Background

The 3R project – aiming at robust, reliable and resilient agri-food sectors in Kenya – is drawing to an end, and progress can already be seen. In the dairy sector, milk quality is firmly on the agenda. And in horticulture, traceability and food safety are now priorities, not only in export-oriented production, but in the domestic market as well.

These are just some of the results of ongoing collaborative research done with stakeholders in the 3R project. The research is resulting in insights that inform efforts to build better dairy, horticulture and aquaculture sectors in Kenya. The sectors are gradually depending less on aid support and becoming more competitive and attractive to trade and investment.

The 3R project is an applied research and sector-development project that started in 2016 and will finish at the end of 2019. It is implemented by Wageningen University & Research (WUR) in the Netherlands and by the African Centre for Technology Studies (ACTS) in Kenya, in collaboration with Egerton University and Jomo Kenyatta University of Agriculture and Technology, TradeCare Africa and SNV Netherlands Development Organisation, as well as private sector actors and governments. It is funded to the tune of 3.95 million euros by the Embassy of the Kingdom of the Netherlands in Kenya (EKN). The project aims to draw lessons on the transition from aid to trade and investment, through research that assesses and validates lessons learned from EKN-funded programmes and other initiatives, which focus on market-led approaches to drive agri-food sector development. The project focusses on topical issues within the specific sectors that are limiting their sustainable growth and development. For instance milk quality and safety issues including in the semi-formal markets such as the Milk ATM enterprise.

Key messages

- **Change**: Through deliberate efforts to engage with sector stakeholders, both public and private, the uptake of evidence from 3R action research is happening as stakeholders jointly work on changes and scale up successes.

- **Shockproof**: Transitioning from aid to trade means that agri-food sectors remain competitive and attractive to investors and that they engage more in international trade, amidst shocks that occur e.g. climate change and international price fluctuations.

- **Outputs**: By the end of 2018 the action-research had resulted in 35 research outputs, over a hundred evidence-based recommendations discussed at 13 stakeholder forums and events, and 14 presentations made at conferences.

- **Guidance for EKN**: Cross-sectoral briefs, synthesized from insights from the studies and expertise in the 3R team, proved useful to the EKN’s Food and Nutrition Security team in support of its new Multi-annual country strategy (MACS).

- **Way forward**: In 2019 more research will be concluded and the programme will be finalised. A meta-analysis will be made on the outcomes of the 3R project.
Change

A key strength is that 3R is not just a research project. It is also action oriented as it aims to contribute to change in the agri-food-sector. ‘It is one thing to do research, but quite another to also influence and change the sector,’ says Simone van Vugt of WUR. ‘Our stakeholder engagement strategy gives the sector stakeholders ownership of the processes that lead to sector-wide improvement.’ Van Vugt coordinates the 3R project together with Ingrid Coninx (WUR) and Catherine Kilelu from ACTS in Kenya. Kilelu adds: ‘Through our deliberate efforts to engage with sector stakeholders, both public and private, we note that they are picking up the evidence to jointly work on changes and scale up successes. We link up with existing platforms and events and sometimes we organise our own events.’ The uptake of 3R action research is happening at various levels at the same time. For example, it leads to policy makers making better informed rules and regulations. Farmers, processors and other actors in the value chain improve their practices. And consumers are becoming more sensitised on issues like food safety.

Shockproof

Transitioning from aid to trade means that agri-food sectors become more competitive and attractive to investors and that they engage more in international trade. ‘However, when a shock occurs – for example climate change or international price fluctuations – the sector needs to function in a way that it stays competitive,’ says Van Vugt. ‘This is an indicator of the sector moving toward robustness, reliability and resilience.’

Outputs

By the end of 2018 the action-research had resulted in 35 outputs, which included research reports, sector quick scans and study briefs. Over a hundred evidence-based recommendations had been discussed at 13 stakeholder forums and events, and 14 presentations had been made at conferences. Each event or conference was attended by at least 100 stakeholders, and each research output had been downloaded more than 50 times via the 3R website.

Highlights from the dairy sector

Milk quality and safety

Milk quality and safety are persistent issues in the Kenyan dairy sector, causing health losses and low revenues for farmers and other dairy chain actors. The 3R studies on milk quality have pushed quality and milk-quality testing higher up the agenda. ‘The Kenya Dairy Board, a key player in the sector, incorporated the lessons learned into its draft of new policies and regulation on milk quality,’ says van Vugt. The Kenyan dairy board based its move partly on the evidence from 3R studies on Quality Based Milk Payment Systems and has also been influenced by national and international processors.

Quality Based Milk Payment Systems (QBMPS) mean consumers pay a higher price for safe milk. This could be a solution to covering the costs incurred in the dairy chain for producing safer milk. A 3R study focussed on a pilot with QBMPS by Happy Cow, a Dutch-owned dairy company in Kenya. It showed that higher pricing for safe milk could lead to improved revenues for farmers and dairy chain actors, and to improved public health by reducing health losses. However, the cost-benefit analysis shows that QBMPS is not yet a viable way of financing itself under the current circumstances in Kenya.

Happy Cow is using the evidence from this research to put milk quality improvement on the agenda of sector players. Happy Cow is also using the evidence to address the weak points of the QBMPS pilot and make improvements. SNV’s Kenyan Market-led Dairy Programme (KMDP) has also used insights from the 3R research to fine-tune their project.

Other 3R studies confirmed that milk sold in Kenyan cities, both raw and pasteurised, is often not safe. This includes milk sold through cooled vending machines, a relatively new retail channel. SNV is using evidence from the research on milk quality to feed into their advocacy work with consumer group CUTS, a Nairobi-based NGO that works on consumer protection, trade and economic development. This will sensitise consumers on milk quality and safety issues.

Milk testing and grading at the Milk Collection Point as part of the QBMPS implementation

‘For sector-wide change to occur in achieving quality and safe milk,’ van Vugt concludes, ‘increased focus on quality needs to be owned by policy makers, sector stakeholders and consumers. We are making progress in this.’

Access to feed and fodder

Another limiting factor to dairy productivity and production in Kenya is access to and availability of quality fodder.

Silage making by a youth Service Provider Enterprise (SPE)

A 3R study finished in 2018 showed how emerging youth-led service provider enterprises enhance access to fodder, through improved silage making. The study shows that while these young entrepreneurs are strong...
on technical issues, their entrepreneurial performance is weak. **Recommendations** point to areas of investment to further strengthen this inclusive business model.

**Highlights from the horticulture sector**

**Traceability and safety**

Food safety is also becoming an increasingly pressing issue in the horticulture sector. Unsustainable use of pesticides results in too high levels of residues in fresh fruit and vegetables. While traceability and food safety standards are already in demand for export-oriented horticulture, and checks have been implemented, the 3R research is putting these issues on the agenda for the domestic market too.

As part of the 3R project, research was done to understand the utility and cost of different commercial traceability systems in Kenya that can be used to trace fresh fruit and vegetables. Another study investigated how food safety in the domestic horticulture could be catalysed, making use of experiences and investment opportunities linked to export oriented horticulture. These studies were instrumental in shaping the discussion on the development of new national traceability and food safety standards, mainly with regards to agronomic practices by farmers.

‘3R not only focuses on policy and governance, but also on changing actual practices in value chains and innovation,’ reiterates van Vugt. The 3R studies have inspired hotels and schools in Nairobi to start an experiment in 2019, in which they will use traceability systems when buying fresh fruit and vegetables to ensure their supply of safe and quality produce. In their marketing material, the hotels will inform guests of their use of the traceability tool to assure them of the safety of fruit and vegetables served. This pilot will be up-scaled among interested suppliers and market actors to test the traceability system in the wider domestic market.

**Climate resilience**

Drought, floods and temperature fluctuations caused by climate change present a challenge for Kenyan horticulture. 3R researchers studied the impact of climate change and developed a climate atlas that visualises the impact. The atlas is used, as part of a decision-support tool, by county officers and increases awareness among them that county-level policies need to be informed by evidence on the effects of climate change. ‘Apart from policy making, the climate atlas is also used in courses at the university of Egerton,’ says van Vugt. ‘Supporting education and agricultural services is part of our integrated approach.’

**Results from the aquaculture sector**

The Kenyan aquaculture sector is less advanced than the dairy and horticulture sectors but shows potential for growth and sustainable commercialisation given the increasing demand for fish. A comparative study done by the 3R team draws lessons from the aquaculture sectors in Egypt, Nigeria and Ghana, countries with a larger aquaculture sector. There is potential for more domestic tilapia and catfish growing in Kenya, but the sector needs support. Investments in infrastructure are needed to boost production and reduce postharvest losses, as are investments in improved access to inputs, credit, markets and capacity building. Institutional governance of the sector should be strengthened, through well-formulated policies. In a roundtable discussion on the results of the study held in March 2018, representatives of the State department of Fisheries and private-sector representatives including producers, input suppliers and investors actively engaged in the discussion on how to use these lessons to strengthen the sector.

**Cross-sectoral issues**

Issues that transcend sectoral business have emerged from the 3R studies and have received special attention. Apart from climate change and food safety, discussed above, one of these is inclusive business. How to make sure that women and youth, and small-scale farmers, benefit sufficiently from agricultural development? The issue is addressed in the study on youth-led service providers in the dairy sector, for example. It is also addressed in a policy brief exploring the concept of inclusive trade in the Kenyan context and in a policy brief on how to improve access to finance for small and medium-sized family farms in Kenya. Special attention is devoted to the trade relation with the Netherlands in a policy brief on how to fit Dutch technology to the Kenyan situation, and a brief on the willingness of Dutch companies to invest in Kenya.

**Guidance for EKN**

Drawing from the insights of the studies and the expertise in the team, cross-sectoral policy briefs were requested by the Dutch embassy to support its new Multi-annual country strategy (MACS). These briefs formed the basis for discussions held in 2018 with the Food and Nutrition Security team of the Dutch embassy on topical issues under consideration for the country strategy. Feedback from the officers indicated that the insights were useful to them. It was noted that the wide range of evidence-based findings were used to feed into their internal discussions in the preparation of the strategy document.

**What’s next?**

In 2019 more research will be concluded and the programme will be finalised. A meta-analysis will be made on the outcomes of the 3R project. Simone van Vugt: ‘We want to go beyond what we can learn from the three sectors, and from cross-sectoral issues, and move to the food system level. What is the evidence telling us?’
Do we see a move towards better institutional governance in sectors, better supply chain coordination or stronger innovation systems? And what else is needed to make the transformation to a robust, resilient and reliable agri-food system in Kenya? Finally, the output of the meta-analysis will be used to engage local and international stakeholders in drawing key lessons for the future.

3R Kenya Project

The 3R Kenya (Resilient, Robust, Reliable. — From Aid to Trade) project is a learning initiative supported under the Agriculture and Food and Nutrition Security (FNS) program of the Embassy of the Kingdom of the Netherlands. 3R Kenya seeks to generate evidence and lessons from FNS and other related programmes that support competitive, market-led models in spurring agricultural development. It focuses on the aquaculture, dairy and horticulture sectors. 3R Kenya is executed at a time when Dutch government’s bilateral relations in Kenya are transitioning from a focus on Aid to Trade to enhance the development of agri-food sectors. Through evidence generation and stakeholder dialogue, 3R seeks to contribute to an understanding of effective conditions for sustainable inclusive trade for transforming resilient, robust and reliable agri-food sectors.

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All research outputs are available at https://www.3r-kenya.org

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