



Poultry production provides an important survival strategy for many Africa farmers because it is fast-producing at low cost, uses locally adapted breeds and has low veterinary costs with inexpensive vaccines available for the most prevalent diseases. Poultry production increases food security and household resilience for many Africans by providing readily harvestable animal protein to rural and peri-urban households in addition to a steady source of income.

## Supporting adaptive capacities

Whilst it is desirable to strengthen the capacity of the livestock industry to adapt to the threat of climate change, it is important to understand that a much wider range of threats influences livestock keepers' impoverishment. Many livestock keepers identify climate change as just the latest in a series of threats to which adaptation has become increasingly difficult. Other threats include population growth and resource pressure, shifting power relations and a changing social, political and economic context.

Adaptive capacity, at individual, community or national levels, is poorly understood. However, there are risks inherent in externally-driven determination of risks and opportunities for adaptation. Top-down and externally driven approaches have often been harmful to development in the past and it is critical to develop a broader understanding of the determinants of adaptive capacity. The ability to adapt may consist of a number of fundamental attributes that are relevant across a range of threats.

- Population pressure, from both external encroachers and internal demographic growth
- Market failures and entry barriers
- Inequity in global livestock trade (subsidies and concessions) undercutting local markets
- Poor access to foreign markets
- Insecure tenure and weakening or breakdown of customary governance institutions
- Loss of land, and in particular key resource pockets
- Restriction of transhumance and loss of access to key resources
- Sedentarization policies leading to land degradation and severely reduced carrying capacity
- Conflicts between pastoral groups as well as with crop farmers (linked to weakening governance above)

can enable farmers and planners to react appropriately and rapidly. This requires better access to information and greater capacity to interpret information and understand the implications of a given threat. At a local level this requires training and awareness raising, improved understanding between farmers and extension workers, and investment in information infrastructure. At the national level, greater investment may be required to improve meteorological data collection and dissemination so that information is available regularly and reliably.

### *Dimensions of adaptive capacity may determine resilience in the livestock sector*

Ability to make informed assessment of imminent threats (whether to climate or other hazards)

Ability to make an informed choice, from a range of options, about response measures

Capability to deploy the preferred option (e.g. skills, money, infrastructure)

Freedom to implement the preferred option (e.g. policy, governance, rights)

relies to a

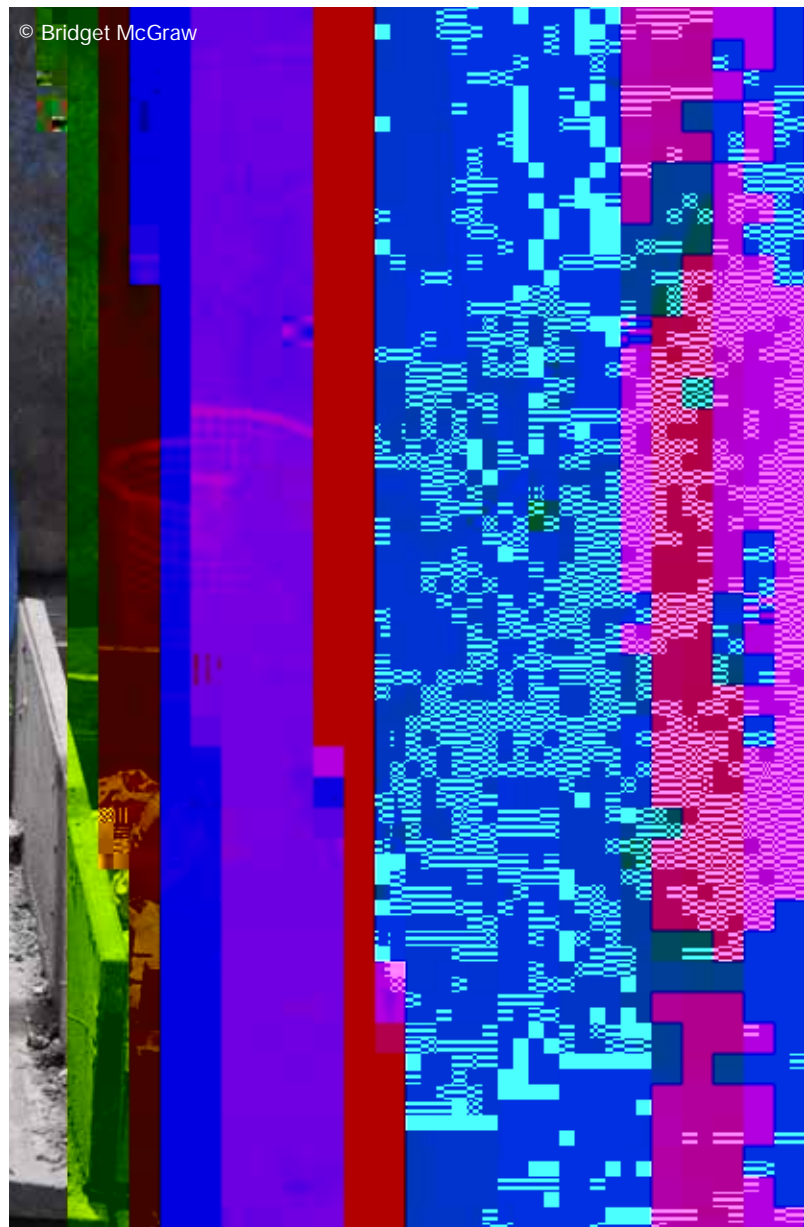
large extent on the core livelihood assets: human, social,

N'Dama cattle, West African dwarf goats, and the Djallonke sheep and goats in Central Africa are all breeds with a proven ability to survive in areas with high risk of trypanosomiasis. It has also been reported that trypanotolerant cattle, especially the N'Dama breed, show superior heat tolerance than zebu cattle and metabolize water with greater economy, making them better adapted to the hot and water-stressed regions of Africa. As climate change leads to a change in the range of the trypanosome-carrying tsetse fly, along with increases in temperature and water stress, the advantage of these indigenous breeds is obvious.

However, the comparatively small size of N'Dama cattle has led herders to cross the breed with zebu cattle to improve their body-mass and walking capacity. This production strategy – arguably an adaptation to market forces and current ecological conditions – may constitute a threat to the long-term survival of a breed that could play a vital role in future adaptations of Africa's livestock industry. This threat is addressed by projects such as that of The International Trypanotolerance Centre, based in The Gambia, which is developing the breed to increase its productivity in order to maintain its popularity and promote its use.

of livestock keepers and advisors/planners does not necessarily require the development of new choices. Many adaptation options are already known and it is important to ensure that farmers and planners can make both sense and use of the options available to them. This requires the building human capabilities through education and improved extension services and through better access to information sources. Collaborative research is required where adaptation options still need to be developed, to ensure that both endogenous and exogenous knowledge is considered.

Index-based insurance (IBI) against climatic hazards are designed to share risks amongst a group of resource users, insurance companies and government. IBI is typically designed so that small losses are borne by the client that do not significantly affect their enterprise, whilst larger losses are transferred to the private insurance industry (market insurance through a Base Insurance Product). Based on historical data, an index is defined linking climate to economic impact. Climatic thresholds are determined accordingly and payouts are made when a threshold is passed in a given location, rather than on the basis of individual losses. In Kenya, a model is under development by FSD Kenya and the International Livestock Research Institute, with support from DFID, Rockefeller and the World Bank. FSD partners with the Kenya Meteorological Department to install automated weather stations for contract monitoring and insurance payouts.



**Specific recommendations for**

