



*Woman with passion fruit crop  
(photo: USAID/Kenya)*

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# Food security investments

## Transforming the aquaculture, dairy and horticulture sectors in Kenya

Recommendations to support the transition from aid to inclusive aid and trade

**Wageningen/ Kenya June 2020**

Jan Joost Kessler, Ingrid Coninx, Catherine Kilelu, Simone van Vugt, Irene Koomen, Bockline Bebe, Katrine Soma, Asaah Ndambi, Joyce Gema, Benson Obwanga, Eugene Rurangwa, Indira Moreno Echeverri, Gonne Beekman, Jessica Wangui Koge, Jan van der Lee, Annabelle Daburon, John Wesonga, Ruerd Ruben



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# From aid to aid and inclusive agrifood trade

The 3R project was funded by the Embassy of the Kingdom of the Netherlands (EKN) in Kenya and ran between 2016 and March 2020. Its objective was to support the ambition of the Dutch government to transition from aid to inclusive aid and trade. This transition was informed by assumptions about how Kenya's agrifood and related socioeconomic systems were transforming as it became a low-middle-income country. 3R Kenya investigated a number of these assumptions and unravelled the different drivers of sector transformation with a focus on the aquaculture, dairy and horticulture sectors in Kenya. It examined programmes and investment including those supported under the food and nutrition security programmes of the EKN, in Kenya.

Kenya is one of many countries transitioning from an aid country towards a trade country, making it more attractive for foreign investments. To do so, Kenyan trade of agrifood sectors should not only become more resilient and competitive, but should also respond to global trends of becoming more inclusive and sustainable. With the volume of aid development expected to decrease significantly over the coming

years, the question is how donors can further support the agrifood sector transformation to secure safe food supply and how to support the transition from aid to inclusive and sustainable agrifood trade.

This brochure offers some practical suggestions to support that transition. These recommendations are based on the [3R Meta-Analysis Report](#), which, via a method of meta-analysis, brings together the results of the many 3R Kenya studies.



## Meta-analysis of 3R Kenya findings about the transformation of the aquaculture, dairy and horticulture sectors

Recommendations to support the transition from aid to inclusive aid and trade

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*The 3R Meta-Analysis Report.*

This meta-analysis is the result of four years research on the underlying assumptions of the market-led value chain programmes financed by the Netherlands. It is a culmination of many specific studies and directly adds value to our focus themes, such as food safety, reduction of post-harvest loss and inclusive market access. It further provides a clear direction in how we can do better and how we can be even more effective in our food security programmes.

Recommendations on inclusive governance systems and a better integration of climate change have already been taken up in our new programmes. We also consider the recommendations as important guidance, not only for ourselves, but also for policy makers in Counties as well as at National level. We therefore hope this work will assist policy makers in their decision making and lead to a sector transformation in which there is secure safe food supply for all.

**Sanne Willems**, *First Secretary Food Security & Water, Embassy of the Kingdom of the Netherlands, Nairobi Kenya*

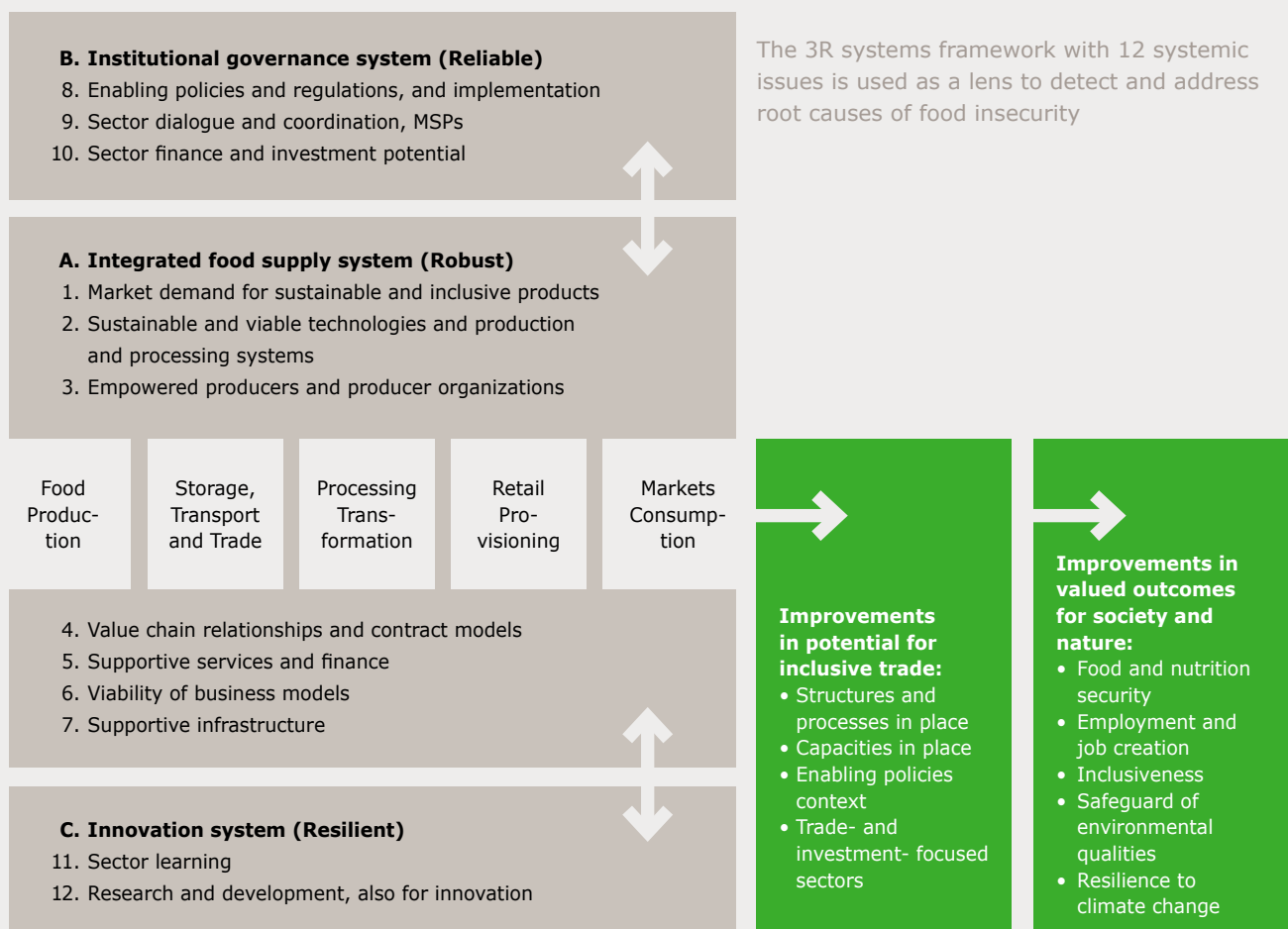
# Discovering investment opportunities through the 3R System approach

The 3R Kenya project uses a 3R System approach to understand sectoral transformation in the context of the transition from aid to trade. This means that we take a holistic approach to understanding the root causes of poverty, food insecurity and unsustainable trade and how they influence a sector's transformation to becoming more sustainable, inclusive and competitive. The 3R Systems approach treats agrifood sectors as part of a larger system.

Using the 3R Systems approach helps to detect the root causes that hamper the transition from aid to inclusive and sustainable trade, and therefore can guide donors in the development of their food security programmes during the different stages of the transition. The 3R system approach uses a framework that is based on the interplay between systemic issues within three systems: the food supply chain system, the institutional governance system and the innovation system.

As the performance of the identified 12 systemic issues improves, the sector will become more mature, contributing to more competitive, sustainable and inclusive food supply. The purpose of the 3R Kenya project, a research project funded by the Embassy of the Netherlands in Kenya (EKN), has been to draw lessons from market-led food security approaches that were applied to the aquaculture, dairy and horticultural sectors. The findings were used for the development of the new food security programme.

Change in awareness > Change in capacities > Change in Behaviour > Change in systems > Change in values



**B. Institutional governance system:**  
Policies, standards and markets that set the playing field for food supply chain actors and create and enable the business setting (Reliable).

**A. Integrated food supply chain system:**  
Interactions and exchanges between different supply chain actors, ranging from input (seed) and finance providers, production and processing agents, and retail and trade enterprises (Robust).

**C. Innovation system:**  
The players that support innovation (research, extension, dedicated projects) in the three sectors (Resilient).

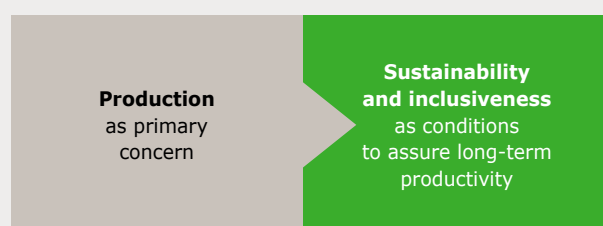
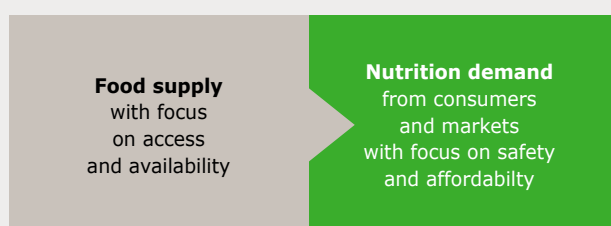
# Policy recommendations: three strategic shifts

The following recommendations are coming from applying the 3R Systems approach. The recommendations refer to three strategic shifts that are expected to emerge in donor aid and trade programmes.

## 1. Supply chain shift - from food access and availability to demand driven production of safe and affordable food

To strengthen the supply chain system, we recommend a strategic shift from focusing on improving access and availability of food towards meeting the nutrition demands of different income groups. This implies shifting to the broader food system that focuses on sustainable production, processing and distribution of nutrition-sensitive

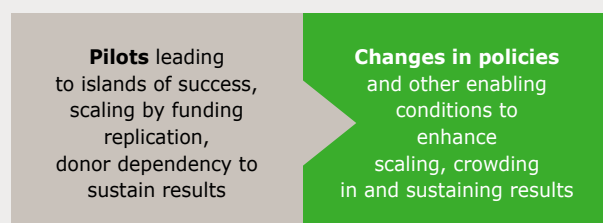
food products, food safety, food accessibility and affordability in an inclusive way. This means that food security programmes should include support that make sure that nutrition demands are known and met by producers and that production takes place within the boundaries of the planet to secure long-term food supply.



## 2. Institutional governance shift - from focus on farmers and pilots to enabling multi-stakeholders food systems

To strengthen the institutional governance of food system, we recommend a strategic change from a focus on farmers to one on empowering and supporting multi-stakeholder approaches that show leadership in food system and sector transformation.

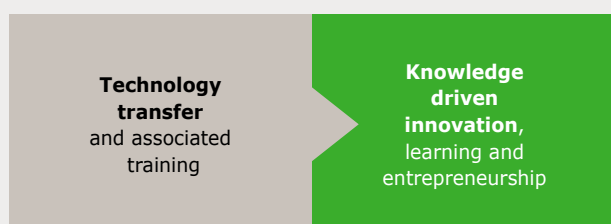
Food security programmes can also include support to local and national governments to develop, strengthen and evaluate policies for innovation, scaling, trade, inclusivity, food safety and sustainability.



## 3. Innovation shift - from technology transfer to knowledge driven and locally owned innovation

To strengthen the innovation of food system we recommend a strategic change from policy support for technology transfer to policy support for locally owned knowledge-driven innovation of technologies and management practices that is fostered by

learning and entrepreneurship. We also expect that the focus on extension and training in agricultural practices will change towards capacity development for entrepreneurship and other relevant skills.



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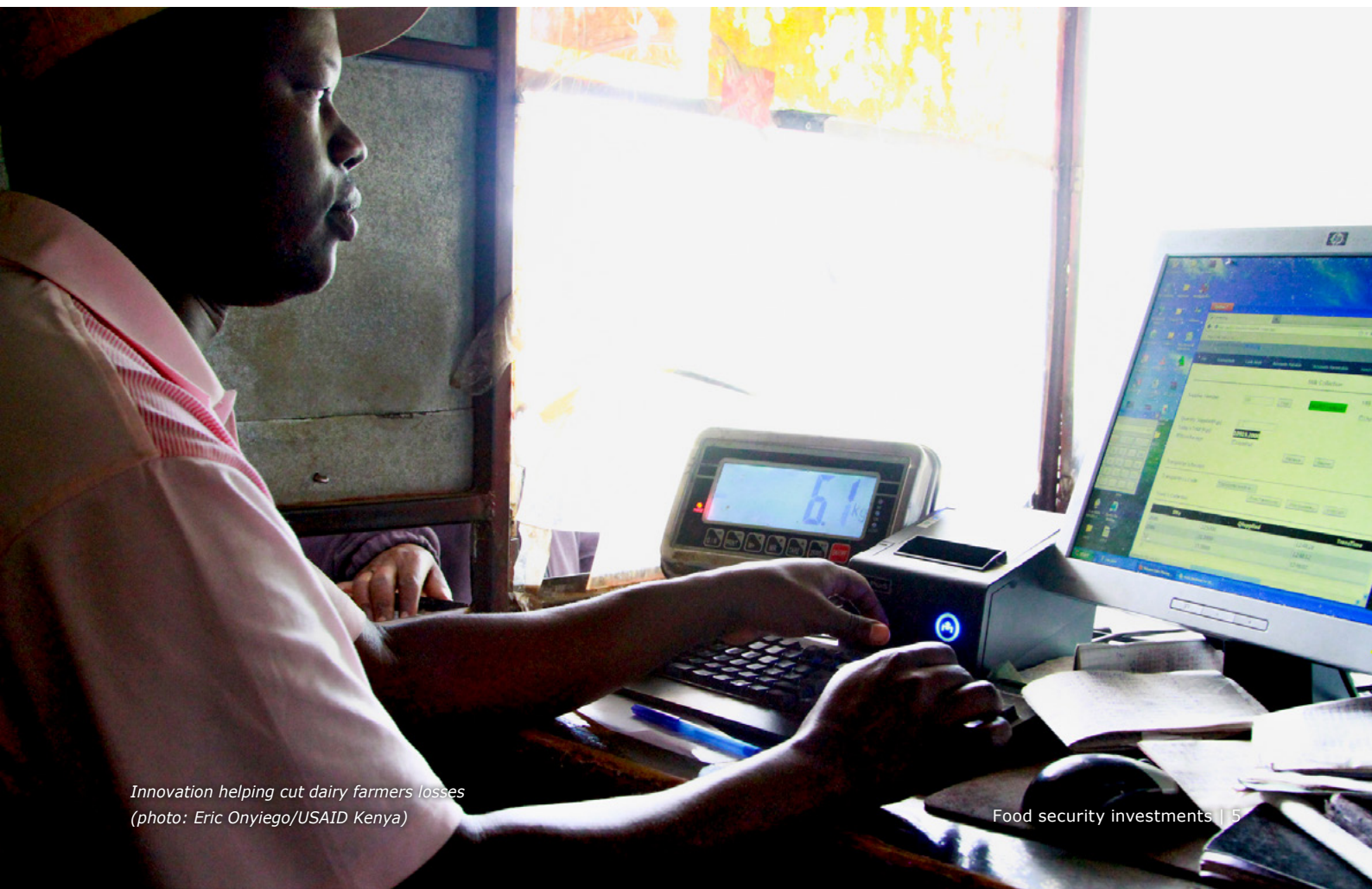
## Some practical suggestions to support the transition in Kenya

Within the context of the above three strategic shifts, the 3R System has numerous recommendations for investments in practical solutions, based on the evidence generated during the 3R Kenya research within the aquaculture, dairy and horticulture sectors. Following are a few practical suggestions:

- **The costs of production are still high in the three agrifood sectors. This is affecting their competitiveness.** These costs result from expensive inputs, high transactions and low labour productivity. Donors can take up the role to invest in (ICT) tools to track, analyze and reduce these production costs, while improving food quality. This information can support dialogues to solve the root causes of high production costs.
- **The effectiveness of producer organisations affects production costs.** There is much potential to improve their governance and entrepreneurial capabilities to negotiate better input prices and provide better services to their members for instance. 3R Kenya project has observed some good examples emerging, for instance in the cage fish farmers communities.

Donors should further encourage producer organisations governance and promote county-producer associations partnerships for further sector transformation (public-private partnerships).

- **Many investments have been made in technology transfer and farm-level innovations/pilots but scaling seems to be limited.** This is due to high investment costs and lack of access to investment capital, lack of service and enabling mechanisms to support commercialization. This misfit of transferred technology can be overcome when innovation is locally owned and designed, which could be supported by donors by building innovation capacities and financing locally owned innovation processes.





- **Extension services are an important part of innovation support services. Increasingly private-led extension services emerge but the quality is variable.** It is recommended to support the national development of a quality system for extension services to guarantee its impact and alignment with sectoral transformation and to introduce results-based systems for extension services to make sure the quality improves over time. Payment of private-led extension services seems to be difficult for the small and poor farmers. We concluded that extension service will require financial support by both public and private funds for the coming years, to ensure inclusivity and competitiveness. Donors can therefore support the development of new financial models as part of service delivery models.
- **When improving productivity, food safety and climate change & environmental pollution and degradation are returning issues.** The pressure of producing to meet food demand, risks leading to unsustainable production systems with food being unsafe. We found awareness on food safety in Kenya to be limited. Also, producers are not incentivized to take food safety into account. Donors should improve this systemic issue by supporting the implementation of food safety and quality systems that integrate public health impacts and the development of new market mechanisms to assure that consumers' demand for safe food becomes an incentive for producers.
- **Production that does not take into account climate change or the impact on natural resources significantly increases the risk for business discontinuity.** Weather extremes, lack of water, poor soil quality or biodiversity not only loss poses significant threats to farmers and their communities, but also to the production base of businesses. Given the large amounts of investments that are taking place in agrifood production, and will continue to take place in the coming years, it would be advisable that donors take responsibility to focus on environmentally sound technologies to secure long term sustainability and long-term return of investment.
- **With respect to both food safety and safe environment national and county governments play a role to design related policies.** Developing countries are in the initial stages to set up related policy frameworks and governance which can be supported by donors via capacity building, monitoring and evaluation methods. There are particular opportunities as supporting local (county) level governments, who often have high ambitions but lack the capacities.







Small scale aquaculture in Kenya  
(photo: McKay Savage)

More detailed information can be found in our  
3R Meta-Analysis Report and on our website:  
<https://www.3r-kenya.org>

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