

Focusing on infectious diseases is not enough

Diversity of settings and the nature of the world's health challenges had been calling for linking up expertise from different disciplines long before the One Health approach was gaining momentum. Our authors describe what German development cooperation has learnt from past experiences with interdisciplinary teams in the field of human, animal and environmental health and how it is preparing for the increasing demands for One Health.

By **Lea Knopf, Renate Herrmann and Tobias Feldt***

Sustainable solutions for the world's interconnected challenges need joint knowledge creation and have to include expertise from local to global level. The German Federal Government started to introduce policy directions in the field of One Health a decade ago, and alongside other relevant ministries, the German Federal Ministry for Economic Cooperation and Development (BMZ) has amplified its engagement on this topic over the last three years. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) has longstanding experience in translating such policies into tangible outcomes across the globe. Such collaborative efforts specifically at the interface of environment, biodiversity, human and animal health, food security and land management have led to closer cooperation between actors of the public and private sectors from the South and the North and can make the world a safer place – for all. This article showcases selected past and on-going experiences of cross-sectoral approaches in the field of human, animal and environmental health.

Multi-faceted problems call for interdisciplinary teams

Livestock farming in many countries is directly affected by the loss of natural pasture resources (population growth, over-use of land, intensification of agriculture, cash crop production) and climate change (desertification, changing dry and wet season patterns). This usually leads to poorer food security and land use conflicts, and it affects the health of people and animals. In Uganda, the BMZ fostered cooperation and cross-sectoral planning for previously independently-led development initiatives between the country's ministries and stakeholders of relevant sectors. On the implementing partner side GIZ paired such initiatives with on-the-ground education and training in agriculture and livestock husbandry to increase technical, business and nutritional skills of farmers. Better adapted methods for resource-saving crop and livestock production, food processing and participatory planning of land use have evolved from such collaborations and have been dis-

seminated to other settings where they have improved the resilience of farmers to face climate change and contributed to a better socio-economic and health situation of the communities. Lessons learnt in such settings have added another perspective. Ensuring women's access to and control of resources such as land, livestock, markets, information and credit strengthens their influence and social empowerment. Designing livestock development programmes with a targeted gender approach therefore improves impact in terms of poverty reduction and food security.

In Uganda, ongoing work aims at improving health of food-producing livestock to boost livelihoods of farmers and increasing the safety of animal products and, ultimately, consumer and occupational health through adapted strategies. This model, partially implemented in Kenya, too, combines information sources from multiple disciplines along the food chain to enhance early detection of diseases or antimicrobial resistance at the human-livestock interface. Likewise, in Southeast Asia, poor sanitation and a lack of safe drinking water contribute to the spread of infectious diseases. In Cambodia, Indonesia, Lao PDR and the Philippines, the strategy of BMZ and implementing partners went beyond raising people's awareness of classical hygiene measures (washing hands and using clean toilets, deworming of children) for better health of communities. Involving the educational sector meaningfully improved environmental awareness of the protection and conservation of water resources or sustainable, safe water use in agriculture in communities, too. In Cambodia, for instance, these topics were additionally integrated into school curricula.

The German Epidemic Preparedness Team (SEEG), established in 2015, supports German development cooperation partner countries and partner organisations in preparing for and rapidly responding to disease outbreaks. SEEG has associated necessary disciplines according to its knowledge of the conditions on the ground and to help to quickly identify and address possible weaknesses together with the

partners in difficult situations such as the outbreak of disease. The lesson learnt from interdisciplinary work is that there is a long way to go from recognising the need for multi-disciplinary teams, constituting them and then to effectively working and communicating as one assimilated team.

The One Health approach as an extension of the previous?

The recent emergence of yet another epidemic with a global impact exemplifies the stark reality of the interconnection of human, animal and environmental health. There has been increasing international recognition that collaboration between at least the sectors mentioned above would be crucial to efficiently tackling today's and tomorrow's threats to health, social justice and peace. The lessons learnt from the 2014–2016 Ebola epidemic in West Africa highlighted the need to strengthen health systems under a One Health approach to ensure that countries are better equipped to rapidly detect and efficiently respond to disease outbreaks at their source. The strategies and work plans of the German Federal Government and its development partners have incorporated these lessons and declared 'One Health' a priority area of the country's development cooperation.

In partnership with relevant other German ministries, the BMZ has pursued a multi-axis policy to prevent and mitigate threats at the human-animal-environment interface. Bilateral agreements for capacity development with partner countries or entire regions have been in place since the start; financial and technical support alongside the World Bank to strengthen programmes of key international organisations, in particular the Tripartite organisations (the UN Food and Agriculture Organization [FAO], the World Organisation for Animal Health [OIE] and the World Health Organization [WHO]) which are setting the One Health policies and implementing them worldwide, have regularly been renewed. Another pillar has been dedicated to investments in re-



Left: Cross-border field simulation exercise for pandemic preparedness in the East African Community (EAC).

© GIZ/ LightinCaptivity

Right: Training of laboratory personnel by a team of the Rapid Deployment Expert Group on Health (SEEG) for the use of a SARS-CoV-2 detection kit. Cochabamba/Bolivia.

© GIZ Bolivia, 2020



search coalitions, be it in Germany, Europe or Germany's development cooperation partner countries, to better understand pertinent factors of interdependence of biodiversity, environmental health, and human and veterinary medicine. The decision to create a dedicated One Health Unit within the BMZ shows the political leverage of the One Health approach in development cooperation. GIZ, as part of international development cooperation, supports the German Federal Government's call to improve planification and coordination of activities between ministries, partners as well as the wider One Health community with a dedicated One Health team.

Where the One Health approach is already coming to bear

Nevertheless, a number of large-scale projects are already employing a One Health approach:

In close collaboration with its political partner, the Secretariat of the East African Community (EAC), GIZ, commissioned by BMZ, enhanced pandemic preparedness and strengthened coordination in the EAC region in a cross-border field simulation exercise between Kenya and Tanzania. The innovative peace-time capacity development "Support to Pandemic Preparedness in the EAC region" is a good example of One Health in practice. It brought together key disciplines and sectors for practical exercises in integrative epidemic management, with professionals from a medical and veterinary, climate, environmental and agricultural background, and further representatives from trade, tourism, communities, the military and the media. As a future outcome,

the EAC countries are currently preparing a regional One Health Strategy.

In 2018, the Economic Community of West African States (ECOWAS) and the West African Health Organization (WAHO), supported by international partners, conducted a large-scale zoonotic disease prioritisation exercise with representatives of human, animal and environmental sectors of its member states to inform the region's One Health strategy under development. GIZ's "Regional Programme Support to Pandemic Prevention in the ECOWAS Region (RPPP)" laid a groundwork for this by supporting a regional strategy which aims at improving coordination on health programmes within the region and between institutions and assisting member states in better implementing the International Health Regulations. The RPPP applies the One Health approach in all its interventions and activities across its four thematic fields of operation for enhancing the capacities for pandemic preparedness and control in the region. The RPPP, in collaboration with academia, has also incorporated the One Health approach in the ongoing capacity building programme for pandemic preparedness and control. Regional and national human resources benefit from tailored training e-learning modules and topic-specific workshops (e.g. risk communication, inter-institutional coordination and simulation exercises for outbreak management).

Looking at support for international organisations and the One Health approach, Germany is a major donor to the Tripartite's new Multi-Partner Trust Fund to combat antimicrobial resistance (AMR) globally and using a

cross-sectoral approach. The Trust Fund aims at scaling up the Tripartite efforts to support countries to mitigate the immediate threat of AMR, which has been a Tripartite top priority for One Health collaboration. As a supplementary initiative, BMZ, the International Livestock Research Institute (ILRI) and counterparts are about to launch operational research at the human-livestock interface in selected partner countries, where baseline data on AMR are scarce and are urgently needed to inform the strategic directions in those settings.

Germany dedicated supplementary funds to the WHO-led fight against neglected tropical diseases (NTDs). Many of the NTDs have an animal health or environmental component and affect the world's poorest. Therefore, combating NTDs would benefit from an enhanced cross-sectoral approach, such as One Health and Water, Sanitation and Hygiene (WASH), which are already successful, integral parts of health programmes in an increasing number of countries. Another example is the BMZ contribution of resources to OIE's next generation World Animal Health Information System, which will improve timely reporting of sanitary information by countries, including on zoonoses. This is one example of how digital surveillance and information systems facilitate timely, automated exchanges with (health) information systems of other sectors, which allows for integrated data analysis. A BMZ region-specific support to OIE targets capacity building of veterinary workforce in remote areas to fight against transboundary animal diseases and food insecurity, and operationalise the One Health approach on the example of elimination of dog-mediated rabies in West Africa. Preparedness of



Left: Veterinary services in the Horn of Africa help to control transboundary animal diseases and ensure food security.

© GIZ / Philipp Hedemann

Right: Human encroachment into natural habitats and wildlife trade bear the risk of zoonotic disease transmission and threats to biodiversity. A wet market in Iquitos, Peru.

© Karsten Leckebusch



veterinary services helps to respond to the climate change-induced shift in epidemiological disease patterns. Policies to enhance climate-smart agriculture management strategies are urgently needed to reduce greenhouse gas emissions, and this goes hand in hand with a more preventive, inter-sectoral approach to climate-intelligent livestock production, the control of livestock diseases and zoonoses.

More recently the BMZ initiated the One Health Research, Education and Outreach Centre for Africa (OHRECA), in close collaboration with and based at ILRI in Kenya. Specifically, the new centre will help develop capacities, support One Health initiatives on the continent and refine integration of evidence, policy and practice (see article on pages 22). The ambitious workplan and first results of OHRECA will serve not only as model for other world regions, but also as a starting point, to gain a better overview of existing One Health initiatives and One Health networks on the continent to build on and learn from.

Similarly, research agendas are undergoing a paradigm shift. The bolstering of Germany-based One Health scientific research among institutions with an international outreach has led to more collaborative efforts between traditionally only human health or animal health-oriented institutions and the creation of sector-overarching bodies (e.g. the German One Health Initiative, the new Institute of International Animal Health/ One Health at the Friedrich Loeffler Institute).

The environmental sector is not yet satisfactorily integrated into these efforts, but the

established structures are already partnering in development cooperation for capacity development and applied research world-wide. And there are promising approaches related to the reduction of risks of zoonotic disease transmission and threats to biodiversity due to human encroachment into natural habitats and wildlife trade (see article on page 32). A recently launched 'International Alliance against Health Risks in the Trade in Wildlife and its Products', a joint initiative of the BMZ and Germany's Environment Ministry (BMU) together with political and civil society actors, will tackle these challenges. BMZ has furthermore been elaborating strategies to sustainably improve biodiversity and protected area management: It is already a major development partner in accelerating political recognition of the importance of biodiversity conservation topics and optimising information sharing between sectors and countries. Combined with GIZ's efforts involving local communities to improve local food security, sustainable land use management and adapted income generation, BMZ's strategies decrease threats to ecosystems.

Next steps and vision for the future

The public and media perception of the One Health approach has gained impetus through epidemics with predominantly severe consequences for human health like Ebola or the ongoing COVID-19 pandemic. However, the One Health concept as conceived by the professionals involves a much broader consideration of the approach: There is a yet under-used potential to improve health and wellbeing of all, humans, domestic animals,

wildlife and the environment in a sustainable way, not just in the short run regarding the emergence of infectious diseases. In practice, biodiversity, conservation and ecosystem dynamics have clearly been orphaned in the assessment of disease risks, One Health policies or research agendas, compared to the rather narrow human-livestock interconnection. The time is now for the international development cooperation to prepare for a One Health approach that embraces sustainable use of biodiversity for food and agriculture, because it provides multiple, simultaneous benefits for human, animal and ecosystem health.

We have learnt that the balance between humans, animals and the environment remains fragile and complex. It merits more collaborative efforts and more vibrant exchanges between key professionals in the North, the South and across disciplines to secure incremental societal benefits through the implementation of a true One Health approach.

Dr Lea Knopf is Advisor for One Health at Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in Bonn, Germany.

Contact: lea.knopf@giz.de

Dr Renate Herrmann is Advisor for Animal Health at GIZ.

Contact: renae.herrmann@giz.de

Dr Tobias Feldt is Advisor for Animal Husbandry at GIZ.

Contact: tobias.feldt@giz.de

* With contributions from **Sabine Ablefoni, Dr Irene Lukassowitz, Ingrid Prem and Dr Christine Wolf**, all GIZ.