Small-scale farmers typically operate in variable and heterogeneous environments that are inherently complex and require context specific solutions. In collaborative learning processes, farmers are part of the process of identifying and developing innovations suitable to their context.

In the example of Kenya, dairy farmers experienced most significant changes in overcoming the seasonal fodder shortage and increasing milk production by 75 percent on average. They stressed the benefits from record keeping in improving their business and negotiating the price of milking cows and their calves.

Percentage of change in milk production during farmer-led experimentation; Restrepo et al. (2018)

Collaborative learning processes have the potential to:

* Challenge farmers' assumptions and beliefs and build-up knowledge that is owned by all actors involved

* Strengthen farmers' capacity to innovate and communicate with other actors

* Spark a sense of progress and success from co-creating and testing of new knowledge

* Democratize research relationships and increase farmers' motivation to actively engage in improving their production and livelihood system

* Bring about change in practices as a result from exchange and integration of diverse knowledge

Overall, the approach aims at building up farmers' adaptive capacity to cope with, prepare for, adapt to and deal with complexity and uncertainty associated with sustainability challenges.

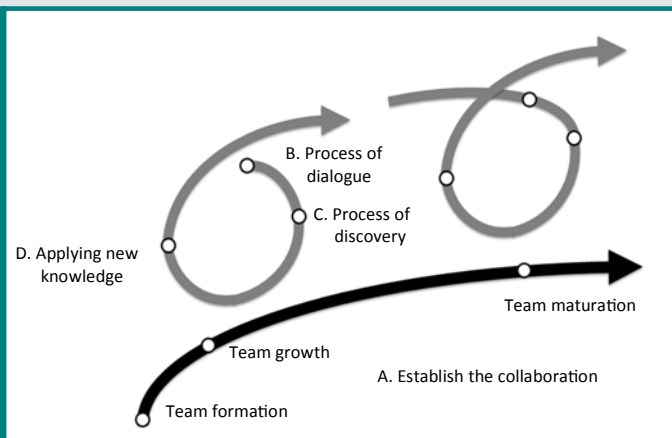# ACTOR-ORIENTED AGRICULTURAL RESEARCH

Fostering Change Through Collaborative Learning

Transdisciplinary research project with small-scale dairy producer groups in Kenya: A successful example on how social innovations can promote technical innovations

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For further information, please get in touch with us!

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In the following we give a short overview of the four phases of the collaborative learning process and of how this process evolved in the example of smallholder dairy farmer groups in Kenya.

"we are all learning and no one is ahead of others"

(farmer, Kenya)

Using visual methods, researchers and farmers co-investigated how different farmers regulate and influence their milk production and quality. Based on these insights, farmers identified best practices and entry points for innovations that fit closely into their specific production context.

A) Establish the collaboration: Collaboration with two smallholder dairy farmer groups was institutionalised so that farmers could get active roles and responsibilities and share decision-making power in the collaborative learning process.

C) In the **Process of discovery** possible solutions were identified and tested. Farmers were facilitated to develop and implement their own action plans. With the help of video proposals they applied for action funds to conduct peer-to-peer exchange and own experimentations to test suitable and affordable practices.

"everyone participated in planning… we knew we are part and parcel... [It] brought us all together, because we had to discuss and agree upon what to do"

(farmer, Kenya)

"the most important thing I have learned is the passion to testing new things"

(farmer, Kenya)

B) During the **Process of dialogue**, perspectives, experiences and information were exchanged between farmers, researchers and other stakeholders in order to jointly come to a common understanding of the problematic situation that should be resolved.

D) The **Application phase** finally describes the wider implementation of the beneficial innovations. In our example, news of the success spread to the neighbouring villages. This was further enhanced by short videos taken by farmers in which they presented/advertised their achievements.

OUR APPROACH

For further information refer to: Restrepo, M.J., Lelea, M.A. & Kaufmann, B.A. (2018) „Evaluating knowledge integration and co-production in a 2-year collaborative learning process with smallholder dairy farmer groups" Sustainability Science 13 (5): 1265–1286. doi: 10.1007/s11625-018-0553-6;
and Restrepo, M.J., M.A. Lelea, A. Christinck, C. Hülsebusch, B.A. Kaufmann (2014) „Collaborative learning for fostering change in complex social-ecological systems: a transdisciplinary perspective on food and farming systems" Knowledge Management for Development Journal 10 (3): 38-59. http://journal.km4dev.org/