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BUILDING RESILIENCE THROUGH LIVESTOCK



- Family livestock farming systems provide for the livelihoods of billions of people worldwide. They also contribute to the preservation and promotion of both wild and domestic biodiversity and have the potential to adapt to hazards, stress and disasters through sustainable grazing management and soil conservation.
- Livestock farming should be considered in all strategies aiming to increase the resilience of rural communities to stress, shocks/hazards and disasters. These strategies should take the following principles into account:
 - Collaborations and reciprocity to enhance capital assets of livestock family farming communities and strengthening governance, laws and policies.
 - Indigenous coping strategies need to be integrated into Disaster Risk Reduction (DRR) activities to strengthen the communities' resilience. This can be achieved through the implementation of services and trainings, livestock insurance and improved access to markets and natural resources like water and pastures.
- Resilience strategies, programs and activities should be community-based. This can be promoted through the institutionalization of the concepts of Community-based Early Warning Systems (CbWS) and Community-based Resource Management (CbRM) in policy-making and programme planning and implementation.

At least 70 percent of the world's vulnerable population lives in rural areas, with over 80 per cent of them relying on farming and agricultural activities (IFAD, 2011). Today, 500 million family farms worldwide provide the livelihoods of about 1.5 billion people (Lowder, 2014). In those farms, livestock does not only provide the family's source of proteins, but also benefit crop production. The animals also represent the family's savings, which can be exchanged for cash in challenging times. Meanwhile, an increasing number of rural communities is exposed to stress, shocks/hazards and disasters posed by climate change, conflicts and economic crises. The origin of these crises has been shifting over the past decades, from mainly natural hazards in the 1980s to man-made factors, or a combination of both (FAO). Livestock family farming has proven to be an efficient and effective way to deal with these crises and improve the resilience of rural communities. This capacity to deal with stress, shocks and disasters is however increasingly challenged by the loss of land, endemic violence, increased population and settlement and climate variability and change. In the South, family livestock keepers have developed numerous indigenous coping strategies, but these are often impaired by vulnerable livelihoods. The adaptation/coping capacity of communities is also hindered by other socio-economic drivers such as demographic pressure due to population growth. Top-down policy making disregarding the traditional institutions and practices of family farmers also hinders coping mechanisms. Therefore, investments should be made to enhance the resilience of livestock family farmers. This can be achieved by improving their access to assets and natural resources such as land and water, and by strengthening local governance, laws, policies and governments, to progressively integrate the concepts of Community-based Early Warning Systems (CbEWS) and Community-based Resource Management (CbRM). Supporting livestock family farming among vulnerable communities is closely associated with an increased resilience to natural and man-made shocks. This is why Vétérinaires Sans Frontières Belgium advocates to strengthen family livestock farmers in the global South.

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Note:
In this document, use of the
masculine is generic and applies to
both women and men.

LIVESTOCK FAMILY FARMING AND RESILIENCE

Livestock family farming

Today, there are approximately 570 million farms worldwide. 500 million of them are considered as family farming systems (Lowder, 2014). Family farming refers to numerous production systems where the family structure and economic activities are strongly interlinked. FAO describes family farming as a system of farms run by an individual or a family unit, primarily relying on family workers. According to this definition, it is the most common type of farming in the world. The FAO estimates that approximately 70 to 80 percent of farm land is occupied by family farms producing more than 80 percent of the world's food in value terms. Livestock family farming comprises a broad range of different production systems, varying from extensive livestock farming to backyard pig or poultry keeping and rainfed or irrigated mixed farming systems. Family farmers are mostly small-holder farmers who own less than 2 hectares of land. In family farming systems, the animals do not only provide the family's source of proteins, but also benefit the crop production as they represent a means of transport and a useful tool to plough the land. Thanks to their livestock, the family can also gain access to a higher social status. When facing a crisis, when the farmer is urged to destock by selling livestock, animals can also be a useful source of savings.

Resilience and Vulnerability

The concept of resilience is understood and defined differently according to its users. 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. This includes protecting, restoring and improving livelihood systems in the face of threats that impact agriculture, nutrition, food security and food safety."* The Intergovernmental Panel on Climate Change's (IPCC) defines resilience as *"the capacity of a social-ecological system to cope with a hazardous event or disturbance, responding or reorganizing in ways that maintain its essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation"*. The social or ecological system at issue here is livestock family farming in the global South. In light of this policy brief, resilience should be considered as **the capability of family livestock farmers in the global South to prepare, adapt and secure their livelihoods in a rapidly changing environment**. The ability to deal with disturbance - or with a rapidly changing environment - is referred to as the adaptive capacity, which is based on three groups of factors. The first one is the access to assets of physical, political, social, human, natural and financial nature. The second group comprises available structures and processes like governance, laws, policies and institutions. Lastly, the variety of livelihood strategies is also used to define the ability of communities to deal with disturbances. All these factors should be taken into account in order to enhance the resilience of livestock family farmers.

Vulnerability is strongly interrelated with resilience and refers

to the propensity or predisposition to be adversely affected (IPCC, 2012). Much like resilience, vulnerability is a dynamic concept and depends on numerous factors (economic, social, cultural, etc.). Within the context of livestock family farming systems, households rely massively on agricultural and livestock production and are therefore vulnerable to shocks related to agricultural production, conflicts and other disturbances.

CHALLENGES TO RESILIENCE

Stresses, shocks/hazards and disasters

The resilience of livestock family farmers is being challenged by a variety of phenomena which can be classified according to impact, duration, intensity, etc. These challenges - or disturbances - are commonly divided into stresses, shocks/hazards and disasters. Stresses refer to low-impact events and seasonal factors including price fluctuations, local conflicts or gradual changes in climate. Shocks or hazards, on the contrary, are high-impact events often perceived to have a sudden onset. Lastly, disasters are generally defined as serious disturbances in the functioning of a community or society causing widespread human, material, economic or environmental losses and impacts that exceed the adaptive capacity of the affected to cope with disturbance. In other words, shocks and stresses are not equal to disaster, but can trigger a disaster. Disasters can temporarily affect the livelihoods of certain rural communities or



induce a protracted crisis countrywide. Such crises are defined by FAO as **"environments in which a significant part of the population is acutely vulnerable to death, disease and disruption of livelihoods over a prolonged period"**. In 1990, this type of crises affected four countries in the South. Today, 28 African countries are dealing with them. The nature of these crises also evolved over the years. While they mostly used to be caused by natural hazards in the 1980s, all documented cases by 2010 were caused by man-made factors, or a combination of both.

Natural versus man-made hazards, disasters and stresses

A more distinct typology of hazards, disasters and stresses focuses on their sources, which can be divided into two groups: natural - and man-made disasters, shocks and hazards and stresses. It must be noted that the approach used here does not represent the true complex setting of shocks and stresses in the South. In fact, natural hazards are often partly human-induced or severely influenced by human factors. However, this distinction does offer insights on how to deal with vulnerability and increase resilience as a consequence of shocks/hazards and stresses.

Natural hazards/shocks, stresses and disasters

According to the framework for analysis and action to build community resilience, natural disasters are brought about by numerous geological hazards like earthquakes and tsunamis and hydrological hazards such as floods and storms. While

the number of geological disasters has remained relatively constant over the last 20 years, the number of hydrological disasters is significantly rising. 41% of the drought disasters occur on African soil. Due to the rising number of these extreme weather events, family livestock farmers in the South face numerous challenges in securing their livelihoods. Furthermore, increased temperatures affect both livestock and farmers' health, diminishes water resources, increases the risk of drought and land degradation. Irregular rainfall and changing seasonal rainfall patterns intensifies water scarcity and increases drought stress for crops, livestock and pastures or causes flooding. When natural disasters occur, they have a direct impact on the livelihoods and food security of millions of small livestock farmers in developing countries. A review done by FAO (2015) on the economic impact of climate-related disasters such as floods, droughts and tropical storms, reveals that 25 percent of all damage affects agriculture. The agricultural sector is heavily disturbed by droughts, absorbing 84 percent of the total economic impact. Within the agricultural sector, the highest damage and losses were observed in the crop production (42.4%), followed closely by livestock (accounting for about 36%). Droughts in 2015 and early 2016 had major impacts on livestock and crop production in several African countries like Zimbabwe, Ethiopia, Mozambique and Burkina Faso.

Man-made hazards/shocks stresses and disasters

One of the most discussed man-made hazards is undoubtedly **climate change**. As reported by the Intergovernmental Panel on Climate Change (IPCC), human activities are the main cause of climate change in both developed and developing countries. Nevertheless, climate change mainly affects the communities living in the global South and in particular rural communities depending on extensive livestock and crop farming for their livelihoods.

Man-made hazards can also be **socio-political**: this is the case for conflict and violence and can lead to food insecurity through disruption of local food supplies and people displacement. Conversely, the sudden lack of secure access to food can also lead to tensions within usually peaceful communities and increase their vulnerability to other kind of shocks. In this regard, it is important to mention the influx of refugees within this context of socio-political hazards. Long-term conflicts and violence can simultaneously lead to internal displacement, which in return leads to constraints on the local resources of the rural communities in the South. The Democratic Republic of Congo is a good example of this, with its refugees from Burundi, the Central African Republic and South Sudan, putting a further strain on the already limited resources of the local communities.

In Nigeria, **economic hazards** are partly responsible for the current food crises. The strong devaluation of their national currency, the naira, together with the ongoing conflict in the northern states, has contributed to a high increase in food prices. Hyperinflation together with other man-made drivers, subject about 3.4 million people to food insecurity in Nigeria.

BUILDING RESILIENCE

The resilience of small-scale livestock in the global South is being challenged by stresses, shocks/hazards and disasters. A first serious threat to their resilience is the loss of land – a vital asset for livestock family farmers – due to land investments by outside investors, intrusion of neighboring farmers and development of irrigation, tourism and conservation programmes. Endemic



conflicts and violence, leading to disturbed market access, and increased vulnerability when experiencing natural shocks like droughts, also strongly impact family farmers. Increased population and settlement or demographic pressure should also be mentioned as well as climatic variability and climate change which have a severe impact on livestock family farming. However, building resilient family farmers' livelihoods in a changing environment – with shocks and stresses – is possible. Part of the solution lies in a combination of long-standing and new coping strategies undertaken by small livestock farmers autonomously. Their cost-efficient and preventive nature makes them a tool for sustainable community capacity building among family farmers. There is growing support from outside actors for these coping mechanisms at different levels. Furthermore, Disaster Risk Reduction strategies, strengthen family farmers' adaptive capacity, are increasingly implemented by NGOs and CSOs and acknowledged by governments in the South.

Coping strategies of small-scale livestock farmers

Farmers in the South respond to environmental uncertainties using a variety of coping strategies. Traditionally, these strategies provided a way to increase farmers' livelihoods in marginal lands under extreme weather conditions. Today, they help communities cope with numerous external hazards, like pasture shortage due to higher population density or irregular rainfall. Their coping strategies can be classified in different ways. Following the IPCC (2007) approach, adaptation/coping responses can be divided into several sub-categories: autonomous and planned versus reactive and anticipatory coping strategies. **Autonomous strategies** are triggered by environmental changes and market or welfare changes and actions that are taken by small-scale farmers based on their perception of hazards threatening their livelihoods. **Anticipatory adaptations** are executed before the impact occurs, whereas **reactive coping strategies** are implemented after the initial impacts of shocks become noticeable. A deliberate policy decision results into planned adaptation strategies based on an awareness that conditions have changed or are about to change and that action is required to return to, maintain, or achieve a desired state.

Various indigenous strategies used by small livestock farmers are based on collaborations within the community. These social collaborations involve livestock loans, communal grazing, labor exchange and communal planning. The outcome of these coping strategies depends on the joint effort of small livestock keepers and can strengthen the

sense of a community thereby increasing the resilience building through social support and exchange of knowledge and labor. These strategies are usually autonomous and anticipatory. Below, some of these strategies are addressed focusing on the role of mobility, livestock diversification and empowerment of women to improve resilience.

Focus on mobility

Enhancing herd mobility is a common livelihood strategy among small-scale livestock farmers, particularly pastoralists and agro-pastoralists, for example to deal with climate-related hazards. Herders migrate with their livestock in search of water and high-quality grazing areas, but also to ensure access to resources during challenging times. In several African countries, livestock keepers also cross borders with their herds, hereby promoting market integration, employment, crop dissemination and cultural exchanges. Moreover, pastoralists often split their herds to sustain their insurance, either maintaining control through herders or distributing their livestock to poorer relatives, who look after the animals in exchange for the milk and manure. Transhumance or seasonal migration is common practice for pastoralists. In this context, loss of land is a typical example of the hazards and stresses that impede indigenous coping strategies.

Focus on livestock diversification

The great abundance of cattle in family farming systems all over Africa is well known. However, in a changing environment, rearing cattle is not always possible and other livestock can prove more suitable to the needs of family farmers. Small livestock species such as pigs and poultry are now increasingly introduced into family farming systems. Their short reproduction cycle, ease of care, size and marketability make them a particularly valuable source of livelihood.

Livestock diversity therefore not only helps to cope with external shocks, but also enhances biodiversity. As through livestock diversification, the family farmer contributes to the preservation of a variety of livestock species and breeds, which allows for greater adaptation capacity. Livestock diversification is not new and has been used by

pastoralists for centuries. They combine different livestock species for different purposes, such as savings or food. Moreover, the different species have different feeding patterns, which lowers the pressure on the local vegetation.

Family farmers' choices about their livestock is motivated by their need to secure their livelihoods. A study done by Desiere (2015) shows that wealth, population density and market access play an important role in the choice between investing in cattle or small livestock. The results showed that farmers, including the richest, switch to small livestock as it is less vulnerable to feed shortages caused by rainfall or restricted access to land and markets. In Burundi for example, farmers sold or slaughtered their cattle and shifted to other livestock species, mainly goats. This decline in the national dairy cattle population can be considered as a consequence of the insecurity induced by the long-term conflict.

SMALL LIVESTOCK DEVELOPMENT IN NGOZI, BURUNDI (2014-2016)

Burundi is one of the world's poorest countries, where conflict threatens the livelihoods of many. Strong population growth and density reinforces the need of communities to build resilience to external hazards and stresses. To strengthen vulnerable communities in the Ngozi province, Vétérinaires Sans Frontières implemented the Development of Small Livestock (DEPEL) project together with local partner UCODE AMR. This multidimensional project is funded by the Belgian government. In Burundi, food insecurity affects about 75 % of the population, and the province of Ngozi is no exception. The objective of the project is to strengthen communities' resilience by increasing their capital assets. 700 severely vulnerable households located in 4 towns take part in the program. They received training on goat keeping, composting methods and cultivation. 550 households also received goats, with a 2-month access to animal health care services provided by 27 Community Animal Health Workers. As part of a solidarity mechanism, some of the goats' offspring are to be distributed to other households. Additionally, a collaboration with the Bureau Provincial de Santé was initiated to sensitize the families on good hygiene, reproductive health and nutrition. Households who have reimbursed offspring have been affiliated, free of charge, to health insurance. 8 centers were also set up to teach project beneficiaries to read and write. After 23 months, the distributed goat population doubled to 51 % and goat mortality dropped from 13 % to 7.4 %. Crop production increased thanks to manure as well as the daily meal intake. Thanks to this multi-sector and multi-actor approach project, food insecurity has been tackled by increasing household's livelihood assets and strengthening resilience to future hazards.

Focus on gender equality

Promoting livestock in family farming systems is also important to strengthen the role of women. In the rural South, women are as likely as men to keep livestock. However, the number of animals they own tends to be lower and they rather own poultry and small ruminants than cattle. The gender inequality prevailing in rural communities adds to the challenges experienced by female farmers. Women are almost excluded from land ownership; even if their families own land, most women are indeed landless. They usually have poor access to markets, advisory services, technical information and possess significantly less tools than male farmers. Women farmers also suffer public social restrictions, which limit their chances to enquire beneficial



inputs, trade their farm yield or hire workforce. These gender-based constraints, in turn, can lead to important differences in farm productivity and yield between men and women and consequently affect female farms' vulnerability to external shocks. Promoting gender equality through women empowerment in livestock farming is therefore essential for building the resilience of rural communities.

WOMEN EMPOWERMENT THROUGH VILLAGE POULTRY FARMING IN KATI, MALI

A significant proportion of the Malian population is affected by poverty, particularly in rural areas where 80.9 % of the people live in poverty. In this context, poultry farming can facilitate diversification of income, especially during the dry season. This risk management strategy seems very widespread among Malian households, as 70 % of the rural households rely on poultry farming. Although poultry is mostly owned by women, these women are most vulnerable to poverty due to strong gender inequality. They experience poor access and control of resources and benefit less from economic activities. Additionally, women's lack of education and organizational capacity prevents them to realize their full potential in poultry family farming. Vétérinaires Sans Frontières, together with its local partner Initiatives, Conseils, Développement (ICD), implemented a number of projects in Mali on improved poultry farming, giving rural women a specific role. In 2015, the main objective of these projects shifted to advocacy. The importance of local poultry farming was stressed as a way to fight against poverty amongst women in rural areas. As part of this new approach, an information day on poultry farming was organized, bringing together different stakeholders, as well as the countrywide distribution of a documentary on the impact of poultry farming on Malian women's livelihoods. As a result, the 900 women taking part in the project in the Kati area sold an average of 32 chickens per year, thus generating an income three times higher than the average monthly salary. The contribution of poultry farming to the income of women increased from 5000 (€ 8) to 80 000 F CFA (€ 122). 35 % of the income is used for the children's healthcare and schooling; 42 % covers family expenses, like food, clothing and housing ; 18 % contribute generating external activities and the last 5 % saved. The project greatly contributed to women's empowerment, both on an economic and social level. The income generated thanks to poultry farming has enabled them to improve their welfare and to strengthen their decision-making power at household level. Their knowledge and know-how have also been significantly reinforced, particularly in short-cycle breeding techniques and in market access strategies. Moreover, the internal power and participation of women has been reinforced at both household- and community level. These results show that village poultry farming significantly improved the living conditions of women and their families in Kati, therefore strengthening the resilience of communities to current and future stresses and shocks.

DISASTER RISK REDUCTION

Governments, international institutions, NGOs and CSOs can offer external coping mechanisms to strengthen the communities' resilience. They can provide service and training (education and healthcare) and implement improved access to market and natural resources and schemes.

Using a multi-sector and multi-actor approach when implementing programs focusing on building communities'

resilience is essential. Adopting an approach which combines different types of support, each acting on a specific dimension of household vulnerability, will clearly have more impact than focusing on only one. Furthermore, projects tend to be more effective if several actors with different expertise collaborate. Many of the measures undertaken by external institutions are elements of Disaster Risk Reduction (DRR). Their strategies to empower small-scale livestock farmers' communities are usually planned and anticipatory.

Disaster risk reduction comprises all strategies in humanitarian and development aid aiming to reduce disasters risks for individuals or communities. In the South, where food security is threatened by recurrent hazards like droughts or in conflict environments by a sudden-onset disaster, implementing DRR actions can strengthen vulnerable communities' resilience in a sustainable way. Enabling communities to identify and deal with the risk posed by disasters can secure livelihoods. DRR at community level can be divided into two common approaches, namely community-managed and community-based approaches. The second approach is preferred since it stimulates the community members to identify, plan, implement, monitor and evaluate strategies to build resilience and doesn't highly depend on external actors.

Early Warning Systems & shared resource management

Early Warning Systems (EWS) are an important tool in DRR which can be developed at various levels, from extensive



surveillance programmes to community level. Community-based Early Warning Systems (CbEWS) can play a crucial role in empowering communities to be resilient to external shocks. They are used in various sectors involved in disaster risk reduction such as public health, food security and agriculture. While EWS at national level lack participation of both communities and local governments, CbEWS are initiated, managed, maintained and owned by the villagers and therefore have a greater impact on the ground. The success of CbEWS is determined by four core elements: risk knowledge, monitoring, response capability and warning communication. The use of ICT can be integrated in CbEWS, to help monitor a certain area and efficiently provide reliable information in a short period of time.

Another implementation of DRR is shared resource management, an approach that encourages communities to analyse their resources problems and needs in order to develop adaptation measures, mainly for challenging



times. Reciprocal resource agreements can also indirectly promote sustainable peace and the use of unutilized land in conflict-prone areas. Vétérinaires Sans Frontières facilitated community-based resource management amongst neighbouring pastoralist communities in Kenya and Uganda and is currently implementing the same system in Tanzania. The development of reciprocal grazing agreements has promoted sharing of land and water, thereby increasing the communities' capacity to adapt to externalities like recurrent droughts.

APPROACHES TO RESILIENCE

More and more donors support DRR management as an effective option for increasing the resilience of rural communities in the South. International stakeholders seek to link relief, rehabilitation and development for better food security in the South and switch from disaster management to risk management. The South will better recover and avoid future crises if stronger connections are made between humanitarian aid and long-term development support, organized around strong national policies.

The United Nations

The importance of effective disaster risk reduction activities and their contribution to sustainable development is also recognized by the United Nations, who declared the 13th of October as the International Day for Disaster Reduction. The United Nations' Sendai Framework for Disaster Risk Reduction 2015-2030, presented in 2015, provides a guideline for the implementation of DRR activities in all relevant sectors. The document promotes investments in livestock, which is acknowledged as a productive asset, as it strengthens vulnerable livelihoods. In 2012, the International Fund for Agricultural Development (IFAD), launched a climate change adaptation programme for small-scale farmers. The aim of the Adaptation for Smallholder Agriculture Programme (ASAP) is twofold: enhancing small-scale farmers' capacity to cope with climate change induced stresses and strengthening their mitigation strategies. ASAP funding supports local farmer-based organizations in more than 30 developing countries, and is most commonly implemented through national agencies and implemented by the programme to small-scale farmers. With a total budget of USD 300 million (€ 276 million), IFAD sought to provide an institutional and policy framework strengthening the resilience of small-scale farmers, specifically through new adaptation solutions like Early

Warning systems, improved access to weather information and financial services for climate risk management.

The European Union

The EU approach on resilience is guided by the *EU's Strategy for Disaster Risk Reduction in Developing Countries*, the *EU approach to Resilience: Learning from Food Security Crises*, and through the *Action Plan for Resilience Crisis Prone Countries*. Furthermore, the EU recognized the importance of DRR strategies by launching the *Disaster Preparedness ECHO programme (DIPECHO)*, through the European Commission Humanitarian Office (ECHO), which invested € 325 million thus far. As recommended in a joint evaluation on ECHO's work in the Horn of Africa, ECHO's interventions should involve a wider scope of its 'DRR' activities in the region, changing from their 'drought risk reduction' activities to 'disaster risk reduction' strategies coping with a broader range of disturbances affecting family farmers in the South.

In Africa, EU is funding resilience programs such as the "Supporting the Horn of Africa's Resilience (SHARE)" initiative and the "Global Alliance for Resilience Initiative (AGIR)". In 2015, actors involved in the latter presented a joint report on its accomplishments. The document states that "family farming has not benefitted from public investment and sufficient financial resource allocation that would enable it to adapt and improve performance to meet the needs". The statement underscores the important role that family farming systems play with respect to food security and expresses the importance of consistent policies and sufficient financial investments in building resilience. Likewise, more consideration should be given in future projects to challenges related to climate change. The importance of gender equality is also stressed in the declaration. Even though climate has been worsening and disproportionately affecting women, gender inequality issues are rarely addressed in programmes and policies funded by AGIR. As an example of EU resilience policies and practices, the recommendations and observations regarding AGIR should also be taken into account for other EU policies and practices aiming to enhance resilience.

Belgium

At the Third UN World Conference on Disaster Risk Reduction in March 2015, Christophe de Bassompierre presented an official statement on the role of Belgium in disaster prevention, preparedness and response. The statement highlighted the assistance of the Belgian Humanitarian Aid within the Belgian Development Cooperation Policy through funding numerous disaster preparedness projects to build resilience to disaster risks. However, according to a critical report, published jointly by



eight humanitarian NGOs, DRR-development methods are not always acknowledged or supported by Belgian policies. The focus of the Belgian Development Cooperation from 2016 onwards seems to be increasingly on private sector development and digitalization as a key strategy for development as well as on tackling the root causes of the refugee crisis in Europe. Disaster Risk Reduction no longer seems to be a priority.

At the same time, Belgian development aid is currently funding resilience-building projects in the South, but seemingly without a clear definition of Disaster Risk Reduction. This lack of conceptualization of DRR-management

complicates the implementation of DRR by stakeholders. Nonetheless, providing assistance and guaranteeing security for communities in need is the responsibility of national governments.

When national governments cannot fulfil this task, other governments, like Belgium, can contribute to effective development aid in order to reduce the rising number of people affected by external shocks. This can only be accomplished through an integrated and coherent approach towards building resilience covering the full range of policies and actions in the context of disaster-risk reduction noted in an overarching policy strategy.

CONCLUSION

In the South, small livestock keepers have numerous traditional coping strategies, but these are often impaired by insecure livelihoods. Their ability to cope with external hazards, stresses and disasters is also hindered by other socio-economic drivers like population growth and top-down policy making, which often disregards traditional family farmers institutions and practices. Reducing vulnerability among livestock family farmers and thereby increasing their resilience is therefore an indispensable task, though complex and challenging. Strategies to enhance their resilience should be based on collaboration and reciprocity at community level, enhancing capital assets of livestock family farming communities and strengthening the governance, laws and policies on small livestock farming systems. For example, deploying multiple farming activities and diversification of crop, livestock and economic activities can ensure farmers' adaptation to future environmental changes. Although Disaster Risk Reduction strategies – based on the 'Linking Relief, Rehabilitation and Development' concept – are increasingly implemented by NGOs and CSOs and acknowledged by stakeholders like the United Nations and the European Union, more attention should be devoted to the important role of family livestock farmers in resilience building. Therefore, investment should be made by governments, international institutions, NGOs and CSOs into linking their indigenous coping strategies to DRR activities in order to strengthen the communities' resilience. This can be achieved by providing service and training, livestock insurance and improved access to markets and natural resources, like water and land. Investments in DRR activities should be increasingly made at community level since it stimulates the community members to identify, plan, implement, monitor and evaluate strategies to build resilience and highly depend on external actors. This can be supported by the institutionalization of the concepts of Community-based Early Warning Systems and Community-based Resource Management in government policy-making, planning and program implementation. Livestock farming should therefore get the recognition it deserves, namely as an important driver towards shock-resilient communities.

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