critical time. By opening up a new water point at Waberi, Elwak, the intervention immensely improved the target groups' access to adequate clean safe water both for human and animal consumption and reduced pressure on the existing water, in addition to reducing queue time. During FGDs, communities mentioned that the program conducted chlorination of the water points – a clear indication that the program put an effort in providing clean water to a people, an effort much appreciated by the community. Though there was no quantitative data, FGDs indicated that the improved access to water combined with chlorination and distribution of jerrycan had reduced the incidence of diseases due to the program. Further, respondents also indicated that the rehabilitation, installation of the solar panels and the chlorination of the shallow wells had improved water quality while decreasing the time and labour spent on getting water from the wells. One FGD participant had this to say,

> *Before the installation of solar panels on the shallow wells, we would spend nearly the whole day queuing for water and that was greatly affecting our other home keeping activities. We are grateful for the rehabilitation, we now spend less than two hours to get water and the water is clean (Anonymous, Female participant in Elwak FGD, Interview, October 2019).*

As a result of the hygiene promotions sessions, community members could still remember the key hygiene messages they learnt. The evaluation found that 78% of the households could identify and practiced the five critical hand washing times[19]. However, during the FGDs, the respondents highlighted the need for more investments in improving access to water in many locations within the target regions, which will also need to be complemented by comprehensive hygiene promotion activities.

Incomes and markets. The engagement of the veterinary teams and CAHWs also meant direct incomes to these professionals. While during the 20-day campaign period, the Vet Team Leader earned USD 35 per day, the Vaccinators and Recorders were earning USD 30 per day. Even when there were no campaigns, these professionals indicated engaging in the provision of clinical services treating an average of 1,000 – 1,500 animals and earning USD 1,200 – 1,500 per month. As for the trained CAHWS, they were said to have increased the coverage of services – they were seen as accessible, available to meet the needs of livestock keepers, trusted and affordable. In the FGDs, the participants indicated that access to animal health services had improved in villages with CAHWs and surrounding areas. However, considering the vastness of the area, numbers were considered low, the beneficiaries agreed that it was a good starting point. On average each of the CAHWs were said to cover a radius of 7 -10 Km (higher in Garbaharey, Bardhere and Elwak). On average, the CAHWs were treating 800 – 1000 animals per month earning an average income of USD 250 – 300 per month. Similarly, average incomes for the veterinary stores was estimated at USD 1,500 – 2,500 per month. The larger part of the income earned was either used for household or for re-investment in the business (mainly in acquiring new supplies of veterinary drugs and equipment).

The livestock keepers met during the evaluation reported that the livestock treatments and vaccination had reduced the level of deaths and illness among the herd. They said they were seeing the benefits of healthy animals, an increase in the

market value of their livestock; milk increase; higher survivability of the young; and increase health of the animals. As for the market value of the animals vaccinated and treated, assuming that 50% of the animals that were treated and vaccinated were saved, the market value of animals of the animals (excluding future value) was estimated at USD 18,734,705[20] for shoats[21], 2,943,600 for cattle, and 7,373,100 for camels.

The rehabilitation of the water and agriculture infrastructure enabled a number of households to earn incomes through the cash for work (CfW) activities. A total of 200 individuals were engaged in the CfW activities earning an average of USD 5 per day (USD 150 per household). Asked about the main uses of the cash earned, all those interviewed indicated that over 85% of the cash went to the purchased of food, while the remaining 15% was used for repayment of debt, education, water and health services. As all the cash was spent in markets within the same locality as the CfW interventions, the cash had also direct impacts on the local markets and trade – it should be noted that as a result of the CfW, a total of USD 30,000 was injected into the markets.

5.4. Sustainability

In this study, a program is considered to be sustainable when it continues to deliver benefits, to the beneficiaries and/or other constituencies, for an extended period after the financial assistance has been terminated. Though the LLRP III program was a lifesaving/emergency intervention and there were challenges in time set aside for planning an exit strategy, the program team ensured that the interventions were long lasting and were embedded through community structures and community was provided with capacity building support. This is in line with our conceptual underpinning that links lifesaving to three important dimensions- human right, socio-economic development and human capability. For instance, in this case study, the players on the LLRP III, were able to build local capacities to enable them own and manage resources and assets such as water pans, shallow wells and irrigation canals.

In agriculture and food security, the support to the veterinary teams, veterinary pharmacies and community animal health workers were meant to ensure the sustainability of access to animal health services. The development of the private sector (CAHWs and veterinary drugstores) is key for promoting sustainable animal health services. All these service providers indicated they will continue to serve the pastoral producers. The willingness to pay and putting a cost-recovery system for CAHWs was meant to incentivize the CAHWs and sustain their services. Also, the development of linkages between the CAHWs and veterinary drugstores was meant to put in place sustainable to supply of drugs and equipment for the CAHWs. As for the interventions in fodder production, it is expected that with the improved incomes, rehabilitation of agriculture infrastructure and support to local seed systems through training, the agricultural interventions will last after the program exits. In addition, local capacities were improved as the producers were oriented and trained on the management and minor maintenance of the irrigation infrastructure.

Although the interventions are anticipated to contribute to the resilience of the sub-sector with the improvement of access to animal health services and feed security, the maintenance of these structures will depend on the future management of the structures, development of work skills for maintenance, and culture/incentives for asset maintenance. It was also observed water user associations (WUAs) committee was put in place for each of the shallow wells and water pan, which

was crucial for making the water points more efficient and sustainable. However, as no service charge was levied on the utilization of the infrastructure, costs of operation or maintenance will likely be a challenge as the infrastructure ages. Further, while beneficiaries reported that water from the shallow wells was chlorinated, a challenge existed in the access to chlorination products overtime. Nevertheless, these challenges were addressed through the building of local capacities in hygiene promotion so that the health promoters to continue to enhance the awareness and accumulated experience in the targeted areas in the future. In addition, it was anticipated that the portability of household drinking water would be addressed by the adoption of water treatment at household level resulting from continuous hygiene promotion and awareness.

The program faced a number of challenges during implementation, including the presence of multiple actors and the changing of local authorities in the operational areas. This resulted in constraints in access to some areas and delays in approvals for implementation of program activities in some localities. For example, it was difficult to access some localities in Garbaharey and Bardhere districts. Even in the districts with established local administration, they remained detached from the Jubaland Federal State to which the region belonged. Nevertheless, VSF Suisse was able to build on established networks and relationships, as well as the local acceptance it had developed during years implementing programs in Gedo region.

Based on the above findings, it is clear that while the program made great achievements in both sectors, the coverage was limited and there is scope for reaching a larger population that is in need. The local administration and participants in all the FGDs requested that the program be scaled up to reach a larger population, particularly the livestock treatment and vaccination, and rehabilitation of WASH and agriculture infrastructures that were seen to be critical as the rains started. Demand for livestock treatments and vaccination were expected to rise at the start of the rains due to the upsurge of respiratory diseases and the need for deworming animals to enable them to regain the body condition loss in the dry season and prepare them well for the next season. Similarly, it was important to rehabilitate irrigation canals, as they were at risk of destruction due to flooding in the rainy season, and to rehabilitate the water points to enable them to percolate an adequate amount of water to last the households into the next dry season.

6. Conclusion

The *Lifesaving and Livelihoods Restoration Programme III* (LLRP) is one of its kind to empirically gauge the link between long-term livelihood restoration and *lifesaving* assets and activities within the broader framework of human security in a region experiencing double tragedies of armed conflict and ecological fragility (CEF). The absorption rate of livelihood restoration assets and activities was found to be high in Gedo region of Somalia in the last 3 years since the trials were initiated, most likely due to increased access to livelihood restoration facilities, community participation, building/rehabilitating local capacities and use of skilled manpower across sectors. These observations seem to agree with earlier findings that were reported in fragile societies, suggesting that ecological restoration is positively correlated with reduction in violence and stabilization of states (Stites and Bushby 2017; Jacobsen 2002).

Overall, the program was highly relevant to the needs and interests of the beneficiaries, and the program design and corresponding interventions were found to be appropriate to the needs of the target population as well as the objectives of VSF Suisse and its donors. There was sufficient evidence from the findings to conclude that the program was instrumental in applying the notion of *lifesaving* through various long-term livelihood strategies- alleviating suffering, protecting and restoring the livelihoods of the population experiencing double tragedies of armed conflict and ecological fragility. This was rehabilitating community assets and reducing the vulnerability of Gedo communities to CEF. Whilst *semi-Cluster Randomized Controlled Trial (S-CRCT)* based studies such as this do have methodological limitations, identification of livelihood restoration components as *building blocks* for *lifesaving* entity as a distinct dimension of human security paves a new path to understanding the concept of human security better in CEF within special reference to Somalia. Some of the *lifesaving building bloc* identified in this study such as building/rehabilitating capacities of local communities, adoption of CAHW, capabilities, emergency seeds supply, fodder activities, vaccination, vulnerabilities of women and children, hygiene promotion, and WASH interventions, have been reported in previous studies in various disciplines including intentional development (Waisova 2003; Homolar 2015; Alkire 2005; Cropper and Portney 1990). Therefore, reiterate the importance of these elements enhancing the understanding of the nexus between development and security, especially in the context of a double tragedy- armed conflict and ecological fragility, such as Somalia.

Moreover, this study also identified novel *building blocks* associated with human security that have not been reported earlier in other CEFS such as sustainable access, markets, collective and individual behaviour, quality of products, cash for work (CfW), and gender marginalization (Douthwaite et al. 2022; Gebru et al. 2022). Identification of these new elements of lifesaving as reported in this study has several development-security implications. Gender consideration is particularly important factor in determining how and whether lifesaving activities and assets get to benefit people across gender spectrum. Somalia is one of the countries with the most pronounced gender disparity in the world. Although, the LLRP III activities such as livestock vaccination and treatments mostly targeted small ruminants that are owned and kept by vulnerable and women headed households, replication of this best practice across the Somalia society remains unknown.

Observations in this study need to be replicated in future studies across the Somalia society to understand regional and geopolitical variations. Whilst the associations this study reports do not imply direct causal relationship between lifesaving interventions and ecological restoration or reduction in armed violence, they offer some evidence of potential *building blocks* for broadening the human security framework to encompass lifesaving initiatives such as the lifesaving and livelihood initiatives. On this note, further research is needed to interrogate the newly identifies elements that potentially are needed in order to broaden the human security framework. First, sustainable access, requires conceptual clarity to ascertain whether it applies to the current seven human security dimensions or uniquely builds into the lifesaving intervention as a separate entity. Secondly, markets and “cash for work”, potentially influences the well-being of individuals through collective and individual empowerment. Similarly, the quality of product aligns with the capability framework of human-centric security. The current human security framework, however, lacks the systematic information on where exactly the two elements falls. Finally, analysis in this study is largely based on group/ community dynamics. In this regard, we cannot entirely rule out the possibility that individual’s behaviour influences their perception on the

livelihood restoration, and consequently, whether is appropriate to integrate this element as part of lifesaving intervention within the broader framework of human security.

In regard to policy implications, although analysis in this paper suggest an important association between livelihood restoration and reduction in armed violence, it does not conflate that increased livelihood restoration programmes are sufficient conditions for reduction in armed violence. It implies that regular monitoring of the correlation between the two variables can be useful in refining elements that provide optimum restoration of livelihood and ecological system. Such information can be used, for instance in conflict prevalence monitoring models as an early warning predictor. This is especially important given the vulnerability of countries such as Somalia to increasing climatic shocks and the intractability of the terror activities in the Horn of Africa.

Appendix

Table 6. Delivery of outputs against the targets

Indicator	Target	Baseline	Achievement (end line)
Livestock			
Number of people benefiting from livestock activities	45,000	0	154,976
Number of animals benefiting from livestock activities	400,000	0	454,350
Number of animals owned per individuals	19	19	30
Number of people trained in livestock	240	0	3,084
Veterinary pharmaceuticals and other medical commodities (VPMC)			
Number of veterinary facilities out of stock of any of the veterinary medical commodity tracer products, for longer than one week	0	11	5
Number of animals treated or vaccinated	400,000	0	447,546
Number of animal disease outbreaks	0	0	0
Number of people trained on veterinary medical commodity supply chain management	40	0	20
Irrigation			
Number of hectares under irrigation	80	Not availed	80
Number of people directly benefitting from irrigation activities	2,400	0	2,400
Length of irrigation system implemented	18km	0	18km
Percentage of households with access to irrigation	80	43 – 80%	80%
Number of months of household food sufficiency	3 – 6	2 – 3	3 – 6
Water supply			
Number of people directly utilizing improved water services	13,320	Not availed	9,900
Estimated safe water supplied per beneficiary in litres/ person/ day	15		15.32
% of WUAs established that are active at least 3 months after training	100%	0	100%
Percentage of HHs whose drinking water supplies have FRC >0.2mg/l	100%	0	86%
% of water points developed, rehabilitated or repaired that are clean and protected from contamination	4	0	4
Hygiene promotion			
# of people receiving direct hygiene promotion campaign	548		608
% of people targeted by hygiene promotion who at least know three of the five critical hand washing times	70		78%
% of people targeted by hygiene promotion with soap and water at designated hand washing location	70		21%
% of people targeted by hygiene promotion who store their drinking water safely in clean containers	70		68%

Footnotes

[1] United Nations Office of the Coordination of Humanitarian Affairs

[2] LLRP III was part three of a 5 years Lifesaving and Livelihood Restoration Project that was implemented by VSF-Suisse in partnership with Emergency Pastoralists Assistance Group (EPAG) and Nasib Relief and Development Organization (NARDO) in Gedo region, Somalia from. LLRP I and II were implemented from September 2016 to July 2018, LLRP was implemented from October 2018 to September 2019.

[3] These are Belet Hawa, Elwak, Dollow, Garbaharey, Bardhere and Luuq Districts in Gedo, Somalia

[4] Especially household heads from Bardhere and parts of Garbaharey districts that were still under under Al Shabaab attacks.

[5] Food Security and Nutrition Analysis Unit (FSNAU)

[6] Income from livestock include money from selling the animals, cow milk, camel milk and others were selling goat milk to local traders

[7] One community animal health worker during a key informant interview indicated that in 2019 the animal diseases were prone during the drier months from July to September. He also noted that the foot and mouth disease was highly transmitted from one animal to another in the dry period due to contaminated scarce water sources.

[8] Fodder producers along river Dauwa indicated that they had limited support with drought resistant varieties and irrigation equipment such as high power engines to pump water from the river

[9] VSF Suisse: Baseline assessment for LLRP III in Gedo region (February 2019). Internal Report

[10] An estimated 25% of the beneficiaries in each location were verified through a public meeting to ensure that the general population could provide feedback on the suitability of those selected and whether they met the pre-defined selection criteria.

[11] Starter kits containing essential veterinary pharmaceuticals and medical equipment commodities such as 50cc Automatic Syringe, Brass canula, 1 Litre albendazole drench 10% and 3 vials of 100 ml penicillin streptomycin combination among others.

[12] The field team were not able to confine community dialogues in Bardhere and Garbaharey districts because there were attacks by Alshabaab

[13] During the dialogues the field team established that women participated in large numbers compared to men because men were mainly involved in other activities like trading in the centers and also they move with the livestock in search of pasture and water.

[14] The business skills training included keeping all financial transactions records and how to calculate sales, expenses and profit made from fodder.

[15] A fifteen (15) member committee comprising on average of 6 men and 9 women were trained for 5 days on management, and operation and maintenance of water facilities

[16] The study team could see some of the billboards which were written in local Somalia language, the message was on how to wash hands and drinking safe water.

[17] The package in the context of this study refers to all the interventions aimed at supporting the households to achieve

sustainable livelihoods and build climate security. They include the Veterinary pharmaceuticals and other medical commodities, trainings on fodder production and livestock, irrigation support, water, sanitation and hygiene interventions.

[18] Feed security in this study refers to the ability of a household being able to produce or have access to enough animal feeds for the livestock throughout the year, in dry and wet seasons.

[19] Critical handwashing times: after defecation, after cleaning a child's bottom, before feeding a child, before eating and before preparing food or handling raw meat, fish or poultry.

[20] The average market prices in the region were USD 55 for shoats, USD 275 for cattle and up to USD 700 for camels in 2019.

[21] The shoats include the goats and the sheep numbers combined.

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