

fusion of horizons

Communication
methods for
participatory
research



»Science is predicated on the concept that science is arriving at truth - at a unique truth. The idea of dialogue is thereby in some way foreign to the current structure of science, as it is with religion.«

BOHM

exhibition



.....fusion of horizons

Communication methods for participatory research

»All testing and confirmation
and disconfirmation of a hypothesis
already takes place within a system.«

WITTGENSTEIN

From Questioning to Conversation



Introduction

Involving farmers in agricultural research activities has been part of the research agenda for more than a decade. However, farmers' involvement was often restricted to on-farm trials or the use of conventional survey methods like questionnaires. In the early 90s researchers involved in millet-breeding research at ICRISAT felt the need for a more intensive communication with farmers. This led to a joint research project between the department of communication and extension at the University of Hohenheim in Germany and ICRISAT in India, focusing on communication tools for farmer-researcher interactions.

During the project (1994-96), classical Participatory Rural Appraisal (PRA) tools (modeling, mapping, ranking exercises, etc.) were tested, modified and adapted for agricultural research. The interaction with farmers as well as careful observation of their communication styles led to the development of new tools like seed mixture simulation, panicle selection and rainfall pattern exercise.

The exhibition introduces some of the communication tools applied in this research project.

»My own view, to be frank,
is that there is no such thing as the
scientific method.«
PUTNAM

Participatory Research and its Goals

Today, science is no longer regarded as an endeavor that leads to objective and true knowledge about the world around us. It has become established, that theories and facts are interdependent, and that facts are only facts within a theoretical framework. Such an approach acknowledges that knowing comes from a perspective and each perspective has its own bias.

Participatory research recognizes the existence of differing knowledge systems and perspectives. The goal is to bridge the gap between the actors of different knowledge systems through the creation of dialogical communication.



Participatory research builds upon the innate ability of all human beings to create knowledge. The creation of knowledge is not a monopoly of "professionals".

Participatory research is a learning process for rural people as well as for researchers by sharing and generating knowledge.

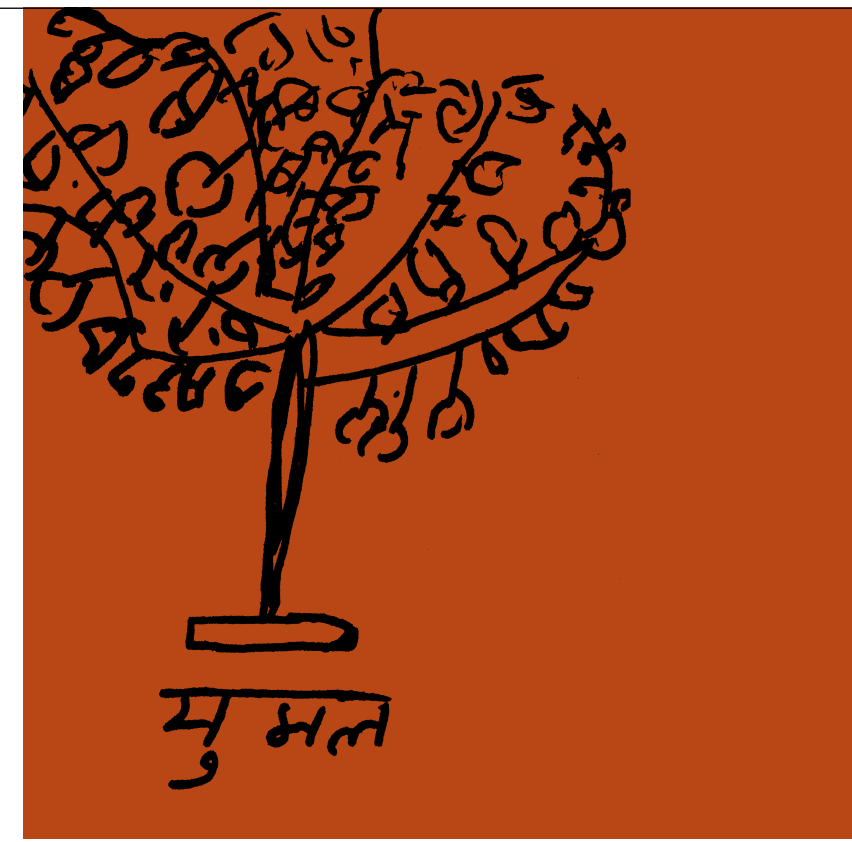
Such a process aims at constructing a consensus knowledge, which is constantly becoming more informed and sophisticated.

»... inventing tools may lead to the tyranny of tools. When tools become tyrannical, instead of making use of them, they rebel against their inventors and take revenge. Then we are made tools of the tools that we make.«
SUZUKI

Tools for a Dialogue

Communication tools can support farmers and scientists in expressing their knowledge, while at the same time creating opportunity to enter into a process of cyclic understanding. To achieve this, the tools must provide a platform for people that bridges the gap between the different communication styles and promote the expression of complex knowledge structures.

Creative and reflexive use of the tools is necessary to secure that the conversation does not lead to superficial results but to mutual in-depth understanding.



- The preferred mode of communication of scientists is asking questions, taking notes and processing the collected information in a written form. Their knowledge is often explicit.
- Farmers, on the other hand, generate and communicate knowledge through continuous collective practice. Their knowledge is often implicit knowledge. Painting, making clay figures and singing songs together are ways in which farmers in Rajasthan communicate with each other and pass on their knowledge over space and time.
- The tools build on these everyday practices and materials of local people, thereby enabling their involvement and the explication of their knowledge. The closer materials and items used are to the people's culture and daily life, the easier it will be for them to get involved and contribute their knowledge. Most tools build on visualisation as a basis for dialogue and analysis.

The women of Rajasthan have developed an elaborated practice of mixed sowing. The exercise simulates and visualises farmers seed mixture practices and promotes the verbalisation of diverse farming practices to scientists.

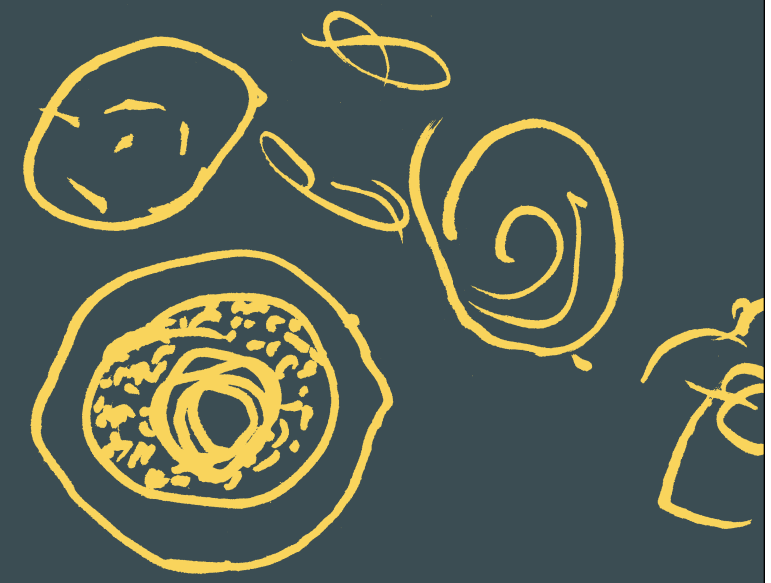
Working with clay is a common activity for people in Rajasthan - clay is used for the construction of buildings. Modeling with clay builds on this familiarity and skill.



»Interviewing is rather like a marriage: everybody knows what it is, an awful lot of people do it and yet behind each closed front door there is a world of secrets.«
OAKLEY

Semi-structured Interview

Semi-structured interviewing is the core of participatory research with farmers. Semi-structured interviewing identifies only the intended topics for the conversation beforehand. Contrary to a questionnaire, the questions and their order are not designed ahead of time but are instead formulated during the interview. They are situation-specific: setting, location, timing and the people involved have an impact on the course and outcome of the interview. It is important, that the interviews be conducted in natural and relaxed situations, such as shops, markets or public meeting places, at home or in the fields.



The researcher follows the respondent on a journey through his or her mental landscapes. This requires open-ended and non-directive questioning.

A "sharing of meaning" can only be created through the researchers careful and friendly listening. Priority is not the collection of scientifically exploitable information but mutual understanding. Semi-structured interviews are the backbone of each farmer-scientist interaction. The most sophisticated participatory or dialogical communication tools will fail, if a relaxed and open conversation is not possible.



»All human thought comes into existence
by grasping the meaning and mastering
the use of language.«
POLANYI

Rural communities are social networks: men and women, pastoralists and agriculturalists, animal healers, barbers and priests are all connected through a communication and relationship web. The interplay between laymen and specialists has a great influence on the exchange of information and the generation of knowledge. Therefore it is important to talk to both laymen and specialists. Knowledge regarding the number of families, land ownership, location of wells, soil types and the micro-environ-

ment of the village may be common knowledge to almost all members of the community, but there are people who have a more detailed knowledge in these areas. Such people and traditional specialists like animal healers, priests or astrologists, etc. are potential key informants. An intensive dialogue with key informants provides the chance to explore specific aspects in detail, to share in-depth knowledge and to move beyond the boundaries of the scientific and indigenous knowledge systems.

Key Informant Interview

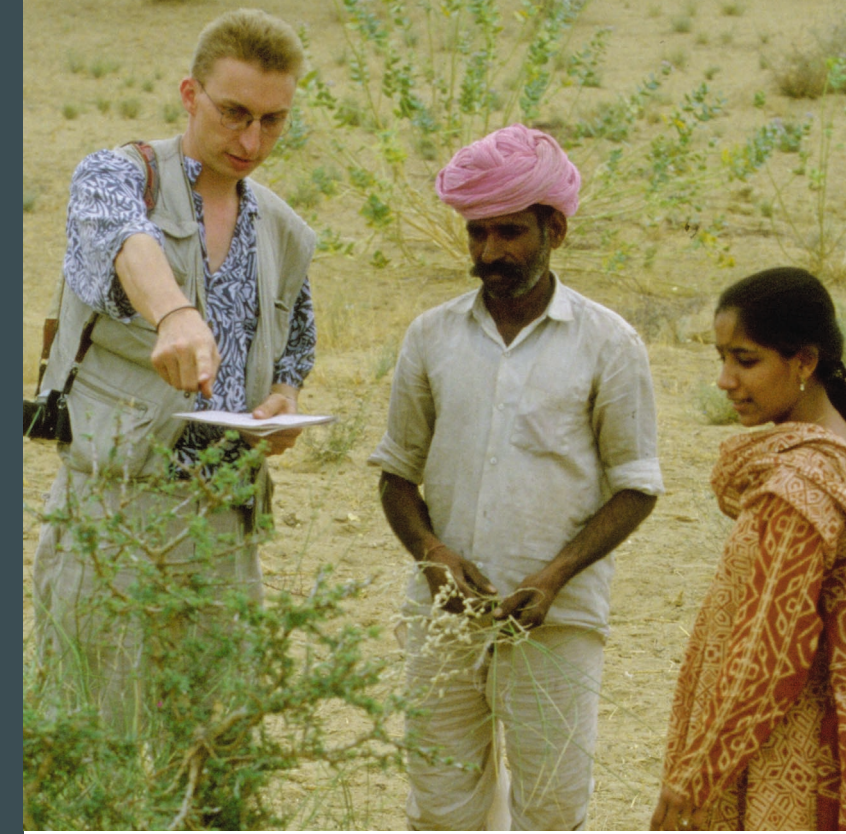


Old women of the Jat community are experienced in seed storage and selection procedures.

»I have always found that most of
the mistakes in thinking
are not mistakes of logic at all
but mistakes of perception.«
DE BONO

Transect

By walking through a cross section of the community, spatial data such as ecosystems, land use, settlement patterns and the people's perception of these can be investigated and discussed in detail. This tool helps generate an overview of a given area (i.e. slopes, drainage, vegetation) and at the same time draws attention to unusual characteristics. Used in connection with semi-structured interviews, this tool can be particularly helpful in understanding interactions between the physical environment and human activities. It provides an excellent possibility to enter into a dialogue by giving the villagers an opportunity to show and explain their environment to outsiders and for outsiders to ask questions about specific features they have observed.



Farmers and scientists
discuss agro-ecological
conditions of the village,
such as the distribution of
wild plants in different
types of fields.



Drawing supports the
discussion about strategies
used by the farmers to
utilize the diverse con-
ditions of their plots,
according to soil, moisture
and fertility conditions.



»My pencil is cleverer than I.«
EINSTEIN

Mapping

Participatory mapping is a flexible communication tool. It can be used for a variety of topics and purposes, i.e. soil maps, water distribution maps, social maps, mobility maps, etc. Mapping is not restricted to depict the present situation, it can also be used to explore issues of the past and future. Maps made by different social groups in a village (gender, caste, etc.) can be used to understand different people's perceptions and conceptions of reality.

Mapping catalyzes communication at the beginning of participatory research. It helps to establish rapport between researchers and the villagers by encouraging villagers to become main actors at the very beginning of the participatory research. It can also be used to explore issues more in-depth at a later stage.

The aim of mapping is not only the creation of images of the social or natural environment, but also to support villagers to express themselves and to create a visual basis for discussions and dialogue.



Through mapping villagers can easily create and explain their social and natural environment and doing it in open space, allows everybody who wishes to join the process. In addition, mapping helps local people to take a leading role in the communication process and allows researchers to get an idea of the mental maps of the villagers.



It is useful to have a photo and/or a drawing of the map for documentation and further discussions. The resulting map and the information coded in it is a visual reference and basis for further dialogue and can be elaborated whenever new insights emerge.

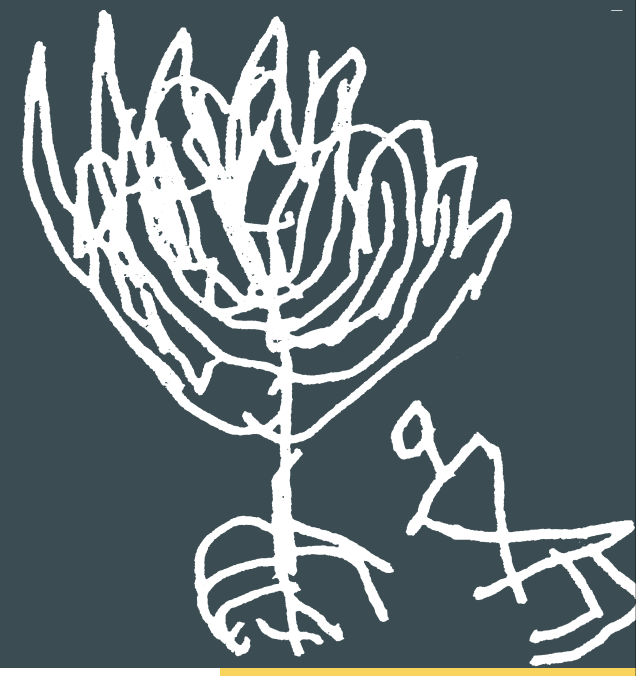


»Every civilization tends to overestimate the objective orientation of its thought and this tendency is never absent.«
LEVI-STRAUSS

Resource Mapping & Social Mapping

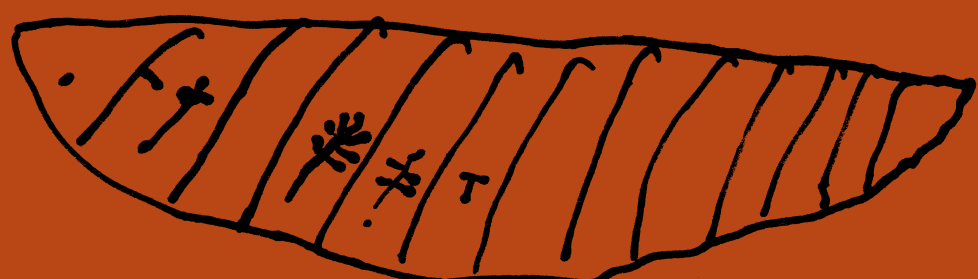
Resource maps and social maps are often among the first tools used by the PRA team during village visits. They can provide useful entry points for further discussion.

Resource maps focus on perception and use of land and natural resources, whereas social maps focus on social groups and on services, while at the same time including infrastructure and housing. Both provide different approaches towards understanding the interplay between people of the village society, their perceptions and their natural resources.



A process of dialogue between the different groups of the community is started and established through resource mapping. Problems, resources and potentials can be identified and related.

Discussions during and after the development of the map usually provide valuable insights - not only for the outsiders.



»Tacit knowledge is knowledge commonly not conscious or for spontaneous report, but necessarily implicit.«
HYMES & DELL

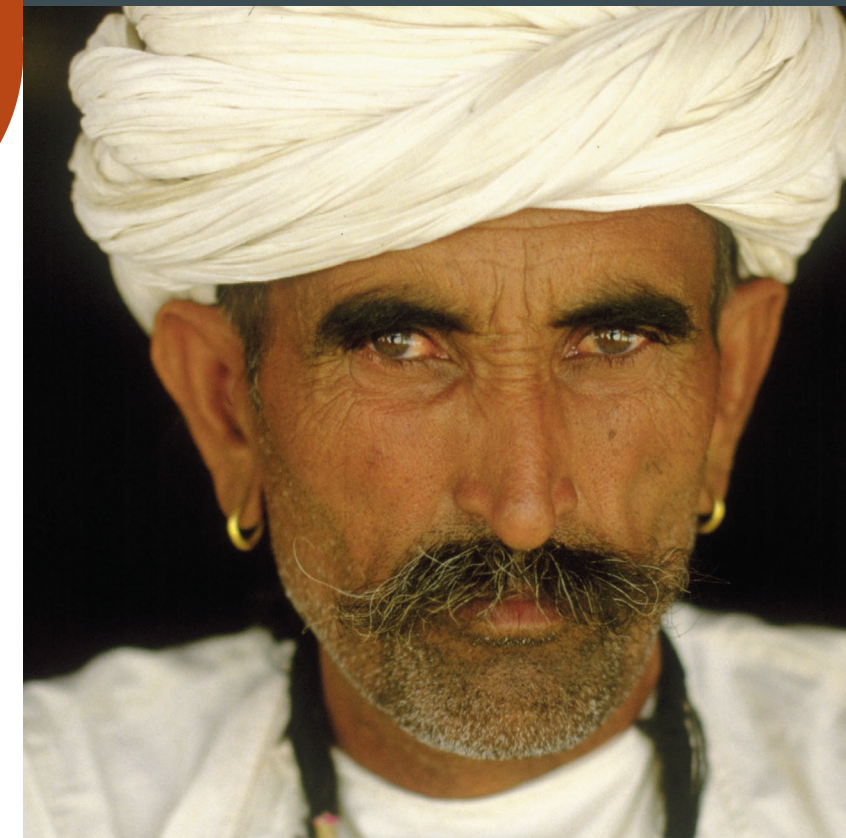
While village mapping is successful in generating an overall picture of the bio-physical and socio-economical situation of the village, it is not precise enough to understand farming practices of farmers in detail. Farm mapping focuses on depicting the different plots cultivated by a farming family. First, family members draw the different plots they cultivate and characterize the plots in terms of suitability for different plants. In a second step, they explain what they sowed last season and in previous seasons on the different plots. By applying the tool of seed mixture simulation and farm mapping, the complex agricultural practices of the farmers in Western Rajasthan can be discussed.



Farm Mapping



Such discussions revealed, that farmers exploit the diversity between their plots and even within the plots through careful selection of plants and varieties regarded as suitable for the conditions of the different plots.



»A very long time ago there was no mountain in Digadi. One day the earth started to move and a mountain came out of the earth. It grew and grew. The people and animals were frightened and started to cry. The cows shouted "moo, moo". Then the mountain stopped growing. This was the origin of the mountain in our village.«
ARJUN SINGH

Modeling

Models, being three dimensional, have advantages over two dimensional representations such as mappings and drawings. They are, once carefully prepared, more accurate in representing the topography and are therefore more adequate in discussing for example moisture conditions in areas like Rajasthan, where the landscape is formed by plains hills and dunes and its consequences on use of different millet varieties. Miniature depictions of the village can be used for weeks during periods of discussion – attracting curious villagers and passers-by.

The potter of the village, familiar with clay works, and the barber, familiar with the social structure jointly prepared a village model, which was used during workshops. Even though the villagers of Rajasthan are familiar with working with clay, they are still fascinated to see their entire village as a clay model. The discussions focused on farmers' strategies in coping with the scarcity of water and the poor soil conditions in their villages.

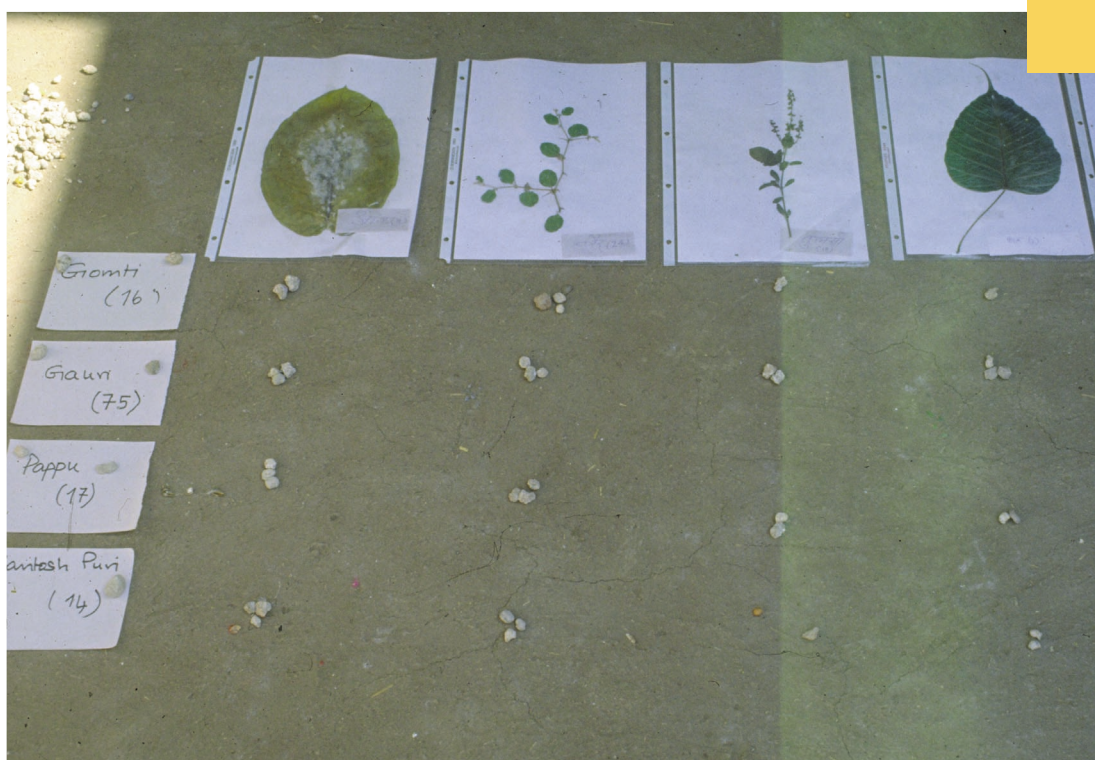


»What is, in your opinion, the most important agricultural problem you face?«

»Son, how can you ask me a question like that? Last year, we had malaria here and the whole family was sick. We were unable to harvest even the ripe millet. Three years ago we had no rain and after that we had no good seeds for sowing. What next year will bring, only God knows.«

Ranking

Ranking tools can be used to clarify priorities, to elicit farmers' criteria, or to evaluate results of trials. Ranking can be done in a very simple manner – by placing things into an order of preference – or by carrying out more elaborated exercises like pairwise and matrix ranking.



In this example elderly women, young girls and young men rank different wild plants regarding their usefulness.



■ Simple ranking between alternatives

Whenever the aim is to discuss how people set priorities in a simple and rapid way, alternatives are made visual through symbols, pictures, words, or the objects themselves can be laid out as representations and are then ranked by assigning numbers, stones, seeds or whatever other available material people feel comfortable with.

■ Pairwise ranking

Pairwise ranking can be a useful tool, when it is of importance, to elicit, discuss and explore the criteria for decision-making. Items of interest (trees, food, seeds, problems, solutions, etc.) are compared one by one, by asking informants which they prefer and why. Once the comparison is completed, a whole set of explanations and reasons will have emerged, making explicit the different criteria which underlie preferences and decision-making processes.

■ Matrix ranking

Matrix ranking orders items according to their criteria using numbers, seeds, stones or the like for scoring values. This can provide a more differentiated picture of the different choices and the advantages or disadvantages related to them.

»When the snakes slither
towards the tops of trees
when the winds blow westwards
when the storks in the sky fly in pairs
then the rivers will overflow
and the dams will break.«
SAYING FROM RAJASTHAN

Rainfall Pattern exercise

Timelines are used to discuss and understand historical developments or trends as well as coping strategies over time. Timelines are of particular importance to farmers since much of their rationality is based on their past experiences and a long-term perspective for the future.

The rainfall pattern exercise is based on the experience, that farmers in Rajasthan monitor rainfall very carefully in terms of timing, quantity and intensity. Each month of the cropping season is marked on the ground using local names. A long or short stick, representing the quantity of the first rainfall, is placed on a respective month. The second rainfall is then compared to the first, regarding its quantity, and also translated into the length of a stick. This procedure is continued until all rainfall events of one or more seasons have been documented and compared.



The rainfall pattern exercise allows for a better understanding of farmers' coping strategies related to unpredictable rainfall. It enables a discussion about their strategies, about means to complement and improve them through participatory technology development. The visualization of the rainfall patterns of different seasons and the performance of crops provides a platform for complex discussions and dialogue.



»Nothing entitles us to regard any one system of classification, say, the zoological system or totemism or the cosmographic system or the occupational system (castes), as prior to the others.«
VAN GENNEP

Classification Exercise

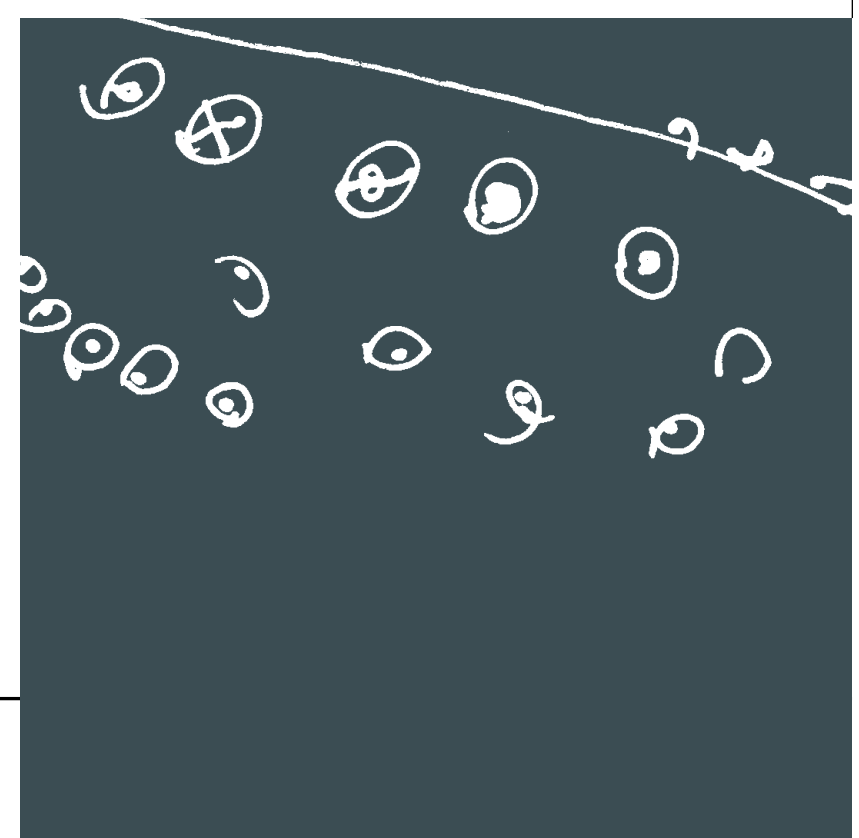
The classification exercise is a tool to understand the ways people group a variety of items, revealing people's criteria and principles of classification. People from different cultures have their own classification system of plants, soils, food items, seeds, etc. which is difficult for outsiders to realize without such an exercise. A dialogue about such different classifications is an important step toward understanding each other. The classification of millet heads and the criteria used for classification initiated an intense discussion with pearl millet breeders of ICRISAT, who usually classify millet heads differently using other criteria.



This millet head classification exercise is made up of two phases. The first phase involves understanding people's criteria and principles of classification. A collection of items, such as millet heads, is presented to a group of women for classification. They are asked to group the items in such a way that they feel the items belong together. This process leads to an intensive discussion about the criteria used to determine the classes and differentiate between them.



In the second phase the process turns into a conversation. Specific questions are raised and answers are discussed in order to understand how people use items to solve specific problems they face. By carrying out this exercise, implicit knowledge of villagers is made explicit, an exchange of ideas is promoted and a basis for the sharing of knowledge is developed.



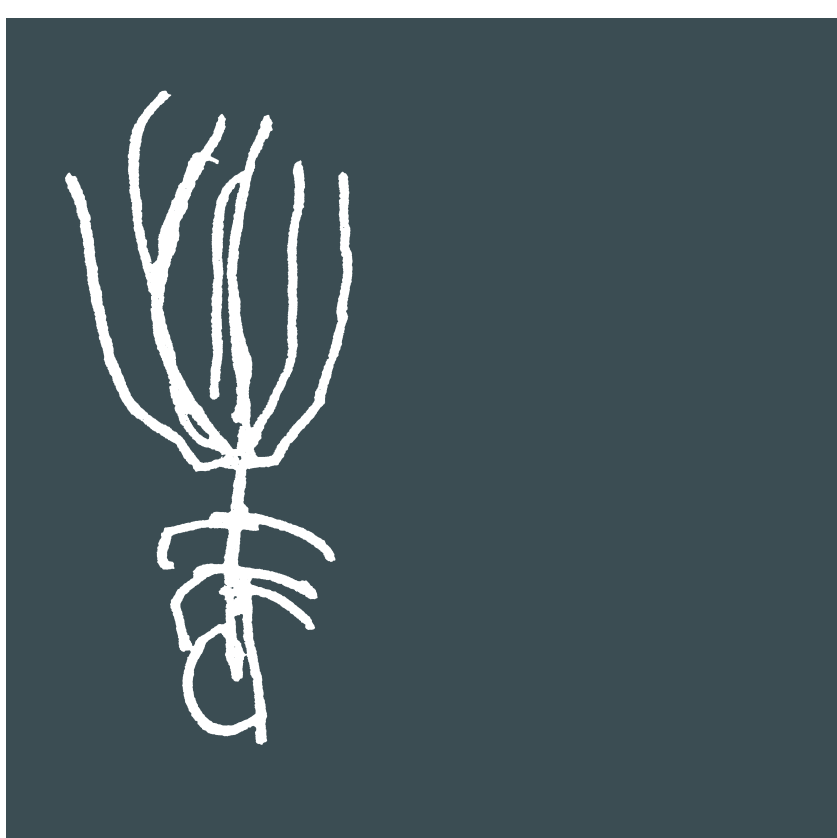
»The knowing process is a constant interplay between a changing world and a changing knower.«
PLOTKIN

Panicle Selection exercise

It became clear during work in Rajasthan, that farmers carefully select panicles for seed use. In interviews, however, they could not easily explain what kind of panicles are appropriate as seeds. Based on this experience a collection of approximately 100 widely differing pearl millet panicles was prepared. The panicles represented: panicles of local materials, panicles of modern varieties with different features and panicles of germplasm that farmers may not be familiar with. Farmers were asked to select panicles from this collection for seed use. Once the preferred panicles were identified, the farmers were asked to explain the traits they look for when they select specific panicles. This exercise is useful to understand how farmers select different types of pearl millet panicles as well as the traits they associate with certain panicles.



The simulation revealed that farmers' preferences were not general but very specific, depending on different conditions and that these preferences could vary greatly between different farmers from the same village. Farmers with sandy soil and low fertility conditions selected mainly land race material whereas farmers with good soils and fertility conditions preferred hybrid materials.



»Our fingers are all different, therefore our hand is strong to grasp something. Imagine if all fingers were the be same, our hand would be very weak. So mixing different varieties and different plants makes our agriculture strong.«
FARMER IN RAJASTHAN

Seed Mixture simulation

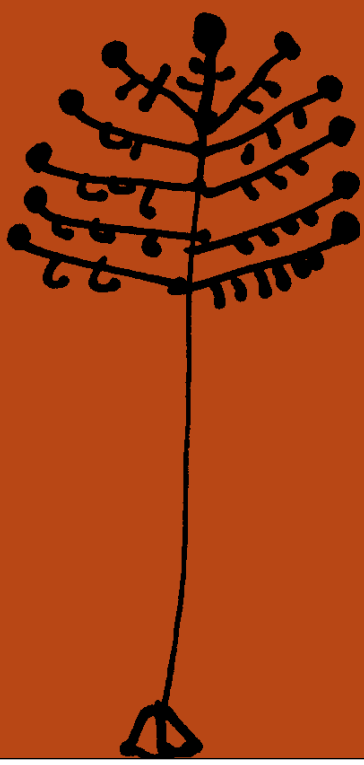
Seed mixture simulation is a communication tool, developed to help understand the very elaborated seed mixture strategies of farmers in western Rajasthan.

Women in western Rajasthan are experts in agricultural activities such as seed selection and the preparation of seed mixtures for sowing. Interactions with them provided evidence that explaining such implicit knowledge of everyday activities was unfamiliar and therefore difficult for them.

Traditional knowledge, learned through observation of parents' practice and repeated own practice, is seldom verbalized in everyday life. A simulation of seed mixing allowed old women to explain their highly elaborate seed mixture strategies. Scientists were able to understand and start a dialogue about ways of supporting an agricultural production system based on seed mixtures.



The interviewers prepared a collection of seeds from different crops sown in this area. The farmers are asked to identify, select and separate the crops they are cultivating as mixed or sole crops. They are then asked to prepare small quantities of seed mixtures that represent their actual-crops in different fields, different years and under varying conditions such as different soils, rainfall and crop rotation.





fusion of horizons

Communication methods for participatory research

Dialogue, initiated with the help of the communication tools, revealed that farmers and scientists favor different strategies for improving agriculture in Western Rajasthan.

Farmers in Rajasthan perceive the diversity of natural conditions, plant species and varieties primarily as a potential for coping with the risk and uncertainty in agricultural production.

Pearl millet is just one part of a complex agricultural practice which includes the use of around a dozen crops, many more wild plants and a wide range of varieties by families and communities. A social reason for favoring diversity is, that families and castes differ strongly in terms of agricultural performance, availability of money, land resources, quality of land and quantity and species of animals they own. A careful selection of seeds and an extensive exchange of selected seeds generates and provides the broad varietal options needed in such a strategy.

During scientist-farmer interactions past research strategies were critically reflected and areas for future collaboration were identified. Instead of focusing on the improvement of a single element of a complex system, like the development of new varieties for dissemination to farmers, future collaborations could jointly develop methodologies, technologies and varieties that widen the options of farming communities. Such participatory technology development can not be guided by the idea of extracting farmers knowledge from its context so that it matches categories of information determined by the needs of scientists. Continuous effort toward reaching a better understanding of each others knowledge and strategies is the backbone of a fruitful farmer-scientist collaboration. For such a fusion of horizons, communication tools like the ones presented here, play a crucial role.

»Changes ... will come only as we change our methods, our own behaviors and our own attitudes toward science...«

NADER

Summary and Challenges



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