

Indigenous Knowledge and Peoples (IKAP) Network on Capacity Building in MMSEA¹

Training-of-IKAP-Trainers The MMSEA Trainer Pool



IK Methods

1. Towards the Facilitation of Sustainable Processes
2. The Uses of IK
3. Favourable Conditions for the Application of IK-Tools
4. The IK-Tools and their Detailed Description
5. Rules, Tips, and Ethics

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Chiang Mai, May 2004

¹ Mainland Montane South East Asia includes the mountainous areas of ethnic minorities in Vietnam, Cambodia, Lao PDR, Thailand, Burma and the provinces of Yunnan, Sichuan and Guizhou in the PR China.

1. TOWARDS THE FACILITATION OF SUSTAINABLE PROCESSES

The technological expansion of modern scientific knowledge has no doubt brought to the world significant improvements. At the same time, the practical consequences of accelerated technological changes are visible in the deep ecological crisis faced by the planet which is affecting local communities. This alarming situation is partially due to top-down methods in which the expansion of modern scientific knowledge has taken place, reducing the confidence and reliance of rural peoples in their knowledge for making decisions over the use of their local resources.

The awareness of this crisis is a felt need among environmental politicians, development agents, scientists, ecological activists and social movements of indigenous peoples for reorienting the conventional development paradigm towards sustainability (Toledo, 2000). That means that we should rethink, among other issues, how to reestablish the role of rural people's knowledge as a main source of solutions for their productive systems within ecologically sound mental and action frames.

The last two decades of the twentieth century witnessed a growing acknowledgment that indigenous knowledge together with the scientific knowledge of outsiders can jointly develop ways to reestablish harmony in the production of food, while ensuring the conservation and local control of natural and cultural resources. Particularly in the last decade there has been growing support for local practices based on knowledge about agro-biodiversity and recognition of this complex system as a relevant source that can contribute to the enhancement of local cultures as a basis for biological diversity conservation (Escobar, 1995).

These new insights imply a personal shift in the values of scientists or outsiders. They are assessing their own personal ethic as well as their theoretical principles, scientific concepts, and research and action methods in a critical and constructive way. The IK approach is one of the experiences understood as a learning process vis-à-vis the local versus modern forms of knowledge about biodiversity conservation. It provides the scientists, or outsiders, the opportunity to reorient their skills in order to play a new and creative and role in the generation of knowledge for sustainability.

IK methods address principally the issue of participation claimed by indigenous people: they want to be heard and considered as subjects in the process of decision-making. If we translate this political demand to our field of action, it means that we as outsiders assume the role of facilitators of a process of interaction with indigenous people in which they are the main actors in the expression of IK, the identification of promising ideas of experimentation, and the last word to decide about the necessary activities to keep the ideas alive over the long-term.

FACILITATION:

Refers to organization of favourable conditions for a productive dialogue between different forms of knowledge with the goal of arriving at a common understanding of ideas that will help villagers to make free decisions about the local resources without losing control of them ...

SUSTAINABILITY:

or sustainable development, extends out of the growing awareness about environmental problems affecting the planet: population, food security, loss of species and genetic resources, energy, industry and human settlements.

It contains two key concepts: needs, especially those of poor people and limitations of technologies and organizations regarding the capacity of the environment to satisfy present and future needs. It has to do with both reshaping human needs according to a growing consciousness of environmental capacities and creatively meeting these needs while reviving and enriching the environment and its capacities.

In the context of IK we use this concept as a vision towards sustaining human life now and for the future generations (Mitchell, 1997).

ENDOGENOUS DEVELOPMENT aims at a sustainable development process with local indigenous criteria and rationale, a development not planned from outside but within the cultural logic of the local culture and society based on the existing and potential resources of the natural landscape.

2. THE USES OF THE IK-APPROACH

The IK-approach facilitates the generation of local innovations. It has a wide field of applications besides agronomic research. It develops new technologies jointly with farmers, and as a discovery process it can be used in any technological field in both rural and urban development.

The basic condition of the IK-Approach is reliance on the capacities of local people: they are experimenters by nature and possess creative skills to generate innovations (with or without external advice). This approach is not meant to support the expert's knowledge alone or to give orders or instructions to the farmers about how to conduct their farms. That is the "transfer of technology" approach, a top down paradigm that we want to replace with enhancement of IK.

The IK-approach focuses on the:

IDENTIFICATION, ACKNOWLEDGMENT AND RECOVERY OF INDIGENOUS KNOWLEDGE TO IMPROVE LOCAL LIVELIHOODS AND TO ENHANCE BIODIVERSITY

Improvement of local livelihoods as part of Endogenous Development means generating innovations which:

- are based on indigenous knowledge, ideas and practices
- recover and improve the quality of life in the countryside
- have gender balance or especially benefit rural women and children
- avoid pollution-producing farming techniques
- provide healthy products and food security for subsistence, exchange and market, giving also benefits to the urban consumers
- reinforce indigenous culture and local identity
- support existing social organization and cohesion
- are sustainable by creating an innovation capacity of local people

We see these criteria as going hand in hand with the enhancement of biodiversity by

- reinforcing diversity of seeds
- recovering old seeds
- strengthening the amount of different wild species

- creating multi-cropping instead of monocultures
- stabilizing and diversifying ecosystems (especially agro-ecosystems)

This focus characterizes our field manual. It is addressed towards technology experimentation by indigenous people in SE-Asia. Therefore we provide here a set of tools which we have selected for this purpose. They are not new. They may overlap with the tools of PRA or other participatory processes, except that PRA tools are applied to develop a situation analysis and to plan development work with local villagers. With the perspective on indigenous knowledge and biodiversity in mind, you have to adapt this approach in your own working context. Individually or as a set, the tools are not a blueprint, they have to be adapted to the local context.

3. FAVOURABLE CONDITIONS FOR THE APPLICATION OF IK-TOOLS

In a participatory process our role as outsiders is to create a favourable setting in which the expression, representation and exchange of knowledge can take place. For that purpose the following tools are useful if applied properly. Proper application requires clear understanding of the characteristics, potentials and limitations of the tools. The IK tools are applied using the following procedure in the subsequent format.

PROCEDURE

Normally the facilitator arranges an agreement with the community leaders about the procedure and then applies the tools working with individuals from the community according to the participatory process. Often we deal with an indigenous specialist, knowledgeable person or community leader, either man or women, and with this person we will discuss one specific topic using visualization tools to help the person to express him or herself. The application of each tool requires the following process, as extended from an ethical basis:

1. Warm-up or introduction

The facilitator introduces himself and the individuals working with him, the purpose of visit, and the interest for dialogue on the topic.

2. Explanation of the purpose of the tool

The facilitator explains the expected outcome, showing respect towards the resource person's knowledge. Both agree on a time framework and purpose.

3. Visualization of IK and application of the tool by the farmers

Each tool has its own logic, but the basic purpose of all tools is to stimulate the expression of the resource person. This requires using open questions like how, where, who, when, and what and recognizing feedback like how did you achieve these skills, when did you learn, how did you obtain this seed, and so forth.

All tools are based on visualization. Let the person draw, graph, and sketch their ideas by her or himself. Don't contribute too much direction in the drawing as you may influence its expression, form, and content.

It is important for the facilitator to form his or her own opinion on a subject by reading beforehand about the area or the topic, by discussing with local people, and by observing prior to and during the application. For local people many things appear to be normal or natural, while the outsider's eyes may see something strange or new which could evolve into an experimentation or innovation or provide a better description than provided by the indigenous knowledge.

4. Dialogue

While the tool is evolving step by step, you continue asking questions about the topic and memorize carefully some significant expressions of the resource person or specialist. Not all expressions get visualized, but they may powerfully summarize a situation or historic moment. Therefore engagement in dialogue and mutual reflection is a major objective of the IK-approach. The tool just provides a medium as a means to develop dialogue and to help to understand a situation or topic.

Be aware to not put answers into the mouth of your partner by asking suggestive questions, because it may be misleading or lend priority to secondary issues.

5. Presentation of result by the farmers

Once finished with the tool, the farmer will present the result to members of the community or neighbours to create a common understanding of the situation or topic and to clarify some of the local concepts.

6. Reflection and conclusions

When the previous steps are finished, then summarize briefly the outcome and ask for comments and conclusions with regard to the topic and the tool's application. Register carefully the conclusions and comments, like harvesting fruit after a long growing season.

THE ART OF THE QUESTION

Formulating questions is an art if you want to achieve a dialogue and mutual understanding with your interview partner or resource person.

Questions which contribute to dialogue	Hindering questions
<ul style="list-style-type: none"> • Ask open questions, which stimulate the resource persons to explain and display their knowledge. Open questions start with what, how, which, where, when and elicit new information. • Respect the ideas and values of the resource person, so that he or she feels enhanced and recognized. • Acknowledge the ideas of the other person and give positive feedback on what you have understood. • Use the local language or express yourself in clear terms, so that you can clarify the topic you are asking about. • Ask for the local terms (in the local language and dialect) and their meaning, as they contain the details of indigenous knowledge. • Ask for clarification of the answers, so that more details and clear description result in the visualized tools. 	<ul style="list-style-type: none"> • Closed questions, as they lead to answers like yes or no, block dialogue. Insult the resource person by presupposing the answers in the questions • Make negative judgments that destroy partnership. • Relate to confidential aspects of the resource person which she or he is unwilling to talk about (conflicts, family problems, private things...) • Ask suggestive or guiding questions which already include an answer as they may narrow down the range of responses and possibilities

FORMAT

1. Graphic (on big white paper). The following information needs to be written on the sheet accompanying the graphic:

- Title - content
- Name of place
- Date
- Name of resource person(s), age(s), and gender

2. Notes (in your field book)

- Observations of the interaction process
- Conclusions of the interview partner
- Key words of topics and ideas emerging from dialogue and reflection
- Feelings of the interview partner about the process of the tool
- Conclusions of the interview team members
- Time duration (beginning and end)

The IK-Tools

- A. TRANSECT WALK AND DIAGRAM**
- B. HISTORIC DIAGRAM**
- C. LAND USE MAPS AND SOCIAL MAPS**
- D. SEASONAL CALENDAR AND DAILY CYCLE**
- E. MATRIX OF CROPS, FRUITS, OR TREES**
- F. DIAGRAMS**
- G. DRAWINGS**
- H. ETHNO-TAXONOMY**
- I. BIOGRAPHY OF LOCAL KNOWLEDGE SPECIALIST**
- J. INTERVIEW OF FARMER SPECIALISTS**
- K. MEMORY BANKING**
- L. TRIAD OF SEEDS (PREFERENCES)**
- M. VISION OF THE FUTURE**
- N. MINDMAP**

A. TRANSECT WALK AND DIAGRAM

The transect walk and diagram is a tool dealing with both indigenous categories of space and the local conception of time. It requires skilful allocation of a great facilitation effort on your part and many hours of the time of the local people to draw on paper so that their knowledge is represented in the chart.

The transect walk and drawing is a two-step process:

First a transect walk between two distant points on the village land (from the upper part of forests to the lower part of paddy fields traversing all different production zones). During the walk guided by one or two villagers, we observe the land use, discuss its potentials, and register in our notebook or keep in our mind interesting topics.

Second, using the guides we draw the transect and divide the profile of the landscape into different agro-ecological zones (nature reserve, collective or private forest, village area and home gardens, upland agriculture, paddy fields, etc.). In a matrix below the drawing, the resource persons fill in their knowledge and criteria about soils, crops and seeds, humidity or climate differences, technologies used, chemicals, gender division of labour and resource use, products for consumption or markets, and so forth. During this process of filling out the transect diagram we recall our observations during the transect walk.

Considerations:

If we have the feeling that the villagers are not cooperating well with us, it might be due to this being our first time in the village and our inability to cope with the amount of information that the villagers provide.

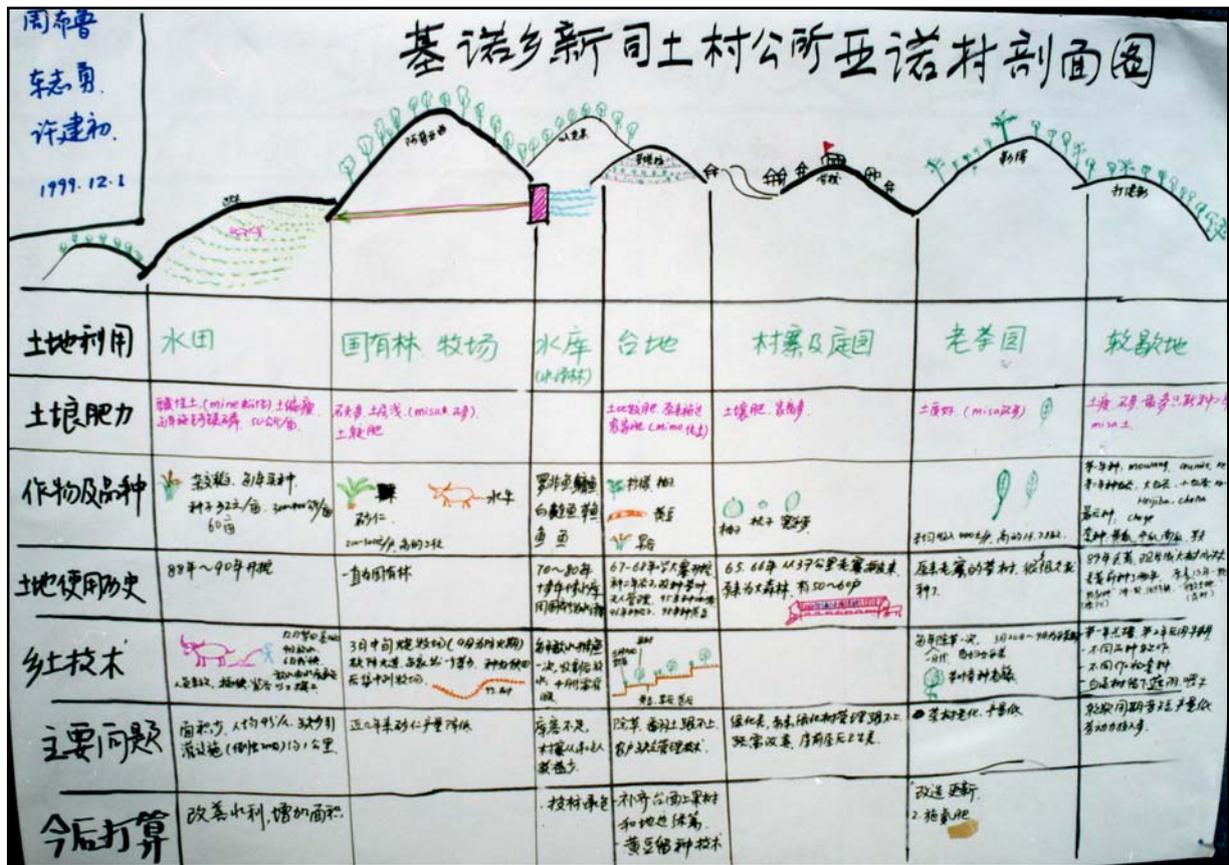
It could also be that we have not introduced ourselves and the purpose of applying the tool properly.

As a result, the villagers cannot figure out what it is for and why they are having to do all the walking and drawing. Any attempt to draw the transects by ourselves is impossible, because we have little knowledge of the village and our perceptions of it differ from shared by the villagers. Local people live there, they know about their village and their resources better than anybody else. If they perform the transect diagram, it is an authentic source of information. If we do it, the transect has no local knowledge value.

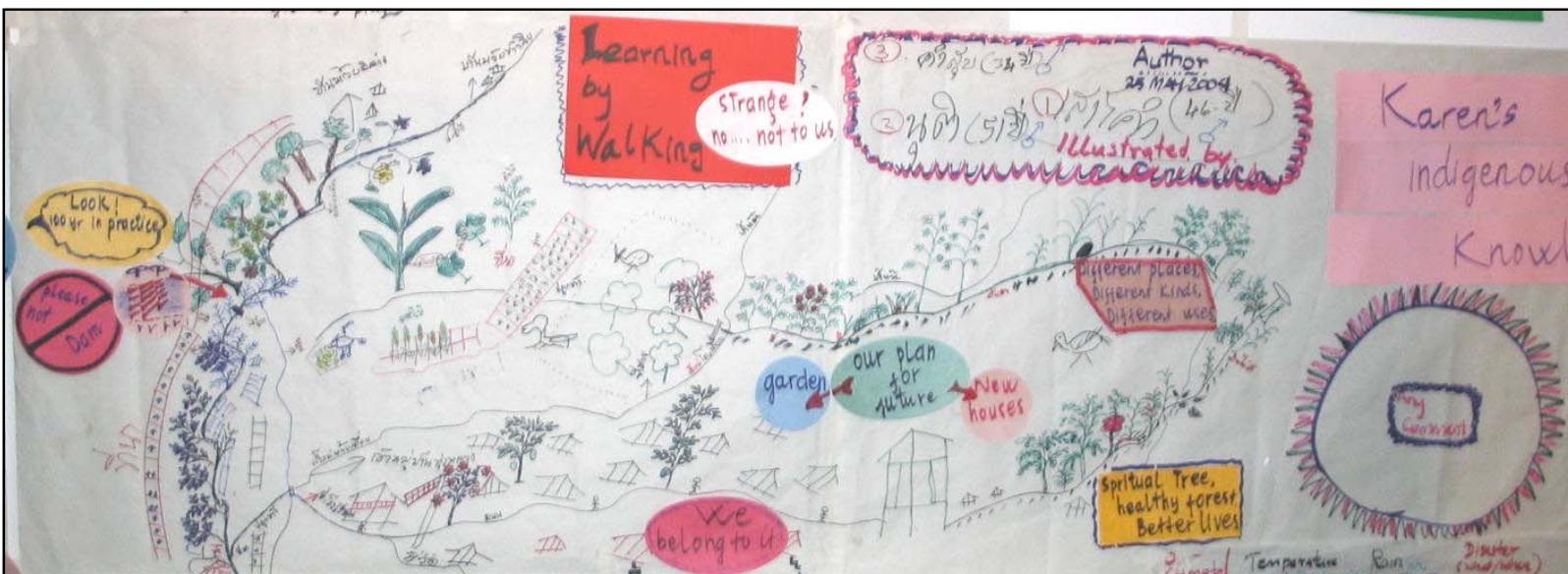
The relationship between the transect and indigenous knowledge can be reached if we create the necessary confidence in the villagers so that they present their perceptions of their environment according to their own linguistic and graphic categories.

Topics:

Ecological zones, land use and vegetation, biodiversity hot spots, sites of endangered species, altitude ranges, distribution of crops, problem areas identification, areas of greater potential, distribution of villages, property systems, forest cover, types of technology, terracing system with water distribution, areas to make experimentation, sacred mountains, trees or places, social meeting points and so on.



Yanuo, a Jinuo village in Xishuangbanna, is presented in this transect with the rich differences of different community areas and land use systems.



The transect walk through Meteiklo in Mae Wang took the group guided by the leader about 4 hours. The drawing of the village and the landscape gives an impression of the richness and diversity of crops, plants and trees in the community.

B. HISTORIC DIAGRAM

As the name already tells us, the historic diagram is a tool to learn about the conception of time in indigenous knowledge. We can approach a variety of topics with this tool: the perception of local people about important events in a village, changes in agriculture, the village organization, crops and their varieties, technological changes, introduction of chemicals, migration, the age of seeds, the history of the resources, and so forth.

The historic diagram shows the perception of historic events that the resource person can remember, including the stories heard from the elders.

Some considerations:

It is important not to force exact dates under the column of time. Leave it up to the villagers to set up their own chronology.

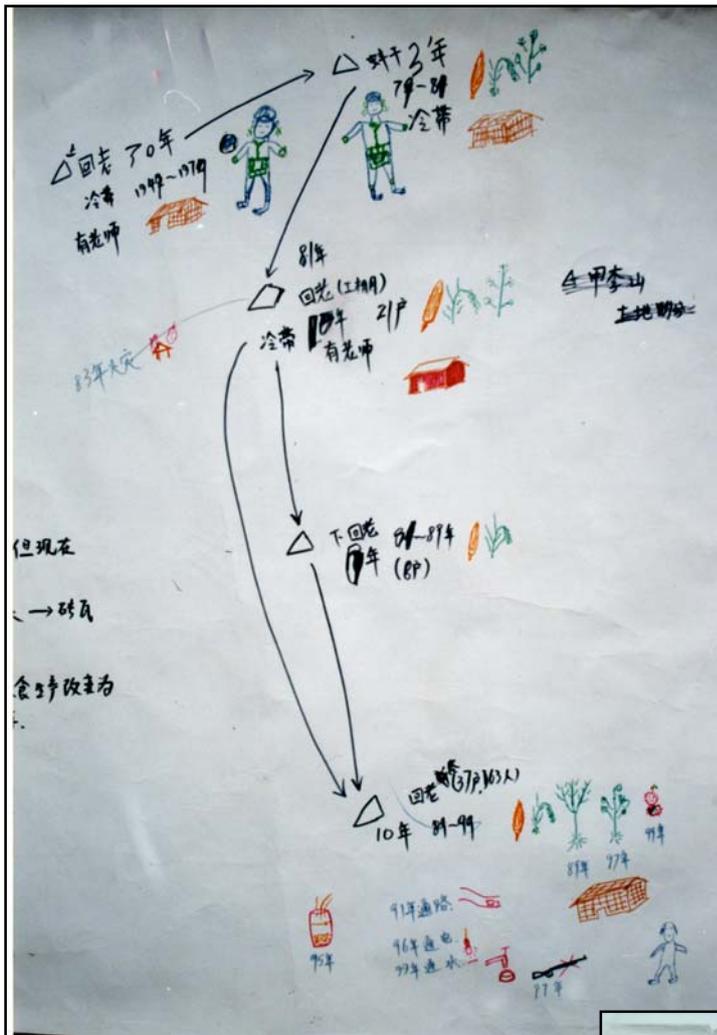
We should talk with elderly people, not just the young. Make a point to also ask women, because they have a different point of view of history and will often not come forward.

We should try to understand the relationship between indigenous knowledge and the history of external innovations by putting them in separate columns.

If there are difficulties in drawing some events (for example the Cultural Revolution), create a symbol or simply write it down.



The historical diagram of Yanuo village (Jinuo ethnic group) shows clearly the introduction of chemicals into the agricultural production as well as the reduction of crops since the 1950s. The 4 columns relate to weather changes, the diversity of crops over 3 decades, the uses of fertilisers and the innovations.



This historic diagram of the Lahu village in Huilaozhai is the account of the migrations and resettlements of the village during the last 20 years. The Lahu have been resettled from a mountainous area (now a nature reserve) down to the valley and made to adopt rice agriculture with paddy fields. The traditional hunting and gathering of the Lahu is seen as something left in their past, and they are obliged to change their livelihood into permanent agriculture.

The Karen of Metaeklo can remember their history since 345 years ago. Rotational farming has diminished, but should survive as their provider of food in the future even in 50 years time.



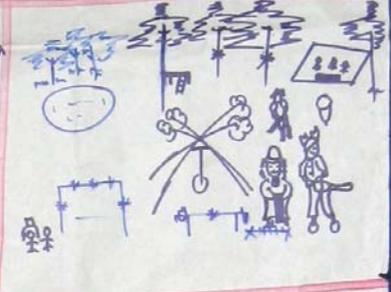


Until today the Lahu of Jejan in Chiang Dao keep their ceremonies and social unity. New artefacts are used, crops are for food and market, forests are still used as source for medicinal herbs, but Lahu culture is alive.

77
 ปักแล้ว
 Dzeu₁ La₁-cu
 Shi₁ tse₁ shi₁ ko₁



41
 ปักแล้ว
 Dzeu₁ La₁-cu
 oe₁ tse₁ ti₁ ko₁



22
 ปักแล้ว
 Dzeu₁ La₁-cu
 nyi₁ tse₁ nyi₁ ko₁



ปัจจุบั
 Nyi₁ a₁ yam₁



A' nam₁ 41
 Lam₁ cu
 A' lah
 A' lo
 A' bwan
 A' guh
 I' kul



The Akha of Philay village in Chiang Dao has a history of living on the mountains surrounded by forests and now having different land uses and resources. The village is modernising. The Akha keep their costumes and practices alive.



The Hmong of Pa Phai village in Mae Wang have changed from poppy growers to vegetable and fruit producers. Long time ago the families lived in one large house, now material has changed and the village is prospering.

C. LAND USE MAPS AND SOCIAL MAPS

These tools provide the possibility to learn about local perceptions of space. Some interesting topics that deal directly with the use of space related to the resources in the village. They show us the home garden, land use at community level (forests, shifting cultivation, economic crops, paddy fields, dryland crops), map of village specialists, the pig-raising activity, the village resources, sacred places, sacred groves, distribution of terraces and their uses, and so forth. A special map is the map of stars and the meaning of the stars for time, weather forecast and agriculture.

If we look at the housing pattern and at social criteria such as poverty, social functions, specialists, house construction, family sizes, etcetera, then we deal with a social map. If these encompass the entire area of a village, watershed or even the household level to describe the land-use systems, cropping patterns, resources availability in the community, then we are dealing with a resource map.

Some considerations:

We should be very open in defining the topic of local ways of using space, because in many cases it is linked to sacred mountains, sacred forest, sacred stones and so forth, which reveal a conception of space not only in terms of material resources but as a wider scope which includes the spiritual dimensions of the resources. This is part of the understanding of nature of local people known as “sacred local geography.” Since local people have been castigated as being superstitious for talking about the tree spirits or the worship of plants and animals, these themes require particular respect. For them the spirits are real and alive.

A bilingual villager needs to be found who can help with the names of mountains, lakes, rivers, stones, plants, and so forth in local language, and their translation. This is a way to bridge the knowledge of the older villagers with the young ones and to overcome our language barrier.

Since mapping is a complex task of shared knowledge among local people, we can give the villagers the time they require to finish without our presence and let them discuss it by themselves. We can return the next day to complete the process of reflection and conclusions.

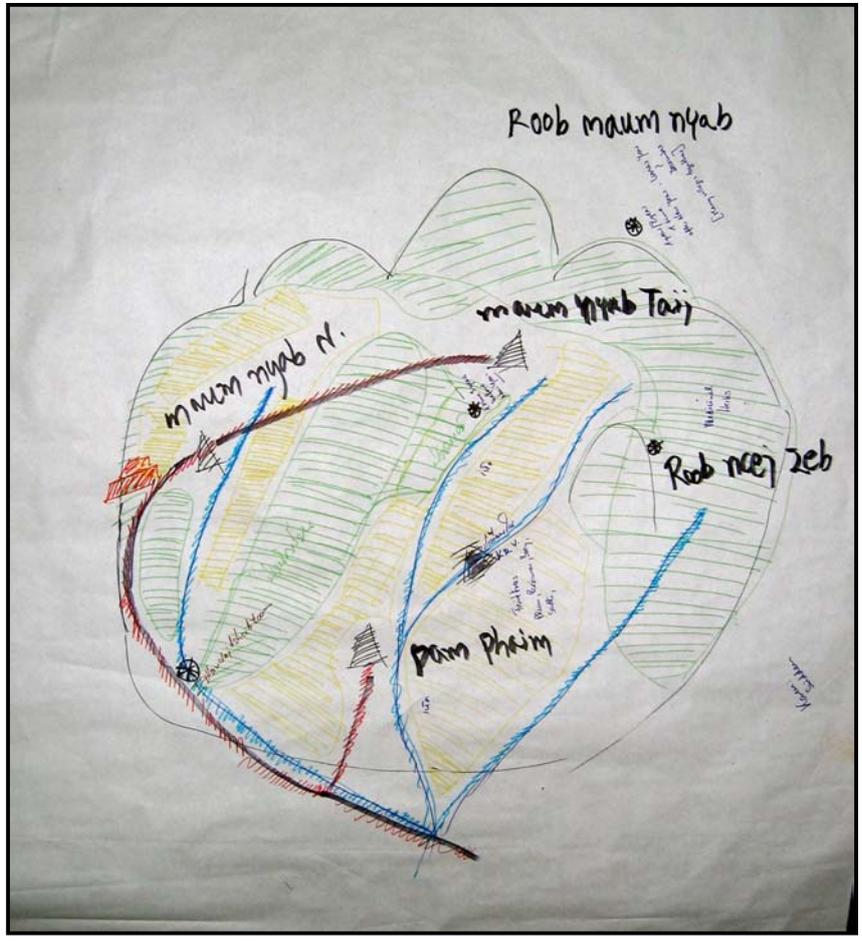


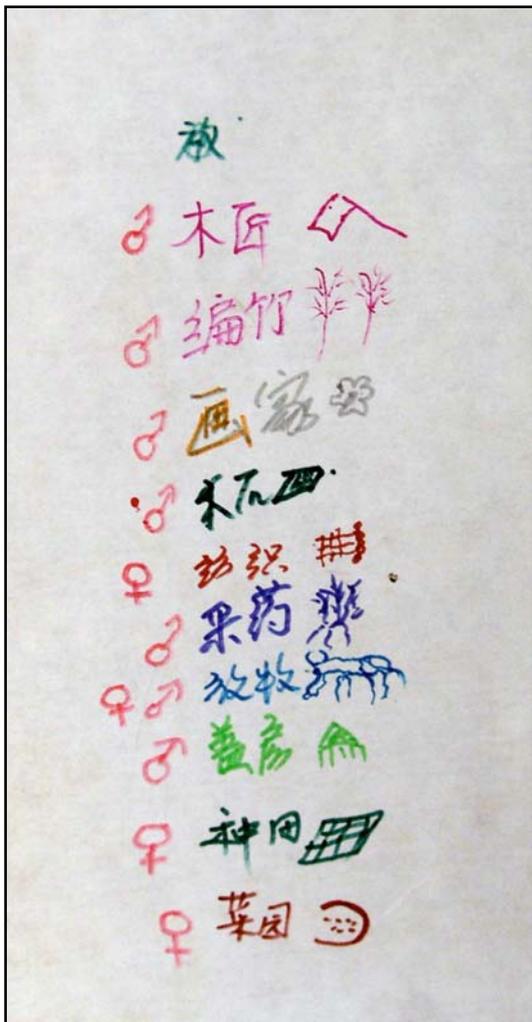
The land-use map of Yanou Village provides an excellent starting point for identifying the different land-use systems, differentiating the indigenous knowledge within each system, finding out the most knowledgeable farmers (male and female) in the village with regard to a specific system, and selecting experiments for an action plan. One map is like a whole book, but visualized and easy to understand.



The social resource map of Pinhe Village (Yao) offers many different dimensions, from entertainment to social life and available technology, a census of household members and also the spiritual and sacred forests of the village.

The land use map of the Hmong village of Pa Phai in Mae Wang, Chiang Mai, gives us an overview of forests and agricultural land. Also the spiritual and sacred places are indicated.





The social map from Jisha in NW-Yunnan gives an overview of the specialists known in this Tibetan village. By developing this IK-map it is possible to contact the best knowers in a village and reconstruct their knowledge for the community and for the local education programs towards children and adolescents.

D. SEASONAL CALENDAR AND DAILY CYCLE

The seasonal calendar and daily cycle is another tool for dealing with the perception and management of time. Depending on the combination of topics, it can yield a complex type of information. It is important to establish the period of time: one day, daily, six week, monthly, year, seasonally, seven-year cycle or any other time framework that local people express. For example: food intake during the year or a day, the cycles of the weather, daily agricultural activities or work and festivals during the year, use of forest resources during the summer, periods of time when the cattle are taken to the upper grasslands, the cycle of shifting cultivation, harvesting of different plants in the vegetable garden, or in the fruit garden, how to deal with the climatic changes during the year or in seven years, the differences of growth and labour between landraces and high yield varieties of seed, and so on.

A seasonal calendar can be presented either as a wheel or as a bar chart.

Considerations:

The process of how a seasonal calendar is constructed reveals indigenous categories of time management. The graphic results and the amount of information should be balanced as both are important indicators of Local Knowledge.

It tells us what time means to local people, whether linear, cyclical or some other conceptualization, and how they use it to achieve their purposes.

The local people determine when their time starts: the daily activities start at dawn, but the time may vary between men and women, or between different areas; the yearly calendar starts with their own New Year, or with the time of preparing the land for sowing, or with clearing a space, or with prognostics of weather and selection of seeds...

Language should not be a problem when the villagers refer to certain activities of the year using their own terms in their local languages. It is important to look for translation help on the spot and register them for further explanation. On the contrary, the use of local terminology by the villagers should be an opportunity to learn more about Indigenous Knowledge.

The daily life of this Yi Bimo (a spiritual leader and healer) provides the insight into the combination of agricultural work and his task as an intellectual and historian of his community.



纳西农事历

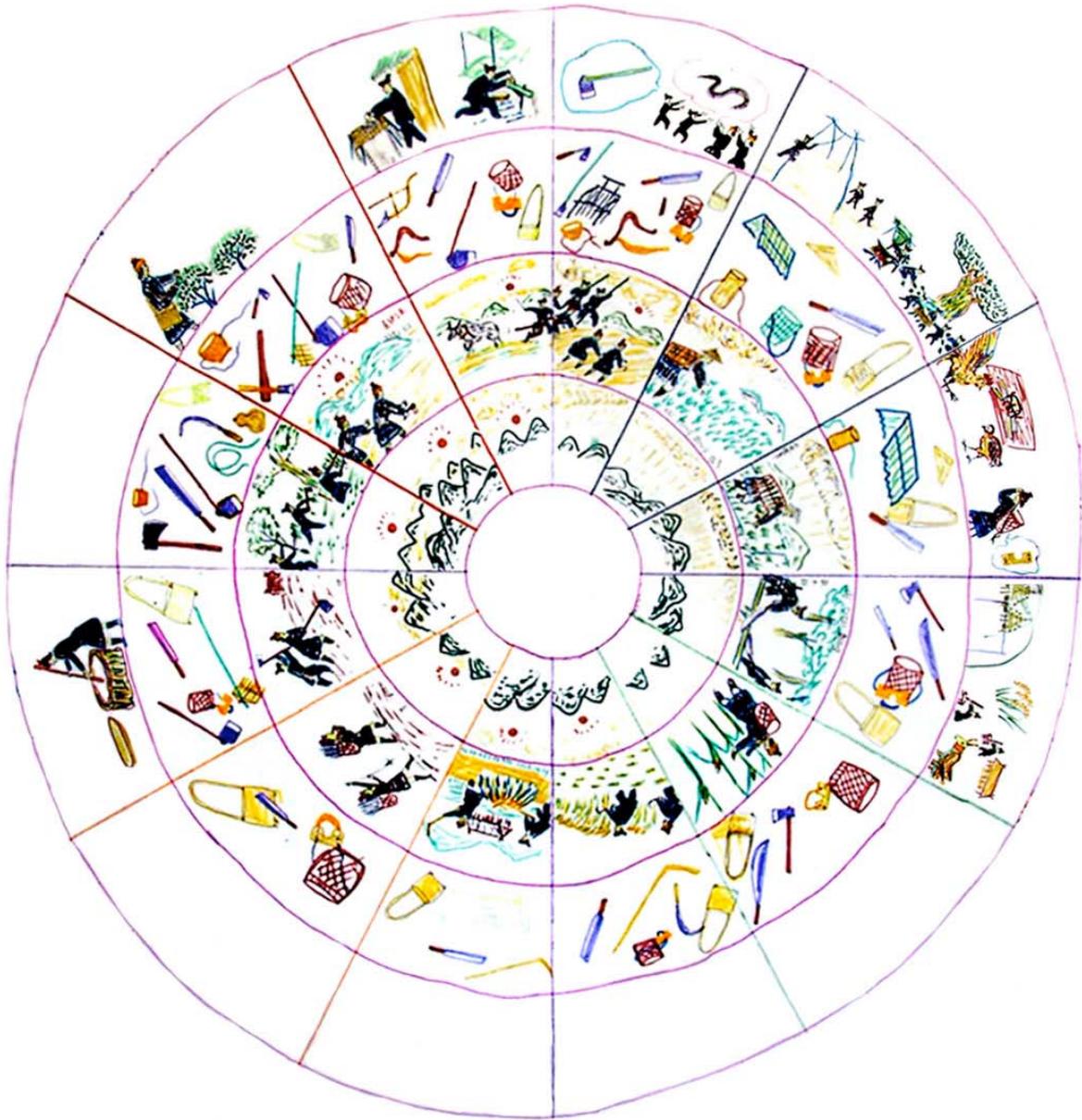


绘制: 和冬文
协助: 和秀英
和志秀

肯替古
2011.12.18

The Naxi Calendar from Daju in Lijiang is an account of the multifold activities of a Naxi family in the mountain areas. Agriculture, soil characteristics, climate, tools, forest uses, workload for men and women, even the time for travelling and involvement in exchange activities is indicated.

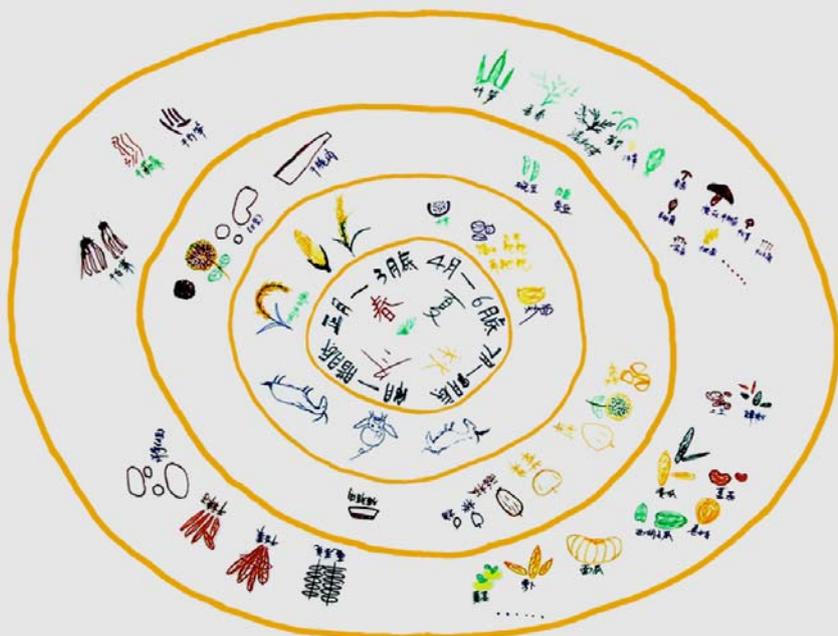
aq kaq'ssaq eq. bul jiv la jiv. bul toq la toq.



绘图：勐宋红旗村：妹兰
 题词资料：xai deel 女 协助：CBZK
 jal kai 男 曾益群
 puq lu 男 2002年3月27日

The Akha calendar from Mensong, Xishuangbanna, is the monthly description of all activities of the Akha farmers and shows the careful relation between human beings and nature, the measurement of time, the understanding of climates during the different seasons of the year, the use of a diversity of tools and the rich culture of shifting cultivation.

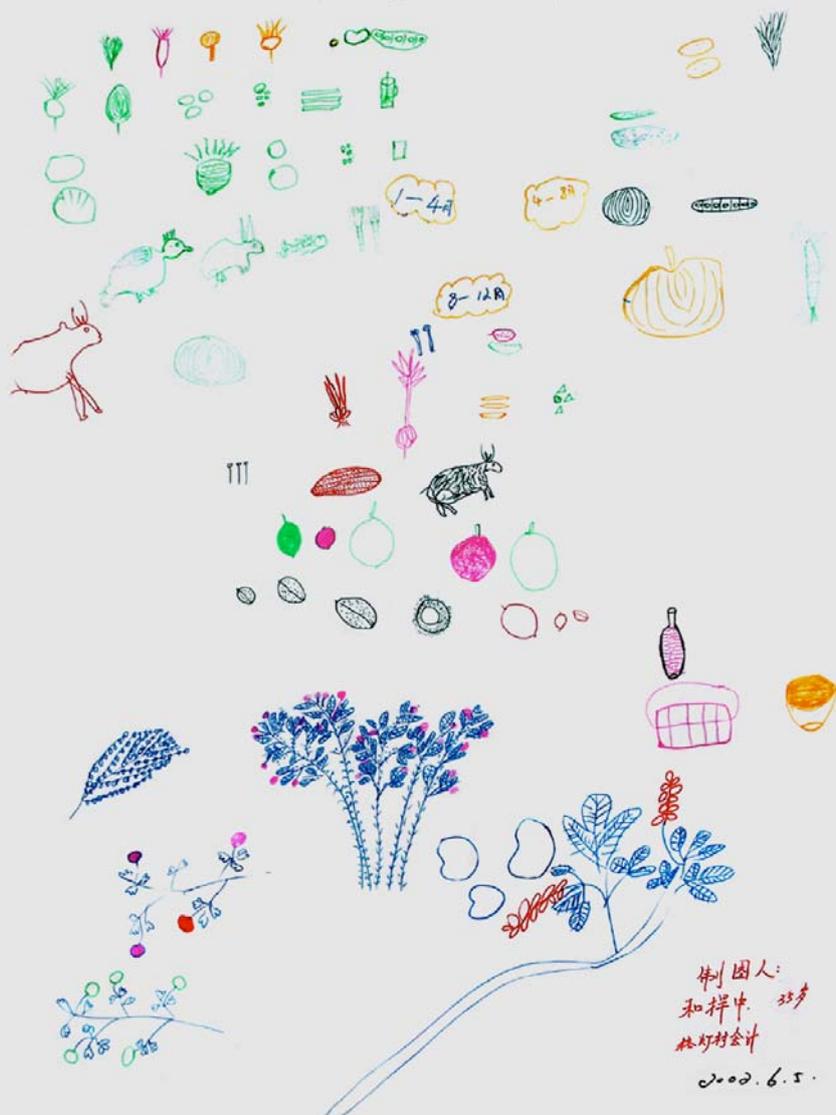
海尼小组食物日历



The food calendar of the Malimasa in Tacheng gives a chance to see not only food, but the seasonality of the resources and the tasks to obtain them. Food itself describes the culture of an ethnic group often rejected by ethnocentric views of a mainstream culture (potato culture against grains, or rice culture against mountain dwellers who have made perfection out of the use of grains – barley f.ex. in Tibetan areas of China)

Below a Tibetan food calendar from Tacheng in NW-Yunnan.

格灯食物历





The Karen Calendar from Meteiklo in Mae Wang shows the year of the rotational farming fields and introduces the different ceremonies/rituals for the protection of the harvest.

E. MATRIX OF CROPS, FRUITS, OR TREES

The matrix of crops, fruits or trees is a tool with a simple structure of two entries, a horizontal line and a vertical line. To allow the local villagers to express their preferences quantitatively, the establishment of the ideas or criteria on the vertical and horizontal lines, as well as the quantification procedure, should come from the villagers.

Local people express their preferences relating the vertical with horizontal information step by step. Possible topics include a list of crops and different types of technology, order of preference of fruits or trees, the curative value of a list of medicinal plants, the most endangered grassland varieties, the best rice landraces, the benefits of different animals and insects to the home gardener, biodiversity in the swidden fields, the most promising local experimentation and so forth.

Considerations:

The matrix is a time consuming tool in spite of the simplicity of its structure. A good result takes several hours to facilitate. Therefore we should never start a process of elaboration of a matrix if the villagers are working at other tasks. It is best to choose an appropriate moment and a topic that is relevant for them so that they have a rewarding feeling of having learned something when their matrix is done.

Indigenous knowledge is rich, complex and dynamic. Therefore we should not think that a matrix contains a complete domain of indigenous knowledge.

For example, if we select the topic medicinal plants, the matrix yields a limited number of names of the plants and some of the common or preferred local uses for healing some diseases. Such information is a starter for discussion and reflection and it provides a basis for continuing with a systematic investigation of the topic.

Sometimes the local villagers do not want to draw or write on the matrix because the use of a big sheet of paper is unfamiliar to them and they consider paper as a valuable resource. In that case we can facilitate the elaboration of the matrix by taking over the writing or drawing of their ideas. We should give attention and special care to writing exactly what they say, so that the matrix conveys indigenous criteria and preferences.

The most common errors in constructing the matrix derive from failing to understand its characteristics and undertaking it without systematically following the instructions. This can be avoided by reading or rehearsing the steps involved in the elaboration of a matrix in this or other books on participatory methods of PRA/PLA.

Report of what's learned from field
23 April
8:30 - 11:30 am

	Pine	Dipterocarpus	Cycas near big tree	Bamboo C. to. sp.	tender wild rice spp.	Shrub/lyca Mys. 6 room			
Consumption									
Income									
medicinal									
Social/Ritual (values) from community									
Women	=	7	9	✓					✓ removed, custom, cannot find
Men	=	=	+	✓					✓ difficult to find
			December	June to October	January to April	April to May	June to November		
	headache Sick	stop bleeding releasing				cleaning the wound			
	39 44 was minor from bamboo	30 was minor from bamboo	38 was minor from bamboo	38 was minor from bamboo	50 was minor from bamboo				

Matrix about Use of Plant & Wildlife.
27/5/2547

安麻老寨用材树种矩阵图

	树冠层树种	枝叶层树种	材质好树	经济价值	特殊用途/备注
杜松树	■	■	■	■	木材好, 用途广
红毛树 A. Rao tree	■	■	■	■	木材好, 用途广
平头树	■	■	■	■	木材好, 用途广
白椿	■	■	■	■	木材好, 用途广
奶茶树	■	■	■	■	木材好, 用途广
樟子木	■	■	■	■	木材好, 用途广
木料树	■	■	■	■	木材好, 用途广
牛舌树	■	■	■	■	木材好, 用途广

总结: 1. 用材树种种类较多, 用途广泛, 木材好, 用途广。
2. 希望发展经济林, 木材好, 用途广。
3.

The matrix about use of plants and wildlife reflects the different perceptions of women and men about the value of plants and animals from the forest

The matrix should not only cover preferences for the selection of a tree species for future reforestation. Looking at IK you may differentiate the gender knowledge, the use of rituals, or trees with cultural significance, etc.

F. DIAGRAMS

A diagram is a sketch, meaning an abstract and subjective representation of a topic that is shared by local people. For example, the multiple uses of trees, the importance of animal resources, the impact of external innovations, what is a local innovation, the process of local experimentation, the market exchange of local seeds, the fruit garden, the inputs and outputs in a household, the main stations of honey production, and so forth.

There are several kinds of diagrams which are named according to the instructions or rules contained in them, such as the Venn diagram, input-output diagram, spider or interaction diagram and so forth.

The diagram of the gender division of labour is done by letting men and women draw the tools and resources they use and know about. It will give a clear indication of the different gender roles with relation to biodiversity and helps to promote the knowledge of men and women in their specificity.

Considerations:

Remember that all the tools dealt with here are just aids for indigenous knowledge research. Even if you apply many tools, the research on indigenous knowledge remains incomplete. These are visualized methods to approach indigenous knowledge and learn about the perceptions, ideas, and experiences that local people have about trees (or other resources) and the multiple functions and meanings that the resources have for the community. The results elicited using the tools need to be further discussed at individual and group levels. After a thorough joint analysis we can come to preliminary conclusions that provide topics for further discussion.

Visualization plays an important role in the application of the tools, because it is the medium with which indigenous knowledge is conveyed. We should improve our skills to facilitate that process using patience, supporting the local villagers with a series of open-ended questions, and creating a mutual learning environment out of the fieldwork.

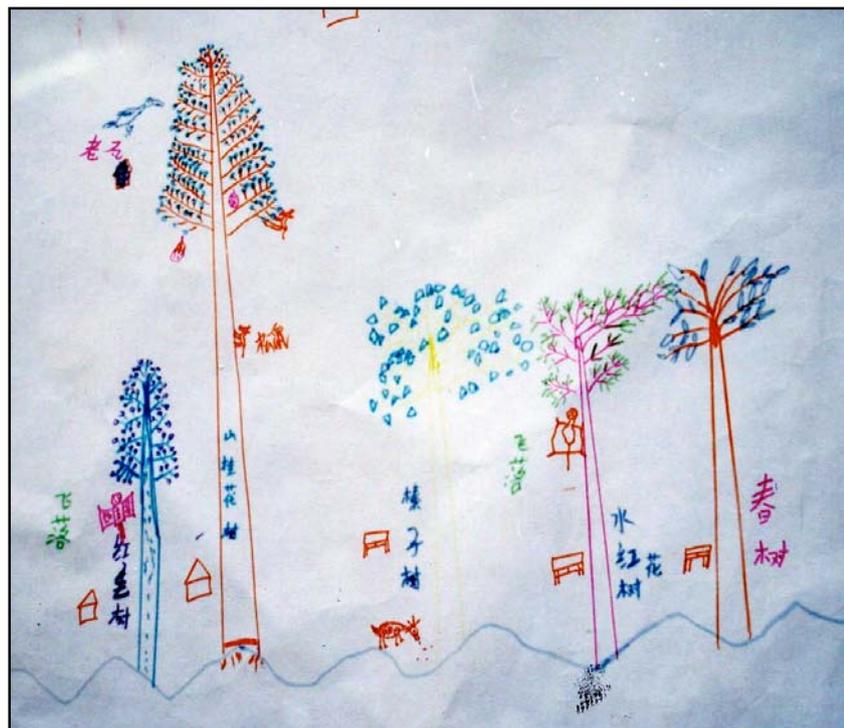


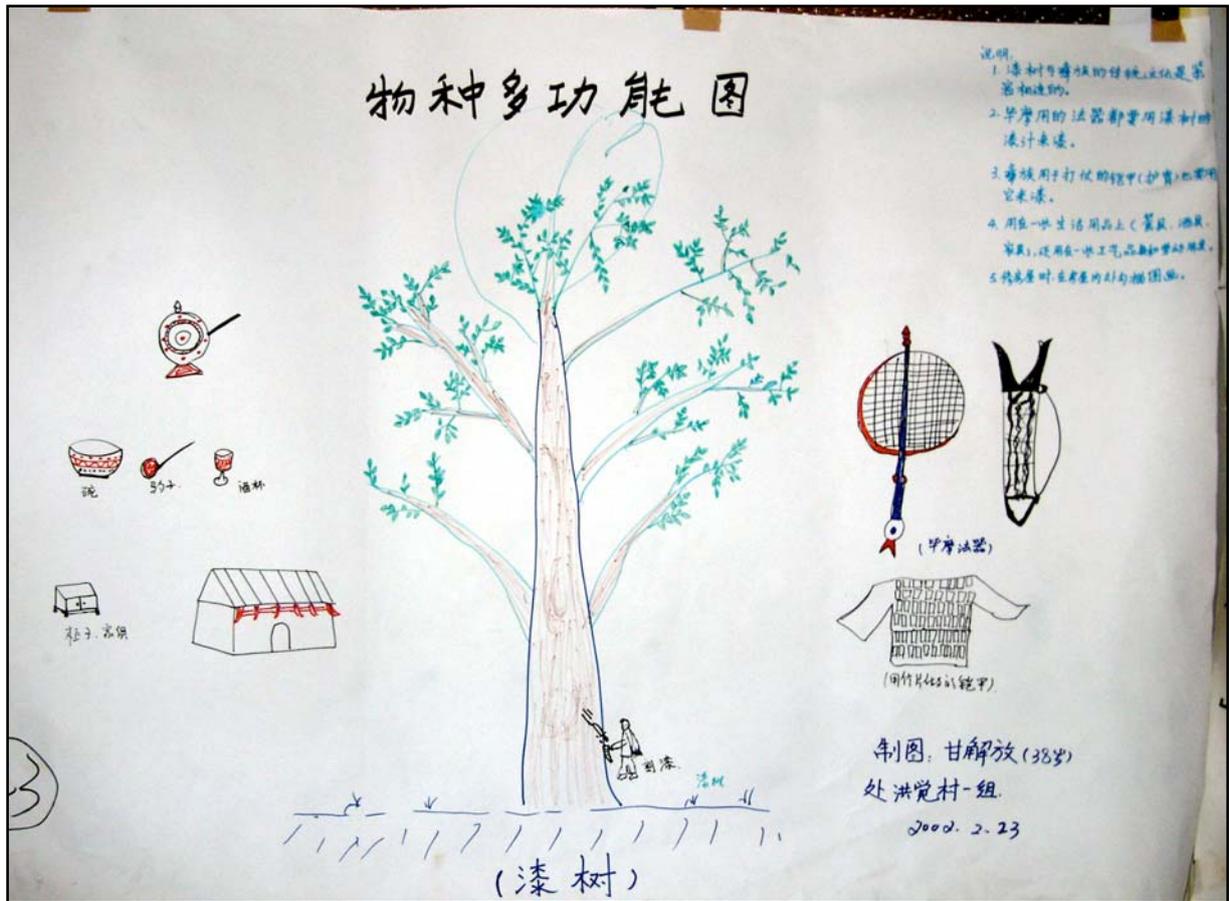
TREE DIAGRAMS

There are two types of tree diagrams. The first one describes the qualities of one tree and its possible uses. Normally we ask the villagers to select the tree species with most diverse use and importance. The second one lists three different tree species and compares their value and qualities.

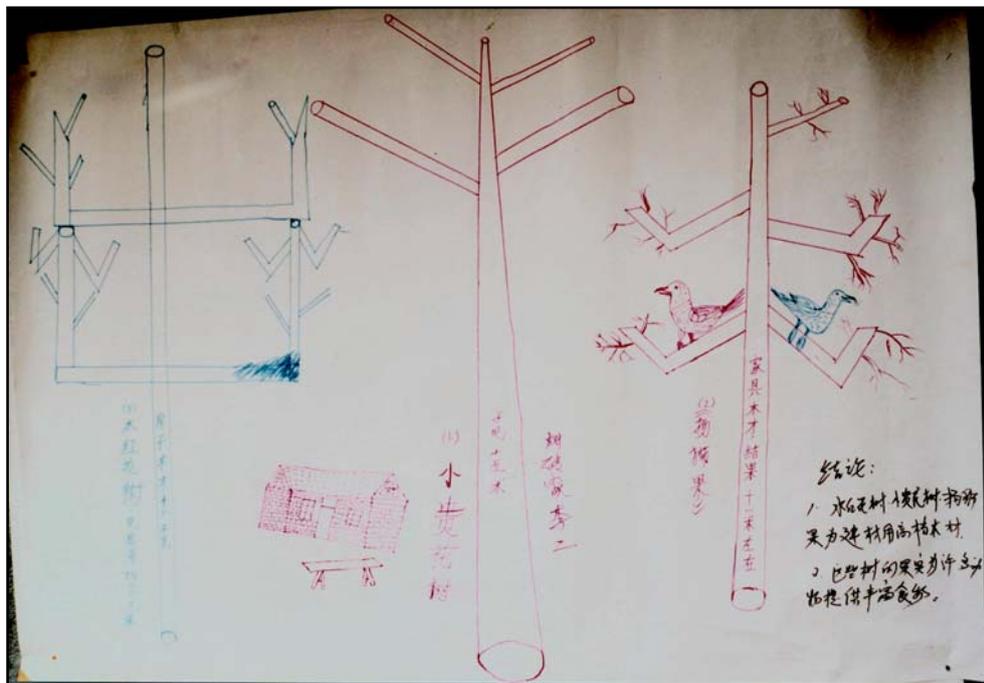
With the help of comparison of different trees, the farmers can decide using additional criteria based on their own priorities which trees they are going to plant in the future or which seeds to collect for a local village nursery.

The comparison of different trees does not show only the economic value, but also its environmental importance (host of birds or wildlife) and the spiritual value.





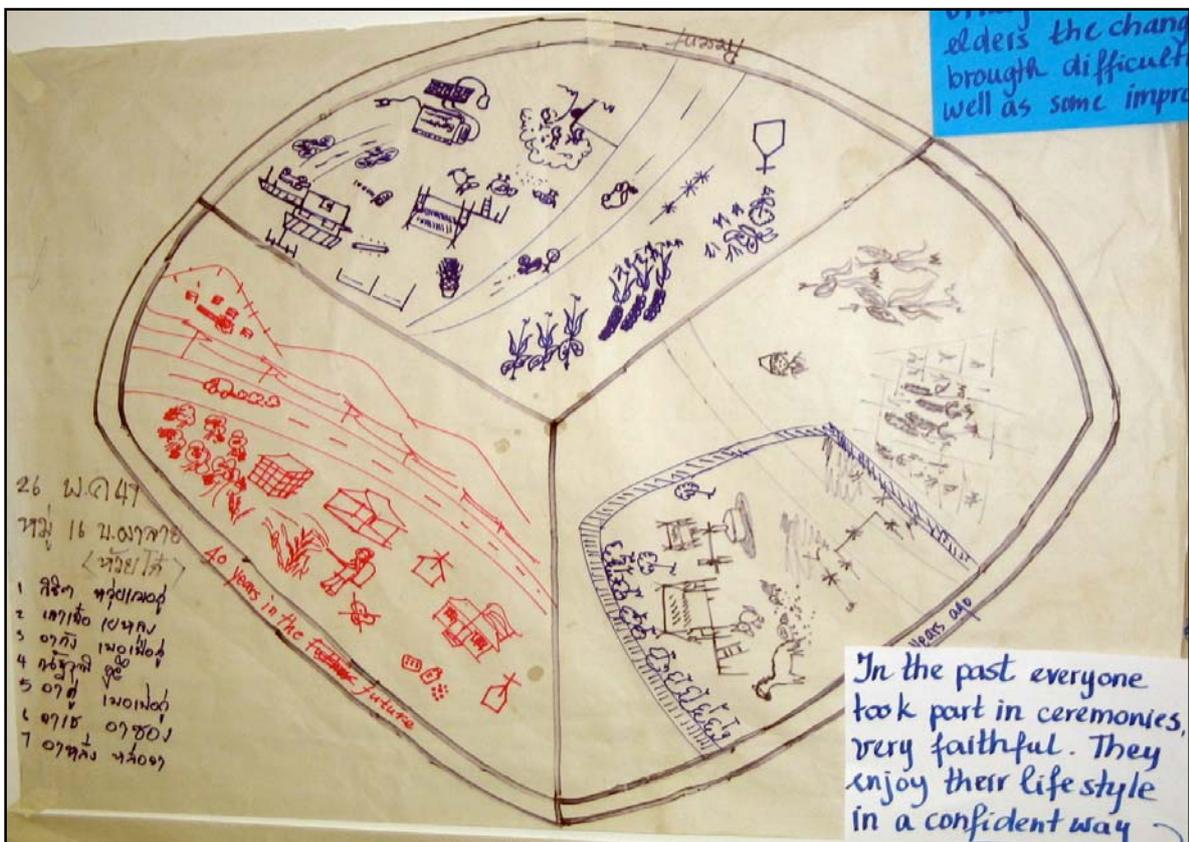
The lacquer tree is vital for Yi culture in Sichuan, China. It gives the raw material for the cups and bottles and spoons for food and drinks, and is part of the magic instruments used by the Yi intellectual and spiritual leader. Drawing from Da Liangshan in Sichuan.



Even using a ruler the Lahu representation of 3 different trees shows natural and economic qualities.



The production of handicraft is clearly separated and defined for Yi men and women. These crafts are for daily use and are embedded in Yi culture, they have meaning for the Yi society.



H. ETHNO-TAXONOMY

Ethno-taxonomy consists of a set of tools to register in a visualized form the categories with which local people classify the stars, seeds, trees, plants, flowers, animals, crops, insects, soils and so forth. There are many procedures to investigate local perceptions of specimens and plant varieties which are important for biodiversity conservation.

The ethno-taxonomy aims at the detailed description about how indigenous people classify the natural objects into their own categories. It is therefore essential to write down the local terms (with translations) and let the people organize this information according to their own structure.



The Yao women from Pinhe village, specialists in plants, are invited to display the voucher specimen collected from the homegardens on white papers. Those plants have been classified into their own categories. The criteria for classification have been identified also.

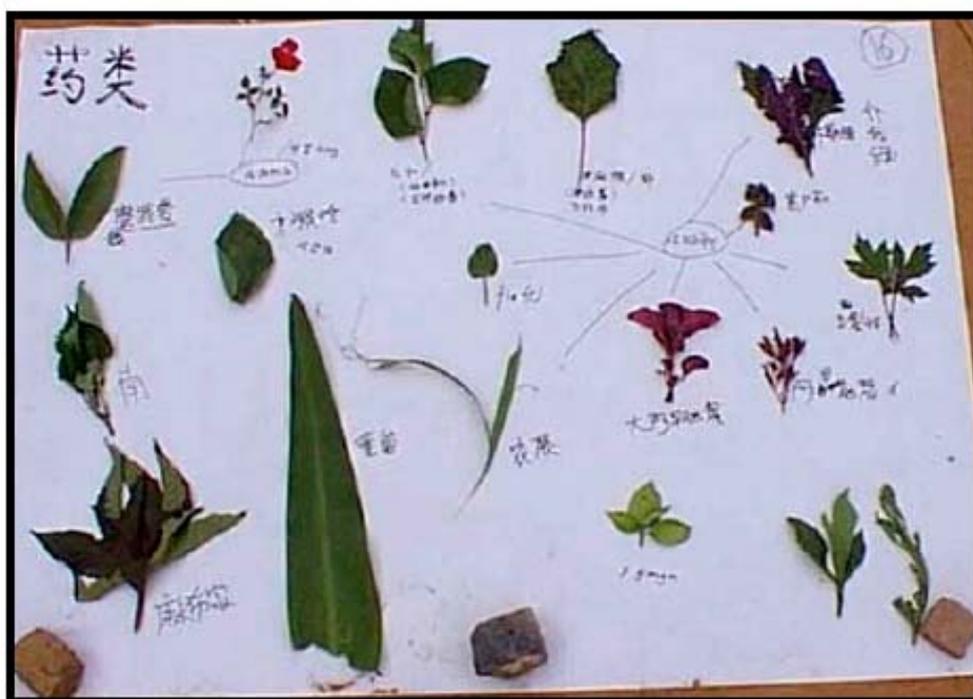




Fig. 3.32 After being invited to collect all the useful plants in the vicinity of the village, these Tibetan villagers, including women, children and old men, stand behind their display of more than 80 species that they had collected within a half hour. All local names and uses are written on the cards. Such collection provides unique opportunities for knowledge sharing, both among villagers and with outsiders. It can also be applied as rapid biodiversity assessment. This exercise can be followed by the semi-structured interview and matrix ranking.

Photo by Xu Jianchu, KIB.

I. BIOGRAPHY OF LOCAL KNOWLEDGE SPECIALIST

Biography is a tool that expands into the life history of a local specialist and how he or she has acquired, uses and transmits to younger generations a field of specialized knowledge. The structure of the biography is given by the time framework of the specialist (for example, it can be framed by statements such as "when I was young," "when I got married," "now that I am older," or by reference to particular events, though exact dates are also acceptable as desired). It is important to focus on a specialized topic of knowledge like seeds, water management, weather forecasting, pest control, soil classification, diversity of vegetation, sacred trees, livestock, grasslands, and so on. The purpose of focusing on a subject is to reach an in-depth analysis of the knowledge that a local specialist possess.



The life history of a Yi Bimo (spiritual leader and healer) from Liangshan gives an insight into the local culture, the ways of learning and the principles of the Yi history and cosmivision.

J. INTERVIEW OF FARMER SPECIALISTS

In each community, in each indigenous group living in a particular environment, there are knowledgeable persons who have acquired a detailed and vast knowledge through learning from the elders and through their own experiences and experiments. This knowledge can be related to seeds and crops, to agricultural systems, to collection and use of natural resources, to nurturing nature involving skill and spiritual practices. It can be knowledge in wildlife, plants, medicine, crops, soil fertility management, and so forth.

These specialists prefer to minimize risks rather than maximize profits; they are generalists and have knowledge in agriculture, forestry or medicine; they have holistic views and believe that everything is interrelated; their knowledge is based on their cultural beliefs and practice systems. For these reasons, local indigenous specialists are the best conservers of indigenous knowledge and the cultural aspects of knowledge systems.

The interview with a farmer specialist is in-depth, based on a series of guiding topics or questions. These questions are not handled in the manner of the question and answer format of questionnaires, but through a dialogue that follows up the different questions, develops details, and allows excursions on the way. The following eight questions, each followed up with additional queries and leading to unexpected topics and issues, allow development of an understanding of indigenous knowledge. It requires time to do it.

1. Who is the specialist, name, age, sex, civil status ... ?
2. What is his/her special field of knowledge on biodiversity conservation?
3. Where does he/she apply the knowledge?
4. When does he/she apply the knowledge?
5. How does he/she apply the knowledge?
6. Why does he/she apply the knowledge?
7. From whom did he/she learn the knowledge?
8. To whom does he/she will transmit the knowledge

This interview will be visualized into a historical diagram, a resource map and a seasonal calendar focused on the special field of knowledge.

K. MEMORY BANKING

The memory banking approach was developed by Dr. Virginia Nazarea with ethnic groups and their knowledge on sweet potatoes in the Philippines. It involves recording information from people who know and remember about land races. It is a systematic documentation of general information on seeds and landraces. The following three tools belong to this category: life history matrix, landrace technical sheet, and seeds life history.

LIFE HISTORY MATRIX

The life history matrix establishes the relationship between the life of a specialist and the history of seeds and varieties (based on Nazarea, 1997).

Guiding questions:

What kinds of crops, fruit trees or vegetables do you have on your land, in your garden?

How are the kinds you plant now different from the kinds you used to have?

How did farming or gardening change from the time of your youth to the present?

What were the sources of seeds and other inputs then and now?

How did you and your parents prepare and store your product then and now?

	Names of Varieties Grown	Description of Unique Qualities of Seed(s)	How Varieties were Cultivated (when, where, why and how)	Uses of Varieties
Childhood and youth				
Mathurity				
Old age				

SEEDS MATRIX

The seeds life history matrix consists of an interview with a person who has a garden with a great variety of plants. The interview is structured by a matrix with following items from left to right: (a) the name of varieties grown in the garden, and (b) one-by-one characteristics of the plant (for example, tasty, fragrant, easy to cook...) (based on Nazarea et al. 1997).

	Labour	Seed	Pests	Taste	Cooking	etc.
Plant A						
Plant B						
Plant C						

LANDRACE TECHNICAL SHEET

The farmer, who has grown a certain landrace over many years, is interviewed about the seed. This tool should be applied especially during the seed fairs, which gather a number of peasants who exhibit their products, crops and especially the variety of their seeds, which afterwards can be exchanged (based on Nazarea et al., 1997).

Common name:	
Botanical name:	
Seedsaver's name:	
Characteristics of seeds:	
Site (village, township, county, prefecture, province):	
When and from whom acquired and how:	
Years grown on site:	
Habitat: (soil, climate, growing season)	
Combination with other plants:	
How is it cultivated:	
Uses:	
Characteristics of products:	
Histories linked to this landrace:	
Cultural practices related to this landrace:	
Date:	Collector:

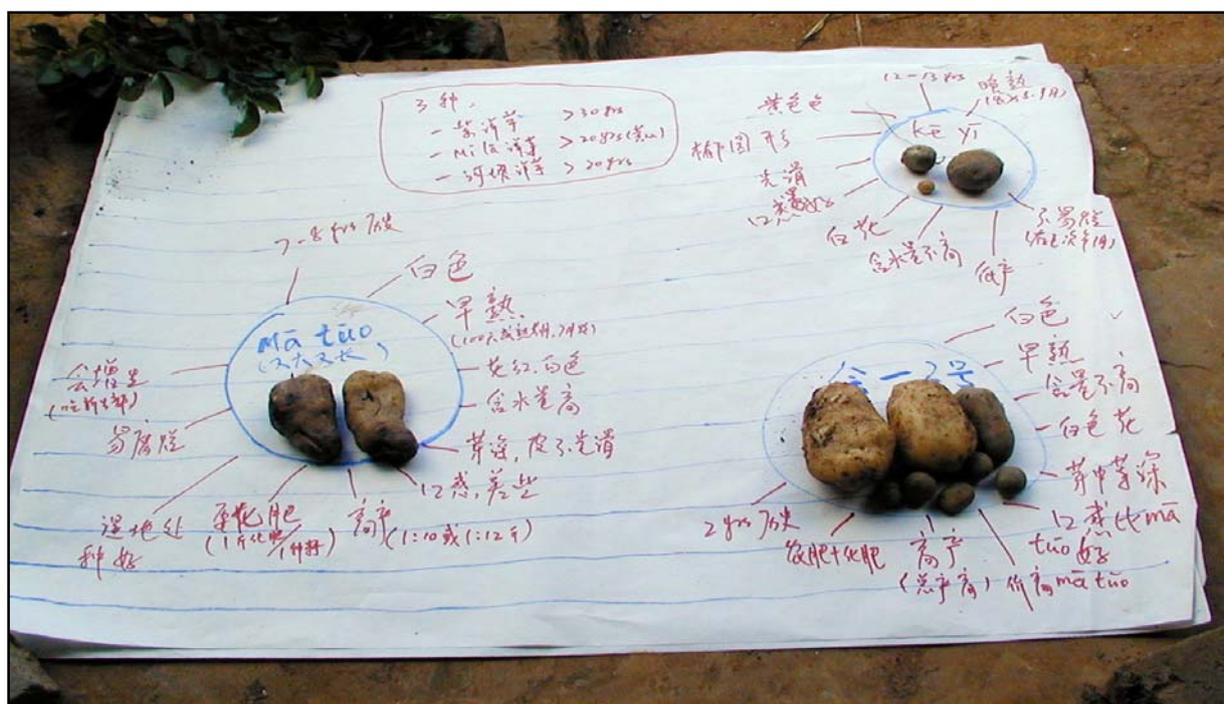
L. TRIAD OF SEEDS (PREFERENCES)

A useful tool for eliciting ethno-taxonomy is the set of triads. As indicated by its name, it is a form for examining three different plant or seed varieties of animal specimens, or soil types, or any other topic by asking the local villagers: (a) which one of the three (seeds, plants, soils, etc.) is different from the other two? (the item should be isolated); and (b) what are the differences? All the answers should be visualized from the point of view of the local villagers.

Local classification tree: this method requires at least three different varieties. The interviewer asks which one of the three varieties is different from the other two and why?

Considerations:

Write down the criteria the person uses to discriminate between the plants (it could be size, odor, uses...). You simply document what the person says, and at the end you will see what characteristics are important in the conservation of these seeds.

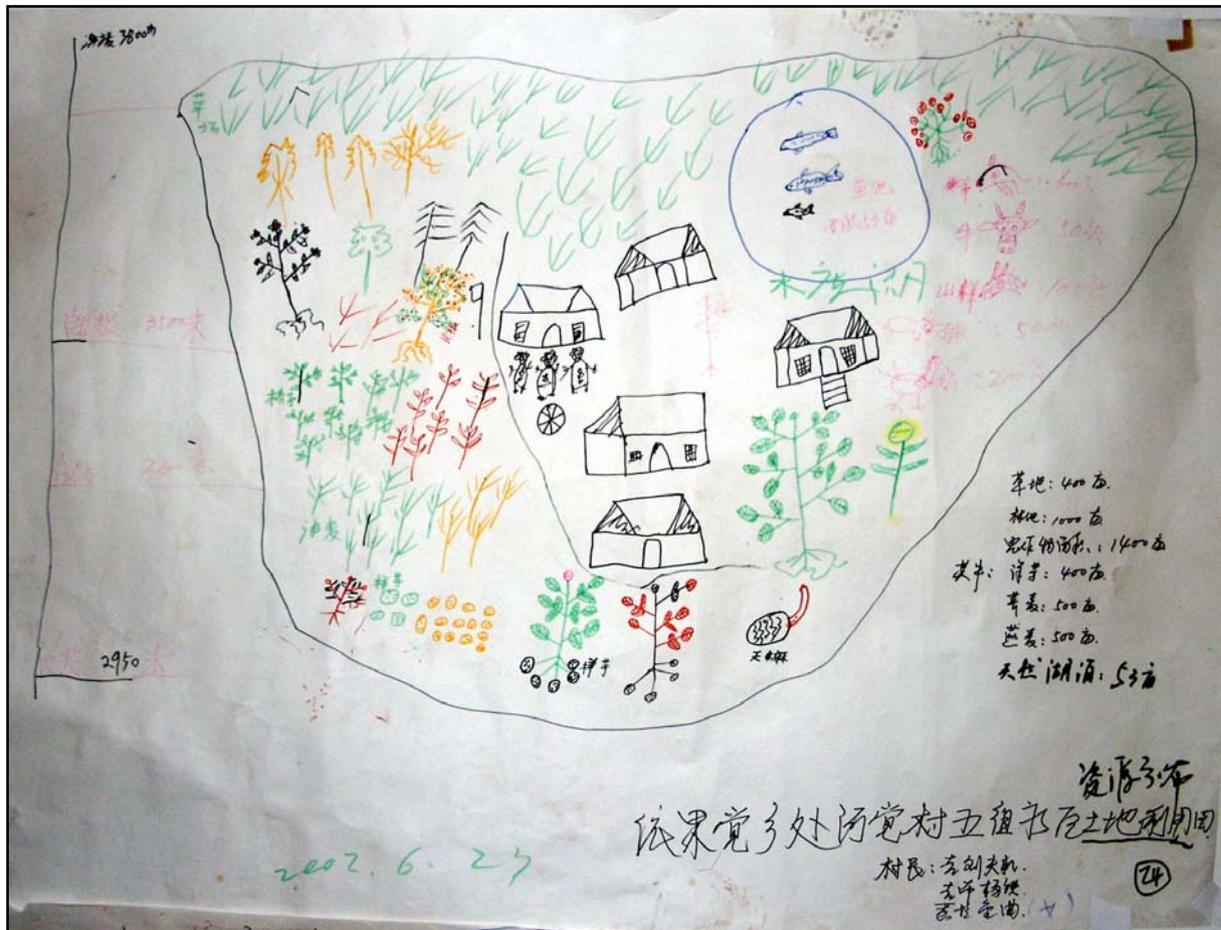


Three different varieties of potatoes are selected and compared according to different criteria related to time of introduction, production, pests, taste, market, etc. (Drawing from Miheme, Yi community in Chuxiong, Yunnan).

M. VISION OF THE FUTURE

For a planning process to strengthen IK, to design a village plan and to motivate a discussion on the future development of the community the IK-facilitator motivates a drawing of the villagers about their vision of the future. Based on the drawing the villagers discuss and plan future action. Instead of a problem solving approach, where you ask for problems to be solved, you help the villagers to reflect on an ideal future, a vision of the own future. Only looking at problems is rather depressing, while putting up an aim for the future motivates the community far more.

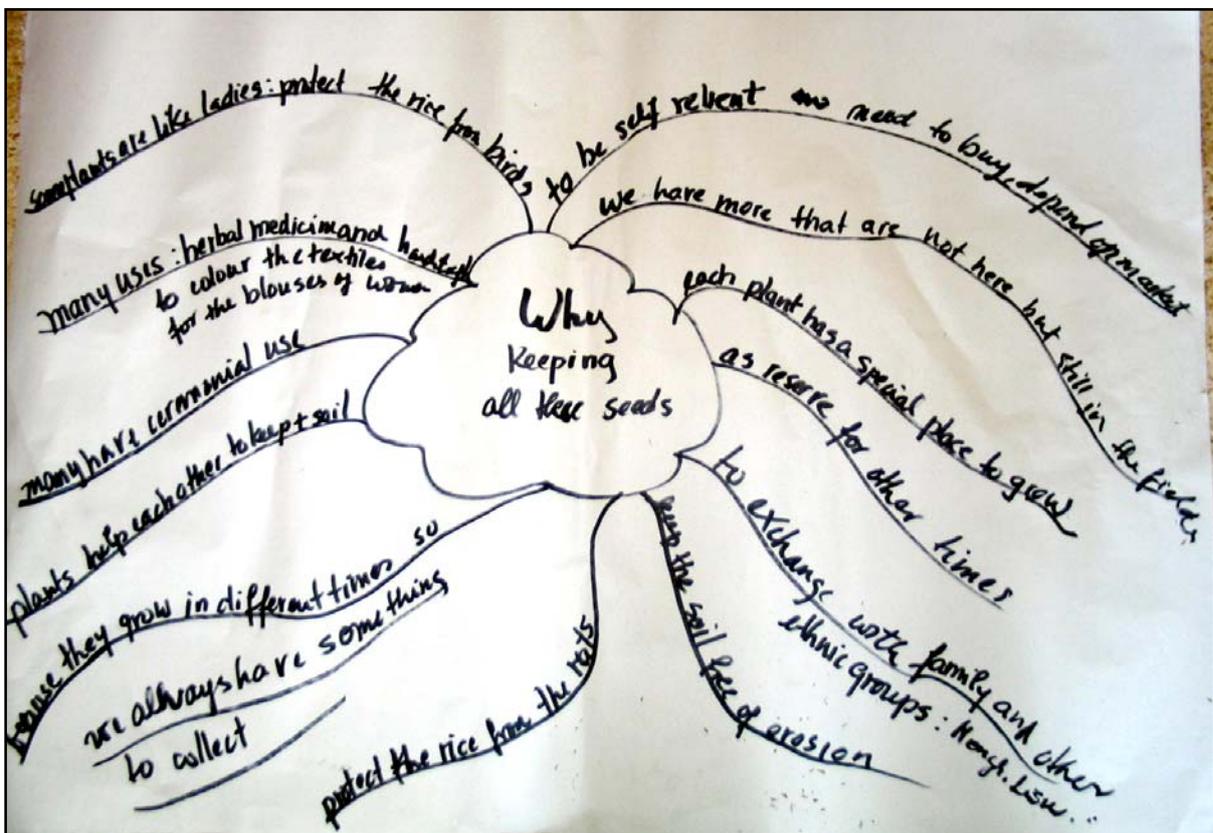
The time horizon of the vision of the future should not be too close nor too far. It should be feasible for the persons drawing and discussing about the vision to live the future, which means look at 10 or 20 years of time. The discussion after the drawing process focuses on the values and contents of the vision, then moves on to the feasibility of certain actions and can be continued with a planning matrix for concrete action in the years to come.



N. MINDMAP

The mindmap is a creativity tool as you list all your ideas on one sheet of paper in a form of a spiderweb. It allows to add new ideas, to modify already expressed ideas and to give an overview about any item. We use it often for planning of training events, as on one page we can see all relevant items and can continue with a planning matrix.

To pin down specific knowledge and values of IK the mindmap (map of the person's ideas and values) gives overview and details, like in the following case of Karen villagers from Hin Lat Nai about their reasons why they keep all the variety of more than 70 different seeds (species and varieties). It gives incredible insights into the values and into the practice of people who live for centuries with nature and rotational farming in the forest.



5. RULES, TIPS, AND ETHICS

Our manner of application of the tools has a three-dimensional complexity. This will be revealed in our behaviour. The dimensions of the rules deal with mastering what are the possibilities and limitations of the tools. In other words, we should know what type of information can be triggered by each tool. For example, an historical diagram will allow local people to structure three or four components of the way they perceive important events in the village. Or a transect will create the possibility for local people to order their spatial perception of their environment.

Each tool has the capability of exploring local peoples' specific ideas, perceptions, and preferences about time and space, but we should be aware of their limitations as well. A matrix, even if it contains a very long list of plants and animals, does not exhaust all the knowledge that local people have about flora and fauna. The tools give realistic, authentic, subjective, qualitative and quantitative information about a portion or aspect of local perceptions, ideas or experiences, but it is not a complete picture of local knowledge.

For that purpose a tip is to count on using a repertoire of tools to cover a relevant span of knowledge from at least three different points of view (triangulation). Another tip is to rehearse the application of a tool with yourself or work mates first and than use it with local people. It will make you feel more secure with the technicalities and steps of using the tool: what to do first, second & third, and how long. You will also know from your own experience how it feels to be asked questions and to give responses to certain questions. Local people will feel similarly.

Do's	Don'ts
<p>You are a guest of the local people.</p> <p>Behave as a guest. Respect the people and their privacy.</p> <p>Show your interest for local customs.</p> <p>People will be happy to show them to you if you show your interest.</p> <p>Accept invitations for drinking hot water, tea or eating local food, but be reserved and do not exaggerate.</p> <p>Present yourself and your purpose.</p> <p>Obtain permission and agreement to work with the local person.</p> <p>Adapt to the time schedule of your hosts. If they agree with your purpose, then they will help to arrange adequate time for it. They have many responsibilities with their family, village, the fields and their animals. Show your motivation to help them in their daily work and contribute to alleviate the daily tasks a bit.</p> <p>Ask for permission, also, if you want to take photos. Explain why you are taking pictures and send pictures to the local people once back in town.</p> <p>If you go to stay in a village or with a family, take some gifts with you, such as fruits or products, which are appreciated by the local people.</p> <p>Treat local people as equal partners.</p>	<p>Do not manage the people and their time according to your own interest and benefit.</p> <p>Do not impose your own time schedule and sleeping habits (asking for a nap after lunch).</p> <p>Do not judge the local customs as bad, strange or negative.</p> <p>Do not rush through the village due to an outside time schedule (lunch or dinner with officials).</p> <p>Do not push people to finish as many tools as possible. The learning and dialogue process is more important than many quick results and tools.</p> <p>Do not damage the local environment.</p> <p>Do not get drunk in the community.</p> <p>Do not insult community members.</p> <p>Do not sleep or disappear all the time abandoning the villagers who offer their valuable time to show you their life and livelihood.</p> <p>Do not dominate and impose your own criteria to judge people's opinions.</p> <p>Do not talk all the time (avoiding to listen to the villagers and their ideas and knowledge).</p>

FURTHER READINGS

Escobar, Arturo. 1995. *Encountering Development: The Making and Unmaking of the Third World*. Princeton: Princeton University Press

Mitchell, Bruce. 1997 *Resource and Environmental Management*. Harlow: Longman.

Nazarea, Virginia, E. Tison, M. Piniero, and Robert E. Rhoades. 1997 *Yesterday's Ways, Tomorrow's Treasures: Heirloom Plants and Memory Banking*. Dubuque, IA: Kendall/Hunt Publishing Co.

Salas, Maria A., Tillmann H.J. *Nuestro Congreso. Manual del Diagnostico Rural Participativo (DRP)*, Picagres, Costa Rica 1993

Salas, Maria A., Tillmann, H.J. *Participatory Technology Development (PTD). Linking Indigenous Knowledge and Biodiversity for Sustainable Livelihoods*. Yunnan Science and Technology Press, Kunming 2004

Toledo, Victor Manuel. 2000. *Biodiversity and Indigenous Peoples*. In *Encyclopedia of Biodiversity* 3:451–463. San Diego: Academic Press.