Bern University
of Applied Sciences

RISE

Response-Inducing Sustainability Evaluation (RISE)

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In a Nutshell

RISE is an indicator- based method for assessing the economic, social and environmental sustainability performance of agricultural production at the farm level. The purpose of RISE is to contribute to enhancing the sustainability of agricultural production, by supporting knowledge-based processes that are founded on voluntary participation, confidentiality and capacity building. RISE users work in agricultural consultancy, education, in development projects and in raw material sourcing. The steps of a RISE analysis are goal and scope definition, farmer selection and contacting, data collection and interpretation, farmer feedback discussion and reporting.

The RISE method was developed at the School of Agricultural, Forest and Food Sciences (HAFL, www.hafl.bfh.ch), a department of the Bern University of Applied Sciences. Since the year 2000, RISE has been used on more than 3'300 farms in around 57 countries worldwide. HAFL and its partner institutions offer training courses, RISE analyses of single farms and farm groups, as well as RISE user licenses and technical support.

Sustainable Agriculture

Agricultural production and agriculture-based value chains are facing a multitude of challenges. They have to meet the demand of a growing human population for food and raw materials, in a resource-conserving, efficient manner that respects animal welfare and biodiversity and helps protect our climate. First and foremost, a farm is an economic enterprise, and a place where people work and live. Hence, good working conditions, a high quality of life and good economic performance are the pillars of a successful farm operation. A sustainable agriculture has to fulfil all these criteria, also in the long term.

The sustainability of present-day agriculture is compromised in various ways, depending on site, farm type and framework conditions. Low profitability, long working hours, unproductive nutrient losses, water pollution, soil degradation and water scarcity are examples of widespread sustainability deficits[1].

There are manifold strategies and measures to tackle these challenges. The importance of management principles, such as keeping soils covered, establishing tight nutrient cycles and documenting all farm operations has been underpinned by broad empirical evidence. Yet the heterogeneity of sites and environments in which agriculture takes place inevitably requires adaptations and concretizations of such principles. Often, framework conditions would need to change to facilitate a more sustainable production. Panaceas and rig-

[1] Up-to-date information on sustainability challenges can be found e.g. in the FAO annual report, „State of food and agriculture": www.fao.org/publications/sofa/2014/en

id „one-size-fits-all“ approaches are much less appropriate in agriculture than in sectors of the economy where production conditions, e.g. in factories, are largely standardized[2].

Sustainable running a farm is thus a very demanding task, one that requires a high motivation and in-depth knowledge of the operation and its environment. Farms can only develop sustainably, if a long-term perspective and farm strategy can be created. Such development can hardly – and should not – be enforced from outside the farm, but can be encouraged and supported.

These considerations motivate the **basic assumptions** of the RISE method:

Given the multitude of aspects relevant to sustainability, a thematically comprehensive positioning of the farm is useful, particularly in the context of strategy development. This positioning should provide a basis to prioritize topics and measures. It should allow identifying a possible need for action.

Sustainable farming is a highly demanding and complex task, and one that requires individual, site-specific solutions. Therefore, the farmers' competences and capacities must be recognized and developed where desired. A farm sustainability analysis should contribute to capacity development.

Analyzing and enhancing the sustainability of agricultural production requires comprehensive and intimate knowledge of production processes, sufficient time and budget, and a cooperation of the involved persons and institutions that is built on mutual trust and shared responsibility.

RISE Principles

The use of the RISE method contributes to a more sustainable agriculture by translating the sustainability paradigm to the farm level, and by making sustainability better measurable, communicable and tangible. By pin-pointing sustainability deficits and potentials, economically oriented farm management is complemented by the environmental and socials dimensions. Note that RISE is neither a control method nor a certification protocol, but is designed to contribute to education and consultancy schemes that aim at a **knowledge-based, intrinsically motivated, sustainable development of agricultural production at the farm level**.

The RISE method is…

Transparent. Purpose, process, benefits and possible consequences of participating in a RISE study are explained to farmers prior to the start of the analysis.

Voluntary. Nobody must be forced to participate in a RISE study, to disclose sensitive information or to implement measures.

Thorough. RISE consultants and trainers must command intimate knowledge of and experience in agricultural production and sustainable agriculture; they must command in-depth knowledge of the RISE method.

Confidential. Information collected or generated in a RISE study must not be forwarded without consent of the concerned farmers, neither within nor outside an institution. Strict standards apply concerning privacy protection and data safety.

[2] Further reading on local solutions: Ostrom et al. (2007): www.ncbi.nlm.nih.gov/pmc/articles/PMC2000490

These principles are the basis of the RISE Code of Conduct and the RISE Privacy Policy, both of which are binding for all RISE users[3].

RISE Contents

In the RISE analysis, the economic, environmental and social sustainability performance of agricultural production is captured and assessed along ten thematic axes. Each theme score is the arithmetic mean of several indicator scores. In **annex 1** the complete list of themes and indicators covered by RISE version 3.0, are presented. The criteria applied during indicator development are: relevance to farm-level sustainability, scientifically founded calculation method, reproducibility, sensitivity to the farmer's actions, clear and comprehensible valuation functions and a good cost-benefit ratio. With the shift to the new RISE 3.0, the static set of themes and indicators is being expanded to a flexible system, to which our partners can also contribute their approaches.

RISE Application

The first step of any RISE project is the **definition of goal and scope**. Previous RISE projects e.g. served to

better understand the agricultural basis of value chains and create a knowledge basis for action plans in the context of sustainable sourcing strategies;

enhance the hands-on knowledge of company personnel or students about agricultural production and sustainable agriculture at the farm level;

identify entry points for agricultural development projects;

support farmers and farm managers in developing and implementing a sustainable strategy for their operations.

The establishment and definition phase of the project also includes the clarification of the mandating organization's theory of change[4], i.e. the preconditions and mechanisms in whose context the RISE project is to make a positive impact. One central question in this phase is who shall contribute what to the project's success, and who expects what benefits. It is also defined, whether a RISE training (Fig. 1) will be conducted or whether farms will be analyzed by previously trained RISE consultants. Where groups of farms are to be analyzed (and provided feedback), sample size and farm selection criteria are determined according to project goals and farm heterogeneity, considering time and budget constraints. Possible selection criteria include representativeness, multiplier effects and the expected scope for improvement.

[3] Both documents are available in several languages at www.farmrise.ch.
[4] Explanation of the term: www.zewo.ch/impact/de/wirkungsmessung/hilfsmittel/theory_of_change

Fig. 1. Participants to a RISE training course in India. RISE trainings are held with groups of 5 to 15 persons and include the hands-on use of RISE on at least one farm.

After the training course, participants receive support by the RISE team at HAFL (or a partner institution) during the first five farm analyses. They are then certified as RISE consultants and can continue to analyze and advise farmers on their own, in the context of a RISE license. There are different licensing models, depending on place, purpose and volume of the intended RISE usage.

The contents and structure of **RISE training courses** are adapted to project goals as well. The core contents are:

Introduction into sustainable development and sustainable agriculture (sometimes with a sector-specific focus, e.g. on sustainable dairy farming, or a stronger focus on value chain issues)

Getting to know the RISE questionnaire and indicator set through practical exercises with the RISE software

Application of the RISE method to at least one farm.

The **sustainability analysis of an individual farm** starts with contacting and informing the farmer. If he or she agrees to participate in the analysis, a time for the **farmer interview** is fixed. This interview usually takes three to four hours, including a short tour of farm and fields, and is the main source of information for the RISE analysis (Fig. 2). The existing farm documentation is used to the greatest extent possible ("best available data").

Fig. 2. Data collection on a Mexican dairy farm. The farmer interview usually takes three to four hours. It is the main source of information for the RISE analysis.

Data are entered online or offline into the RISE software, or recorded on a paper questionnaire and entered in the office. Data collection covers agricultural production at farm level during one year (calendar or agricultural year). For some aspects, this scope of the analysis is extended temporally or spatially to better cover the sphere of impact of agricultural production. Parts of the questionnaire and of the calculation and valuation functions can be adapted to the regional or even the individual context of the farm.

Once all data have been entered and checked for plausibility, the **RISE indicator and theme scores** can be calculated. This is done through a sequence of calculations, partly using reference data from the RISE database, and involving normalization onto the scale visualized in Figure 3. All scores are combined with a color code and range from o to 100, whereas 100 represents an optimal (fully sustainable production) and 0 an inacceptable situation. Some of the RISE valuation functions are regionally adapted at the beginning of a project; e.g. humid and arid climates are distinguished, and regional water scarcity is taken into account. Some of the reference values and weightings can be adapted by users as well. Thus the tradeoff between universal applicability and relevance under the conditions of the farm can be partly overcome.

Fig. 3. The RISE scores and colour code. In this example, the farm scores 68 points for the parameter or indicator and is thus rated as being on track to sustainability.

The **RISE report** consists of a farm profile, the sustainability polygon, which is a visualization of whole-farm sustainability (Fig. 4), as well as comprehensive tables including intermediate values needed to better understand indicator and theme scores.

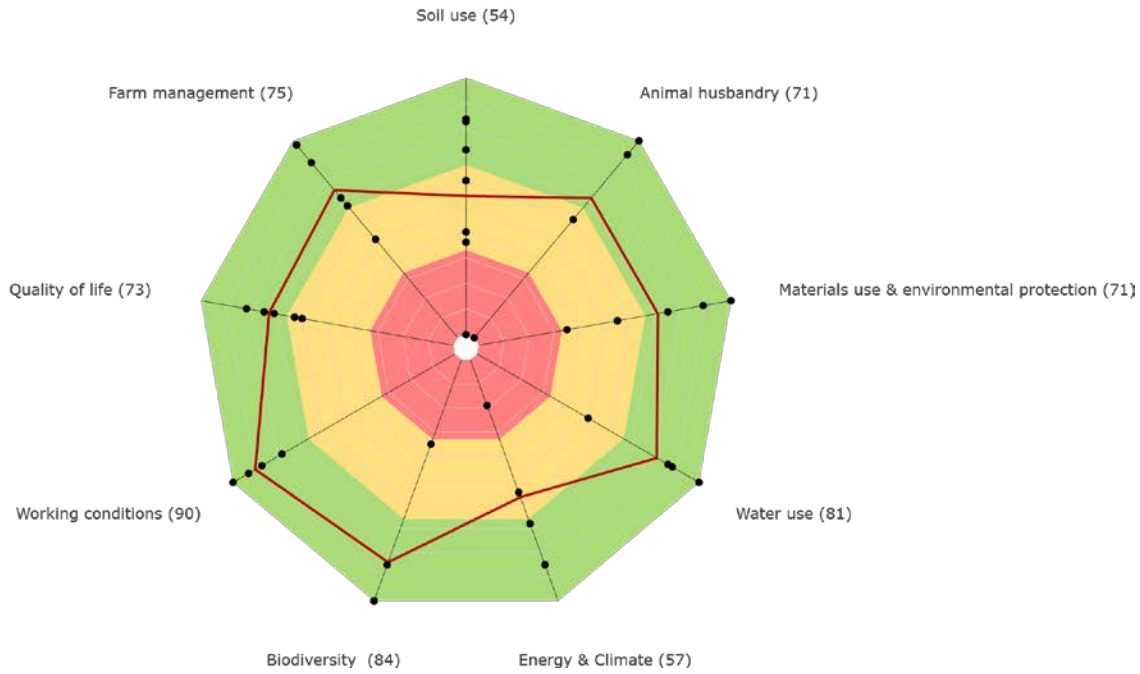

Fig. 4. The RISE sustainability polygon (Version 3.0). The red line connects the ten theme scores. These are the mean values of the indicator values displayed as black dots. Meaning of the colours as explained in Figure 3.

The report is the basis of the **feedback discussion with the farmer** (Fig. 5). The latter starts with a presentation and explanation of results, followed by a comparison with the farmer's view of the situation. Where potentials or deficits are seen by both the farmer and the RISE consultant, possible improvement measures are discussed and next steps defined.

In projects, where one or several groups of farms have been analyzed, the **summary report** contains statistical as well as qualitative analyses across the farm sample. Framework conditions influencing farm performance are identified and discussed. If desired by the client or the farmers, the conclusions can also include recommendations of measures through which performance could be enhanced. These recommendations are discussed with experts for the respective topic (animal health).

Fig. 5. RISE feedback discussion with a farmer in Kenya. Results can also be presented and discussed in group sessions.

RISE Experiences and Network

The RISE method has been used on more than 3'300 farms in 57 countries since the year 2000 (Fig. 6): dairy, mixed, vegetable and arable farms, coffee, cocoa, tea and oil palm plantations, as well as smallholder farms in developing countries. RISE was and is used and further developed in joint projects of HAFL and Nestlé, the GEBERT RÜF Foundation, the Research Institute for Organic Agriculture (FiBL), the Danone Fonds pour l'Ecosystème, the Bioland and Bio-Suisse associations, the Swiss Federal Office of Agriculture (BLW), the German development agency GIZ, and further institutions in Switzerland and abroad. The method and software are used for teaching at the Bachelor and Master levels, at several universities in Switzerland and Germany. The development and use of RISE have been the subject of 70 student theses, from term paper to PhD thesis.

Sustainable agriculture is a team sport – we are determined to consequently implement this lesson learned from 16 years of practical work on this topic. If you would like to be a part of the RISE network, do not hesitate to contact us.

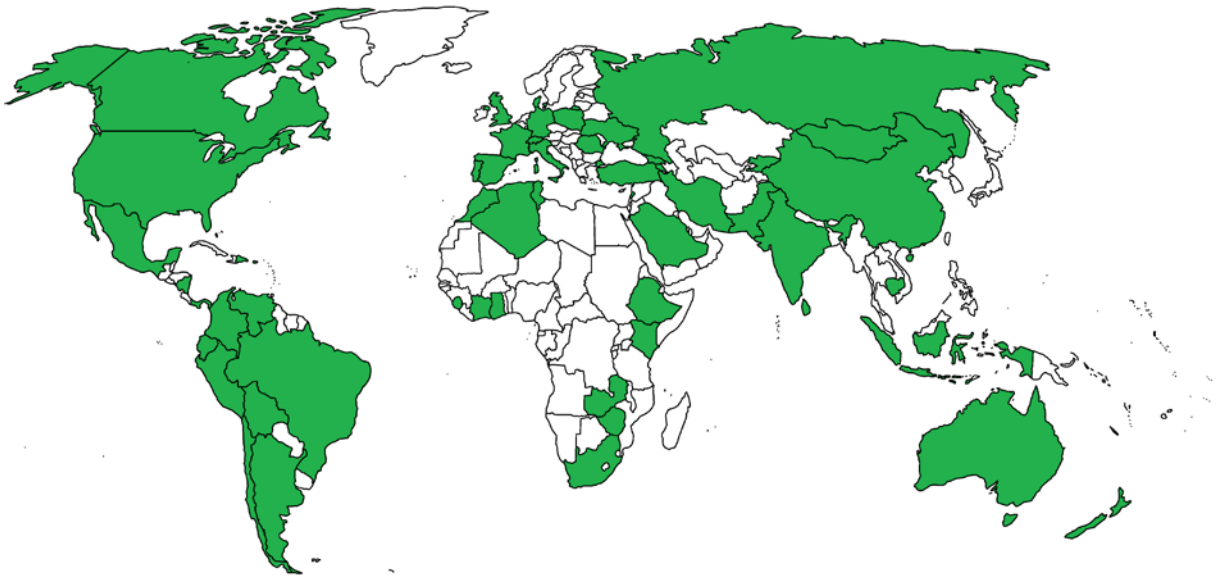

Fig. 6. Countries in which RISE was used from 2000 until 2016.

Further information is available at: http://rise.hafl.bfh.ch

RISE Software (create a free guest account!)**:** www.farmrise.ch

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Annex 1. Themes and indicators of RISE 3.0

Topics	Indicators
Soil use	• Soil management • Crop productivity • Soil organic matter • Soil reaction • Soil erosion • Soil compaction
Animal husbandry	• Herd management • Livestock productivity • Opportunity for species-appropriate behavior • Living conditions • Animal health
Material use & environmental protection	• Material flows • Fertilization • Plant protection • Air pollution • Soil and water pollution
Water use	• Water management • Water supply • Water use intensity • Irrigation
Energy & Climate	• Energy management • Energy intensity • Greenhouse gas balance
Biodiversity	• Biodiversity management • Ecological infrastructures • Intensity of agricultural production • Distribution of ecological infrastructures • Diversity of agricultural production
Working conditions	• Personnel management • Working hours • Safety at work • Wage and income level
Quality of life	• Occupation and training • Financial situation • Social relations • Personal freedom and values • Health
Economic viability	• Liquidity • Stability • Profitability • Indebtedness • Livelihood security
Farm management	• Business goals, strategy and implementation • Availability of information • Risk management • Sustainable relationships