

Sustainable Agriculture – How Do Farmers Get Relevant Knowledge?

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Sustainable Agriculture

- operates in a way that reduces harmful impacts on climate, soil, water, air and biodiversity, as well as animal welfare and human health,
- ensures that the basic needs for food and agricultural raw materials are met in quality and quantity by present and future generations,
- uses **as few fossil, non-regenerative inputs** (e.g. petroleum-based) as possible,
- operates predominantly on a regional basis,
- provides long-term employment, a satisfactory income and dignified and equal working conditions for all people working in agriculture,
- is less susceptible to unfavourable influences such as climate change or high price fluctuations.

Bundesinformationszentrum Landwirtschaft (2021)



Sustainable Agriculture

- Puts the emphasis on methods and processes that improve soil productivity (...)
- Aims to **minimise the use of inputs from non- renewable sources** and petroleum-based products and replace them with those from renewable resources.
- Focuses on **local people and their needs**, knowledge, skills, sociocultural values and institutional structures
- Ensures that the basic nutritional requirements of current and future generations are met in both quantity and quality terms
- Provides long-term employment, an adequate income and dignified and equal working and living conditions for everybody involved in agricultural value chains
- Reduces the agricultural sector's vulnerability to adverse natural conditions (e.g. climate), socio-economic factors (e.g. strong price fluctuations) and other risks
- Fosters sustainable rural institutions that encourage the participation of all shareholders.



What is sustainable agriculture?





Traditional understanding:

scientific knowledge is passed to farmers by extension services

- A more holistic understanding includes policy, private companies and farmers' associations, but also community movements into knowledge coproduction
- Todays view "...no single group of actors should appropriate the right to define what type of combination should exist between scientific and 'local' forms of knowledge" (IAASTD 2009:17)

"This leads to rethinking the role of **Agricultural Knowledge, Science and Technology (AKST)** in achieving development and sustainability goals; one that seeks more intensive engagement across diverse worldviews and possibly contradictory approaches in ways that can inform and suggest strategies for actions enabling the multiple functions of agriculture."

(IAASTD 2009:3)





Global Report



What is knowledge?

Explicit and tacit knowledge

- What you learn in school and what from practice
- What you learn through books and what from imitating, probing

System, target and transformational knowledge

- Explain the world
- Set objectives, develop values and norms
- Plan, do and reflect upon interventions

Acquisition of knowledge is an active, frequently two-sided process

- Learning means change
- Learning is frequently connected with social interaction
- Adult learning is strongly related to one's interests and needs









2 Where and how do farmers get relevant knowledge?

2.1 Sources of knowledge:

- Educational trajectories
- Relations, networks, social systems

2.2 Examples

- Mobilising local knowledge among peers
- Targeted professional information from advisors and other sources
- Value-driven learning with superiors and supervisors







Relations, networks, social systems



You may look into:

https://www.youtube.com/watch?v=RUbTbks6b3M

KIT 2016



Relations, networks, social systems



20/05/2021



Mobilising local knowledge

Seeds in farmers' hands: escaping poverty through diversity and local knowledge



In the Philippines, once the leading economy in Southeast Asia, 38 percent of the population now live on less than three dollars a day, while one in seven people are undernourished. With the "Green Revolution", the once diversified traditional form of agriculture was fundamentally transformed. The muchlauded high-yielding varieties, offered in combination with chemical fertilizer and pesticides, led many smallscale farmers into a debt trap: the price of inputs and resources increased while yields failed to match expectations.



It also caused the erosion of rice genetic diversity. To escape this dead end, farmers, scientists and nongovernmental organizations joined forces in the 1980s and founded MASIPAG, the Farmer-Scientist Partnership for Development. They collected and maintained more than 1,300 traditional rice varieties and bred 1,288 new MASIPAG rice varieties that are specifically adapted to local soils and climate conditions. Each year, these rice varieties are grown and are further developed on almost 200 trial farms. The farmers learn how to assess their varieties, how to choose those which are best-adapted to the natural

conditions of their plot of land and how to identify which seeds can best be used for breeding new varieties.



Masipag website Wasipag website Massipag website Massipag website Massipag website Massipag website Massipag website



Impact assessment



MASIPAG

A farmer-led network of people's organisations, scientists and NGOs

In the 80s, progressive scientists initiated consultations with farmers and NGOs how to effectively provide farmers with improved rice varieties

Step by step a network with different actor types was built:

- peasants' organisations (at village level),
- NGOs and
- scientists



Mobilising and sharing local knowledge: MASIPAG, the Philippines

MASIPAG has

- 512 member people organizations
- 41 NGO partners; 20 church-based development organizations
- 15 scientist-partners

around 30,000 farmers reached in 63 provinces

3 farmers using MASIPAG seeds, for every farmer-member



- 88 trial farms (maintaining a minimum of 50 traditional rice varieties)
- 2 national back-up farms
- 8 regional back-up farms

More than 2,000 rice varieties collected and maintained: 600 traditional rice varieties, 1,299 MASIPAG rice, 506 farmer-bred rice

More than 100 volunteer farmertrainers



Pluralism of advisory services – organisational diversity between and within the German states

Schleswig-Holstein		
Hamburg Mecklenburg-West Pomerania Bremen Lower Saxony Saxony- North Rhine- Westphalia Westphalia Hesse Rhineland- Palatinate Saarland Baden- Württemberg	Table: Category of organisations represented by the survey respondents (2020)	
	Category of organisations	Number of respondents per category
	Farmer-based organisation (FBO)/ Professional organisation	12
	Government or ministry based advisory organisation	8
	Mixed, other	4
	Non-Governmental Organisation (NGO)	2
	Private/Commercial advisory organisation	23
	University-based/Research-based advisory organisation	1

Total

50



Targeted information – from where do farmers receive it?

From a representative survey among farmers in Brandenburg, Germany:





Targeted information – who are the farmers that get active and entrepreneurial?

Selected findings from an EU wide standardised survey with 1100 farm managers:

- 68% of the farmers had contact with private advisors, 65% with public advisors, 47% with those from upstream and downstream companies; on average with 2.5 types out of 6 possible types
- On average, each farm has 27 contacts with AS per year (25% up to 6 only, 50% 15 24 and 25% 59 and more)
- Farmers with full agricultural training have significantly more contacts with AS than those with less or no training
- Farmers from companies have more contacts than those from family farms
- Number of contacts increases stepwise with economic size of farms











Value-driven knowledge acquisition: **Statements on the biodynamic ,Free Agricultural Training**





sustainable agriculture – access to relevant knowledge



3 The Agricultural Knowledge and Innovation System Approach

- Realise the **diversity of sources** from which farmers get information
 - peers, colleagues, role models, family and friends
 - advisors, trainers, supervisors
 - digital media (databases, tutorials, platforms)
- Realise the diversity of situations which farmers are facing and that they are connected through individual and collective sense-making and action
- -> adopt a system perspective to understand and support sustainable agriculture



3 The Agricultural Knowledge and Innovation System Approach





KIT 2016





GFRAS: global forum for rural advisory services





4 Looking ahead – challenges for farmers

• All over the world, **farmers are not broadly reached by advisory services**, in particular small scale farmers

e.g. country reports from Benin, Burkina Faso, Niger (GFRAS 2012)

e.g. only 40% of Indian farmers have access to agricultural information; or, the public extension system reaches only 6% of the roughly 100 Mio farmers (Kaegi. 2015)

• And: all over the world, **farmers are not sufficiently proactive** to get access to information that is available

Generally, the better educated and the better off farmers make use of (formal) advisory services and other professional networks, thus lifelong learning is the new must-be attitude



knowledge system approaches

- the current policy focus in research and development on innovation system support is a promising way to induce change towards a more sustainable agriculture
- however there is limited dissemination (scaling out and scaling up), and a need to better reach the broad crowd of actors in the fields of education and training
- There is a need to mobilise more resources for capacity building among small scale farmers, combining general and specific needs









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Literature, internet sources, others

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And ... continue with dialogues on food systems!



Woman pointing to food training materials IF



https://www.un.org/sites/un2.un.org/files/unf ss_independent_dialogues_guide_021621.pdf

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