VISUALIZING SUSTAINABLE LANDSCAPES

Understanding and Negotiating Conservation and Development Trade-Offs Using Visual Techniques

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UNDERSTANDING AND NEGOTIATING
CONSERVATION AND DEVELOPMENT
TRADE-OFFS USING VISUAL TECHNIQUES

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For my father Bapak Boedhijartono,
who inspired my interest in people and art
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Livelihoods and Landscape

Much of the work that inspired this manual was conducted as part of the IUCN Livelihoods and Landscapes Strategy – LLS. LLS sought to improve the livelihoods of the poor whilst conserving the environmental values of the landscapes where they live. LLS focussed on managing landscapes for production and environmental values. A variety of visual techniques were used in many of the 27 landscapes where LLS worked and this manual describes some of the lessons learned from visualization exercises in those landscapes.

Why visualization?

Landscapes scale programmes confront the full complexity of the interactions between conservation and development. They deal with peoples’ livelihoods, biodiversity, climate change, the diversity of culture and languages, and the constant transformations in peoples’ ways of life. One has to deal with different ethnic groups, different levels of education and literacy and different interest groups. It is essential to engage civil society, the private sector and government agencies, as well as students, researchers and development practitioners from local and international organizations.

The value of visualization is to get a picture of the way various individuals and groups understand the landscape and how they would like it to evolve in the future. The visualization activity itself allows different people to share their views and begin negotiations about different and sometimes conflicting objectives.

Visualization techniques can be used to:

1. Focus on the value of resources and not on limits or boundaries. Visual techniques reveal peoples’ appreciations of the environment and natural resources in ways that often get overlooked in other participatory processes.

2. Empower local stakeholders – especially marginalized groups and underprivileged people. Visual techniques help to get them involved and enable them to communicate their knowledge and wishes.
3. Empower and engage different sectors of society – for instance women and men, the young and the old, ethnic and linguistic minorities etc.

4. Focus on historical trends and explore future scenarios – thus helping to build an understanding of the processes of change and not simply to record situations at a point in time.

5. Enrich computerized techniques to make animated products which can form the basis for discussion and negotiation, provide a permanent record of decisions and monitor change.

6. Communicate scenarios and desired outcomes to external audiences.

7. Build trust amongst stakeholders in a multifunctional context.

8. Preventing “experts” arriving with ready-made solutions.

9. Understand relations between large & small scales (local, national or international interests).

10. Resolve conflicts.

**Visualization for practitioners**

The need for a manual on Visualization Techniques arose from work with facilitators from different institutions (NGOs, University researchers, government agencies, and small local community associations) – who all showed an interest in using visual methods. They saw potential applications in planning and in simply understanding the complexity of the situations and conditions of the places where they work or live. Different visualization techniques are already widely used and several of these are discussed in this manual – for instance some sustainable development practitioners have used “rich pictures” where stakeholders illustrate their concerns on a large drawing of their environment, others use photography and video to communicate issues and to track changes in landscapes.
Visualization Techniques have been used with nomadic pastoralists in Africa, indigenous and forest dwelling peoples in the Congo Basin, Indonesia and Central America, cattle ranchers in South America and with mountain dwellers in the Atlas ranges in Morocco. These techniques are used to compare visions of stakeholders and to negotiate trade-offs through comparing these visions.

The aim in producing this manual is to strengthen the community of practitioners who are using an innovative range of visual techniques in dealing with conservation and development situations.

What is actually the problem?

Development programmes are coming to the most isolated places on earth and this often threatens nature. To make conservation programmes work it is important to understand the reality on the ground of people who want to have better livelihoods and see economic progress in their landscapes. The issue is to ensure that this development is sustainable and equitable. It is important to understand the social and cultural contexts of the various stakeholders when considering any external intervention, and to be guided and informed by the local needs and contexts.

Conservation and development experts invest major resources in seeking win-win solutions to conflicting resource-use demands in developing countries. These attempts to integrate conservation and development present at least four notable problems:

1. Outsiders have great difficulty in fully understanding the complexity of the landscapes and the full range of values of all of the stakeholders.
2. There are numerous actors whose decisions impact on the landscape and influence its evolution. Any attempt to change a landscape requires understanding and influencing these multiple-actors.
3. In reality win-win outcomes are the exception rather than the rule and there are almost always some who lose and some who gain. The degree of
loss to some stakeholders has to be negotiated against the degree of gain to other stakeholders.

4. There are different environmental and socio-cultural values amongst stakeholders in these complex landscapes and complex issues of governance and power relationships.

**Why work at a landscape scale?**

These techniques have been used at different spatial scales with different actors in different countries around the world. The scale depends upon the problems that are being addressed and ranges from the village, district, state, country, trans-boundary region etc. The word “landscape” applied at any of these scales is used to convey the idea that all the uses of land and all the users of that land are being looked at in an integrated way.

Visual techniques have been used to provide a framework for addressing conflicts or trade-offs around industrial plantations, nature reserves and national parks, community forests, logging concessions, or simply the area from which a community draws its livelihood resources for instance the area where a community gathers firewood or non-timber forest products, etc.

The point of landscape approaches and other large scale conservation and development activities is that the “landscape” embraces the **full range of social, environmental and economic values**. Trade-offs occur at different scales which makes them all the more difficult to manage and understand.
In choosing a scale to work in a landscape, it is important to remember:

- The scale at which trade-offs can be addressed
- The environment that people understand and can conceptualize
- The scale at which scenarios are useful
- The area where one seeks to achieve change
- The area where people derive their livelihoods

IUCN and other international organizations often use landscape and ecosystem approaches to deal with complex, large scale problems and to reconcile the different views of multiple stakeholders.

There is no standard definition of a landscape approach. In this manual a landscape is defined as a geographical area with its physical and biological features together with the institutions and people who influence the area and their cultural and spiritual values. The landscape approach is a process in which all concerned actors attempt to learn and adapt together to achieve outcomes that are better for nature and people.

The IUCN use of the landscape approach is similar to the ecosystem approach which is defined by the Convention on Biodiversity as “a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way”. Application of the ecosystem approach will help to reach a balance of the three objectives of the Convention on Biological Diversity. It recognizes that humans, with their cultural diversity, are an integral component of ecosystems.
Moussapoula, Central African Republic
Participatory techniques are widely used by conservation and development practitioners to attempt to build their understanding of complex conservation and development trade-offs and to attempt to gain support from local stakeholders for external “project” interventions. Visual techniques have been used in these participatory techniques—notably in Participatory Rural Appraisal (PRA). These techniques have been used for many years to map existing rights, tenure, ownership and use of natural resources. In some landscapes where LLS has worked, visualization techniques have been used as a very simple way to communicate visions and perceptions of possible future landscapes by using images (drawings, photos, animation etc) and also as planning and monitoring tools. The basic aim has been to help people to find a balance between “Conservation and Development”.

Visualization is also used to complement other tools such as systems modelling for instance with STELLA software, the Poverty Toolkit, Capital Assets Indicators, CRiSTAL (Community-based Risk Screening Tool – Adaptation and Livelihoods), Participatory Rural Appraisal, etc. These tools are all described in a special issue of Arbor Vitae published by IUCN in 2008 and available from the Forest Conservation Programme at the IUCN website: www.iucn.org

Visualization techniques can be used to influence other processes that are taking place, as they help in understanding different visions and possible landscape scenarios. Visualization helps place all participants at the same level in discussions, policy dialogues and in the formulation of future scenarios for land use/land tenure arrangements. Visualization can also be used for management planning, for instance in planning for protected areas, resources access rights, development programmes, monitoring etc. The process of visualization is also a way to construct a mind-map of what is happening in a landscape and for understanding the connections between the environment and livelihoods.
Visual techniques are central to participatory approaches.

- Letting marginal and minority groups participate on an equal footing
- Discussing whose vision? Whose realities count?
- Exploring future options
- Enabling discussions to take place “on their terms” and not putting “their” information into “our” framework
- Avoiding technical jargon and techniques that local people cannot understand
- Getting a balance between the power of experts and that of local stakeholders
- Moving from ”We” plan - “you” participate to ”You” plan - “we” facilitate
- Opening up debate on the full diversity of options and interests
- Making trade-offs explicit
- Building understanding and negotiating amongst different stakeholders
Climate Change
**Visualization:**
- A “visual” language to use for exploring landscape scenarios and landscape stories.
- Images are used to communicate concepts and perceptions.
- Visual representations and illustrations such as drawing, painting, photography or other art work are used to communicate the richness of the values of a landscape.

Visualization is any technique for creating images, drawings, or animations to communicate a message or idea. Visualization is also used to present information, scenarios or perceptions. It has been the basis of all maps, scientific drawings, illustrations and data plots for over a thousand years. Today technologies allow people to use 3 dimensional representation to explore future scenarios and some use GIS (Geographic Information Systems). There are numerous scientific publications on different visualization approaches and many recent ones focus on using computer graphic support.

Diagrams, maps and paintings/drawings are all examples of the use of visual language. Visual imagery has been an effective way to communicate both abstract and concrete ideas since the dawn of man. Examples from history include cave paintings, Egyptian hieroglyphs, Greek geometry and Leonardo Da Vinci’s revolutionary methods of technical drawing for engineering and scientific purposes.

Visualization today has ever-expanding applications in science, education, engineering, interactive multimedia, medicine, development, conservation, etc.

In our use of Visualization we are trying to understand people’s perception of their landscape and their future wishes and we use simple techniques such as drawing or sketches.
The idea is to create visual images to communicate an idea or a vision to others. Just as people can ‘verbalize’ their thinking, they can also ‘visualize’ it. The images are created in a group situation so that different people with different backgrounds, ethnicity, gender or occupation, can all work together to study the complexity of a problem.

Scenario Analysis

Scenario exploration is used to understand possible future trends and helps make strategic decisions based on analysis of the likely consequences of different courses of action. The process of scenario analysis involves:

- Identifying forces driving change
- Identifying predetermining factors
- Identifying critical uncertainties
- Developing scenarios and trajectories of a sustainable future
- Assessing the implications of different scenarios
- Trying to develop a shared vision of what a group would like to have in the future.
- Trying to find common ground between conflicting interest groups.
- Trying to better understand different perceptions from different groups of people (age, gender, ethnic groups, NGOs, government, communities, etc)
- Locality mapping is useful in understanding land tenure and land degradation problems.
- Visual tools are used to help those without voice to contribute in multi-stakeholder negotiations.

The most important step in visualization is to allow different stakeholders to work separately and then come together with other stakeholders to compare their preferred scenarios for the future landscape. The key theme is “negotiating by comparing scenarios”.
Tacana landscape,
Guatemala
To start the visualization, it is important to understand that different groups of people have different visions and goals in multi-stakeholder discussions. The facilitator must be well prepared and be ready to adapt to different conditions and situations in the field.

1. **Prepare white papers or flipcharts and coloured pens.** Take at least 4 colours of pens: black, blue, red and green.

2. **Divide the participants into small groups. Each stakeholder group has to work separately.** Depending on the issues you might divide people by gender, age, ethnic groups, occupation, etc. In other situations you might separate out government officials, NGOs, local communities, the private sector etc.

3. **Encourage people to talk about their landscape and suggest drawing the present condition of the landscape.** Tell people to imagine that they are birds flying over the landscape.

4. **Ask pertinent questions** (important elements in their life and their environment, daily life activities, any big drivers of change in the region? any challenges? What are the important biodiversity values in the region? etc.)

5. **Sit back and watch – continue to engage in conversation.** After the first drawing is finished, ask the same people to draw future landscapes – maybe the most desirable: the best case and the least desirable: the worst case.

6. **Discuss and ask questions**

7. **Put scales and date**

8. **Indicate north-south on the drawing / map**

9. **Don’t forget to put legends & names of participants**

10. **Add GPS references when possible**

11. **Photograph the drawing for archiving and other use in the future**

   **Tips:** On the legend, it helps to put the degree of importance of each element in the drawing. For example by putting: + important, ++ more important, +++ very important. This will allow statistical analysis to better understand the relative value of features of the landscape.
EXAMPLE OF EXERCICES:
PRESENT and FUTURE scenarios

Local people were asked to draw the present situation and their expectation of the future scenario for a rural landscape in the Central African Republic.

The drawings above were made by a group of BaAka pygmies in the Central African Republic in the village of Mossapoula, inside the Sangha Tri-National landscape. The first drawing explains the important elements in their livelihoods. The road and river are a central part of their life. The houses and huts are spread along the road. Trees and products that they gather in the forests are part of their daily life. The future drawing shows that they would like to see more wildlife and more forest products that they could collect for subsistence. A school is important for their children to have a better livelihood. We can see several children and new schools and fancy new buildings. Transportation is also an important element that links them to the modern world. This drawing shows that the BaAka pygmies would like to have a good education for their children and access to the modern world. Some local NGOs in the Sangha Tri-National landscape now work together with the pygmy groups to help them to achieve the scenarios that they presented in their drawings.
**BEST case scenario and WORST case scenario**

Drawings made by a group of government officials in Burundi about the future of Kibira National Park and its surrounding area.

These two drawings show best case and worst case scenarios for the Kibira National Park and its surrounding area in Burundi, close to the border with Rwanda. The officials believe that if a restoration programme runs well and if contour hedges are built in the hills and people practice good management, then the Kibira National Park would be very green and the communities living around the park would benefit directly from the Park. In the worst scenario where bad management with bad governance prevails, the National Park would suffer a lot of erosion, forest fires, a lot of people would die of starvation as their crops would fail. Other drawings were made by local NGO groups and local communities from surrounding villages. The discussions between these stakeholders based on the drawings were then used to plan activities supported by IUCN in the region of Kayanza.
TIPS – do not forget

- Remember who your audience are
- Listen, learn and observe
- Let different groups work in parallel (men-women; old-young; different villages; different ethnic groups; government officials-private sector etc.)
- Let people express themselves freely
- Advise people how to create icons for different element in the landscape
- Advise on the use of different colours for each icon (blue for water, red for road, green for trees, etc.)
- Provide advice on scale
- Provide a minimal base map when needed as a framework
- Discussions are often more valuable than the drawings themselves
- Different groups should develop different drawings
- Compare landscape visions and scenarios
- Archive and digitise the maps

Mistakes to avoid:

- Don’t go too quickly:
- Don’t be too rigid
- Don’t make assumptions
- Be aware of cultural differences
- Don’t bring pre-cooked solutions
- Don’t try to dominate
- Don’t be too technical
- Understand that people have other priorities – meals, children, crops, animals etc.
- Make sure that extroverts don’t dominate the introverts
VISUALIZING SUSTAINABLE LANDSCAPES

Cendrawasih Bay,
West Papua, Indonesia
After the visualization exercise is finished, it is important for each stakeholder group to present their vision to others and this next step becomes a very important stage in the discussion and negotiation for future landscape scenarios.

**Animated Drawings**

The drawings can be used directly or animations can be developed to show the different scenarios that are possible in the region. To develop animations, it is necessary to scan or photograph the drawings of the present situation, upload them into a computer using drawing or photographic software such as Adobe Photoshop. Retouch to clean the image in the computer using appropriate computer software, copy and paste different elements in the drawing to enable the image to be changed quickly to show different scenarios for the same landscape. It is useful to create several alternative drawings to show different future scenarios.
How to do the animated drawing

1. Take a drawing
2. Scan and retouch to clean the drawing using Adobe Photoshop

3. Select an icon then copy and paste in the initial drawings

   Copy and Paste them as many times as desired

4. Create an alternative future scenario
5. To have several future scenarios, repeat step 3 with another icon, and create different future landscapes by cutting and pasting a range of icons. Allow different stakeholders to propose the number and location of the icons.

6. Put the different drawings in powerpoint, and the series of drawings become a series of animated future scenarios. This can be used to stimulate a discussion and initiate a negotiation process amongst stakeholders.
**Smart-mapping**

Smart-mapping is a method that was developed for exploring scenarios using drawings created in the computer. The idea is to create a library of symbols and icons using different drawing and painting software (Adobe Illustrator, Photoshop, Coral Draw, Paint etc.). This method can be used to create a variety of landscape scenarios in a slightly more sophisticated way. Government officials, private sector representatives and other stakeholders often pay more attention to these attractive images rather than to hand-made drawings which they consider to be “childish”. Smart-mapping can be used as a tool to explore landscape scenarios with policy makers and to help understand the important drivers of change in a landscape. A bigger audience can attend the planning process and the different scenarios for the landscape can be projected onto a screen. Diverse stakeholders can contribute their views on desirable and undesirable scenarios.

Smart-mapping is an important tool for negotiation and discussion but is also a valuable communication tool.

**Things to remember when doing the smart-mapping:**

a. **Communicating scenarios with Smart Mapping** – different future scenarios can be projected from a computer and people can be encouraged to discuss their merits

b. **Use of icons** – a wide range of “elements” of the landscape can be drawn as icons and cut and pasted onto the scenario in response to suggestions from the audience

c. **Negotiating** – people can negotiate the distribution, number and type of icon and thus the composition of the future landscape

d. **Compromise** – if people do not agree then the facilitator can encourage them to reach a compromise

e. **Visual record of decisions** – the scenarios can be photographed, archived and used at future meetings of stakeholders to remind them of their earlier discussions and decisions

f. **Basis for monitoring** – the smart maps can be used to track changes in the landscape, both for the worse or for the better, people can discuss the progress being made or the lack thereof.
The importance of symbols or icons

Making symbols with the stakeholders is an important step to make people feel ownership of the participatory process. In some cases symbols can be drawn in advance, but more often it’s good to decide with the communities or the stakeholders what will be used as symbols or icons. This is especially important if the drawings are to be used as a basis for future evaluation or monitoring.

How to do the smart-mapping?

1. Take some drawings of a landscape made by different groups of people (present and future landscapes by men’s and women’s groups). Take the hand-drawn images, scan them and upload them into a computer. Save them in a secure archive.
2. Make a list of all the elements in the drawings

- house, hut, hospital, church, road, river, car, bike, man, child, dog, bird, fish, chicken, elephant, porcupine, forest, fruit trees, medicinal plants, banana tree, cassava, hibiscus, NTFP, mushroom, cooking tools, stove, mortar, etc.

3. Make an icon for each element in the drawings. Use drawing software (Adobe Photoshop, Adobe Illustrator, Paint, Coral Draw etc). Use the tutorials of the software to learn how to create an icon.
4. Create a version of the drawing in the computer using the icons that have been prepared before. Copy and paste the icons onto the drawing. This is what is called smart-mapping.

A drawing in Eastern Sudan and the smart-mapping version of the same drawing

5. Copy and paste the icons to make alternative future landscapes.

Several drawings can be used following one after the other to show the changes and to explore different scenarios.
An example of SMART-MAPPING with Men and Women exploring present and desired future scenarios

Present landscape

Women’s vision of the future

Men’s vision of the future
This example of smart-mapping shows the different visions that women and men have of the same landscape. The women would like to have a road that would link their mango trees to markets as they usually dry the mangoes and also make mango jam. These mangos contribute to the women’s income. They would also like to see a school for girls and women centres for learning how to make handicrafts and to sell them. The men’s group would like to have electricity supplies. They would also like to see more trees in their plantations and a sports centre. After this exercise, the communities reached a compromise on an action plan to realize a desire future. The plan was implemented by the villagers with some help from the local government and international organizations.

6. Make several future scenarios and encourage people to discuss the options. Then negotiate with the different stakeholders to determine their preferred scenario. People can quickly learn to cut and paste the icons and make their own smart maps – this will often motivate them to really feel ownership of the process.
How to make an icon?

To make an icon, there are different software options, for example: photoshop, illustrator, paint, coral draw etc.

1. Open a blank page
2. Click on paintbrush or pencil to begin drawing the icon
3. Choose the colour by clicking on colour palette
4. Begin to draw
5. To fill in a colour in the outline already made, click on paint bucket then click inside the drawing
6. If you need to copy the icon, choose the necessary icon with a lasso or a selection square and click on copy (ctrl C)
7. Then paste (ctrl V) the icon anywhere you want it. You can duplicate the icon as many times as you want
8. To move the icons, select them using the lasso or selection square, and then use the cursor to drag them
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Voici une grille pour prioriser les aspects de la vie quotidienne.

1. Très peu
2. Peu
3. Important
4. Assez important

Poestenga, Burkina Faso
When doing visualization exercises in a landscape, it is important to understand all of the issues and trends in the region. Visualization usually accompanies other activities. There are different ways of getting started in a landscape and learning from its people. Here are some of the simplest and best ways of getting connected when arriving in a new location.

a. **Data review** – read as much as possible about the place and the people before going to the field (books, reviews, journal articles, reports, maps, etc).

b. **Appreciative Inquiry** – meet local people and listen and show appreciation for their ideas and knowledge.

c. **Historical trends** – get people to outline what has happened in the past and how the present situation has come about.

d. **Rich pictures** – encourage people to prepare simple drawings that allow them to represent all their knowledge of values and points of interest in the landscape.

e. **Dotmocracy** – let people use sticky dots to vote for different issues, solutions, scenarios etc.

f. **Worst case and best case scenarios** – people can draw their worst case or best case scenario or they can write down on cards their greatest fears and hopes.

g. **Threats and opportunities** - Getting people to list their ideas on the strengths, weaknesses, opportunities and threats in a landscape often opens up debate on important issues.

- **Appreciative Inquiry**

  *Appreciative inquiry* values the local environment and recognizes the best in people or the world around us; affirming past and present strengths, successes, and potentials; to perceive those things that give life (health, vitality, excellence) to living systems. Discovering and being open to potentials and possibilities...
The main things to consider when using appreciative inquiry are:

a. Listen, learn, and share – be patient and observe
b. Give positive feedback
c. Societies can learn – social learning comes from social interactions and experiences
d. Remember that “they” always know more than “us”

• Historical Trends - Understanding changes that happened in the past using timelines and trend analysis.

• Try to understand the history and background to a situation or a landscape. Explore how change has occurred in the past, why things are the way they are and why different groups or individuals hold their views. Lay out a long sheet of paper and ask people to list important things that have happened and that have influenced their lives and landscapes.

• What events people remember in their lives, such as: droughts, forest fires, tsunamis, volcanic eruptions, political change, malaria or dengue outbreaks, currency devaluations, innovations, etc.

• When dates are not remembered, find dates that are known by outsiders (such as when a bridge was built, or when there was a big fire, a volcanic eruption) and get people to relate their oral history to those events. This will give an approximate time line.

• Develop the trends in agriculture, forestry, infrastructure, health and education, understand the patterns that have occurred before, then use this to lead into a discussion of future scenarios.

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<th>Year</th>
<th>Events</th>
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| 1963 | • Eruption of volcano  
       | • Arrival of missionary  
       | • School started in the village |
| 1980 | • Forest fire  
       | • Very dry season (el Niño) |
| 1998 | • Political change  
       | • Currency devaluation |
| 2000 | • Mining company arrived in the region  
       | • Local communities get jobs at the logging company |
|------------------|----------------------------------------|---------------------------------|-----------------------------------------------|-------|-----------------|
| Trends           | Bush areas which used to harbour tsetse fly gradually cleared from the 1920s onwards. Cattle then multiplied. Heavy deforestation resulted. | Great growth in cattle and human numbers. | Growth in cattle and human numbers | Growth in cattle and human numbers | Too many cattle - and nowhere to feed them. |
| Cattle           |                                        |                                 |                                               |       |                  |
| Forests          | Original vegetation, woodland/bushland. Ngiti set aside by Sukuma people as dry season grazing reserves, when forest cleared for agriculture. Trees were incidental - just shade protecting the grass. | Ujamaa and Villagization destroyed many indigenous natural resource systems. Many ngiti were destroyed when people were moved into villages and the forest they had protected was left unattended. | HASHI soil conservation project launched in 1986 is supported by Norway. HASHI wanted to revive ngiti. Some still there but very depleted; some newly created by HASHI. People cautious at first - watched and judged activities. | But by the 1990s people had seen that more ngiti was a very good idea. They began to be created rapidly. This time they were not just used for fodder, but for a wider range of tree products. | Communal ngiti are not always in the right place. More demand for ngiti products than can be supplied, especially for the poor. Complaints that there is not enough land for any more ngiti. |
| Land Ownership   | Land ownership originally followed Sukuma custom. There were private fields, private grazing reserves and communal forest areas. | The Ujamaa and villagization of Nyerere created state ownership of rural lands, not private ownership. It caused degradation because actually all lands were open to anybody. | HASHI wanted to help people own their resources again. | People rushed to create their own private ngiti, as well as communal village ngiti. They sometimes bought land to do it. | About half of ngiti are small private ones and half larger communal ones. Most owned by men - women may use them. There is a growing land shortage and some people are now landless - having sold land to others. |
| Institutions     | A council of elders ruled the village and imposed punishments on those breaking land use rules. | Traditional institutions which used to manage ngiti were destroyed | uncertainty | In 1999 the Village Government became the lowest government level. | Village Government has the right to control ngiti allocation and use. |

Source: Shepherd, 2008
• **Rich Pictures**

**Rich Pictures** provide a way for learning about complex or unclear problems by drawing detailed and rich representations of them. Rich pictures usually consist of symbols, sketches or scribbles and drawings. They can include as much pictorial information as necessary. The real value of this technique is the way it encourages people to think deeply about the problem and understand it well enough to express it pictorially.

**Mind-maps** are diagrams used to represent words, ideas, tasks, or other items linked to and arranged around a central key word or idea. Mind maps are used to generate, visualize, structure, and classify ideas, and as an aid to studying and organizing information, solving problems, making decisions, etc. There are several software packages available to support the preparation of mind maps (Nova Mind, Mind Manager, etc.).

**Key action:**
- Make pictorial representations of what is considered to be important to a particular situation
- Comics can be a good way of communicating messages
- Try to see interactions and connections between different stakeholders
- Try to get a broad shared understanding of a situation
- Use transect maps – ask people to draw what they see on a walk through the landscape

*Drawings deliver messages easily and powerfully*
• Dotmocracy

Dotmocracy can be used to let people vote for an idea, priority activity, preferred scenario or to show the relative importance of elements in their livelihoods or landscapes. Coloured dot stickers can be purchased in stationary shops and can be given to people attending meetings and used to vote. Participants get a fixed number of sticky dots and simply stick them onto their preferred choice. Different colours can be used to distinguish between groups of actors (men and women, young and old, local people and outsiders, etc).

Example of using dot stickers

In this example, green stickers were given to local communities and yellow stickers to outsiders working in the region. Each person got 5 stickers, and they had to rank items of significance in the landscape listed on a white board. Each person could put from 1 to 5 stickers on their preferred choice.

• Best case & worst case scenarios

Best case and worst case scenarios are used to make people realize how important it is to think about possible impacts if things go wrong in their landscape. Sometimes people don’t realize that there are trade-offs when they make decisions. In addition the best case for one person could be the worst case for another. These scenario exercises
can be very useful in getting people to think about the long term consequences of their actions. Once the scenarios have been drawn they often stimulate a rich discussion of what sort of future is best.

In the drawings here some people see a bridge as a positive evolution that links both sides of the lake; another group thinks that it would have a negative impact on the natural environment. In the best case scenario, a factory is seen as good for employment while another group sees it as a threat as it would
attract migrants to the region, which would lead to over-population and cause degradation of the environment.

- **SWOT (Strengths, Weaknesses, Opportunities, and Threats)**

Strengths, weaknesses, opportunities and threats can be listed on cards and pinned onto a board – if each participant does this separately then they can all be invited to come up and explain to the others what their hopes and concerns are. Dotmocracy can also be used here to rank the different strengths, weaknesses, opportunities or threats.

The two drawings below show how people see the present situation and a possible future in the Virunga National Park and its surroundings in the Democratic Republic of Congo. This activity was used to assess strengths, weaknesses, opportunities and threats for interventions around the national park. The process helped in building consensus amongst local NGOs and international donor agencies to better understand possible activities to be carried out to improve peoples’ livelihoods and protect the environment during times of civil conflict.
Um Zibil Forest,
Hawata landscape, Eastern Sudan
Using the data and information is the trickiest part. Lots of people take photographs, produce drawings, conduct household surveys etc but when other people need the information at a later date it often proves very difficult to find it. If you are going to invest a lot of peoples’ time and money in doing surveys, collecting data etc, it is essential to have a good plan for how that information will be stored so that it remains available in the future.

Most data can be inscribed on a CD ROM and copies left with key local organizations – this may be the best way of storing information. Publishing the results of studies in established journals also ensures that it will be available in the future and also makes sure that it is checked by peer reviewers who will verify that the data has been collected properly.

Another way of encouraging public use of visualization exercises is to put data or drawings online on the website of a concerned local organization or use a blog. Publishing in popular magazines and exchanges with mailing groups are also a great way of learning and sharing experiences from others.

- **Participatory Monitoring using drawings, rich pictures, smart maps, photography, etc.**

There are a lot of different methods to record and communicate the diversity of values in people’s landscapes and livelihoods. Keeping a visual baseline for monitoring change can be a very useful approach – the images can then be used in successive meetings to discuss how the changes that were predicted are actually happening on the ground. The images can be created in many ways – not just by drawing – many development practitioners use photography and videos for working with local communities.

If drawings are properly archived it is possible to come back to the same landscape after several years and evaluate how the situation has changed; to see if it is changing positively, and the people have better livelihoods or if the change is not going in the right direction. In the latter case the drivers of change can be discussed and people helped to understand the reason that the landscape is deteriorating.
Step by step approach to monitoring changes with local communities:

1. Print the drawings in format A3 or bigger.
2. Laminate them
3. Go to the village where the drawings were made
4. Take coloured pens
5. Ask people to mark the changes on the laminated drawings
6. Take photos each time and do the exercise with different groups of people
7. This will provide a good basis for monitoring and evaluation, and enable repeat visits every year to continue tracking changes
8. After a few years, there will be a series of drawings showing how the situation has changed

• Monitoring changes using images

Drawings made by different stakeholders can be used for participatory monitoring of changes. This can be repeated using other supports such as photography, maps, video, smart-mapping etc. The idea of using baseline data in future years is to be able to compare reality with planned changes. Visual supports will emphasize the changes.
The example on the previous page comes from Liberia. The plan is to return every year with a laminated version of an initial drawing in A3 or a larger format. Communities will be asked what changes they see in the landscape and will be enabled to keep track of any changes that occur. If there are other new ideas for change, the community could add them with coloured pens on the laminated drawings. Then the new version can be photographed to add to the archives.

The first drawing is made by the community to represent the present. By using the same laminated drawing in the following year, the community will be able to show how a bare area had been planted with trees. This second drawing shows the changes in the landscape with planted trees and new housing.

Some other examples of participatory monitoring follow:

**Hawata landscape, Eastern Sudan**

![Present landscape](image1)

![Desired futures shown by women’s and men’s groups](image2)
The examples of smart-mapping from Eastern Sudan on the previous page were used to explain the different preferences of men and women for the future. In a few years time, it would be useful to come back to the same region or villages to see whether the desired future has really materialised. After a few years it should be interesting to come back and show the drawing of the scenario to the communities and ask them to reflect upon the changes that have occurred. A new drawing could be made to compare the current situation, the desired future and the actual change that happened.

- **Capital assets framework**

When monitoring using drawings, important elements in livelihoods and in the landscapes are identified and can be given scores from 1 to 5 each year. The easiest way is to regroup different elements into several categories, for example: natural assets, human assets, social assets, economic assets, governance assets, etc. These elements will change from one place to another and a lot will depend on the exact objective of evaluation or monitoring.

In the example on the next page, the elements identified by the communities are grouped in the capital assets framework (human capital, social capital, natural capital, built capital, financial capital etc). The method is useful in measuring, monitoring and communicating the nature of the changes in a landscape over time. WWF has used an approach called LOAM (Landscape Outcome Assessment Methodology) (Aldrich, 2007). LOAM uses the Capital Assets/Sustainable Rural Livelihoods Framework of Carney (1998) and Flora & Flora (2008). This is based around 5 assets – natural, human, physical (or built), social, and financial (or economic). These assets are identified through a participatory process which allows the identification of a small representative set of locally appropriate indicators grouped under each of the 5 assets. This scoring system can then be kept as a baseline for monitoring changes over the years. The radar diagram on the next page shows 5 different villages along the Malinau river in East Kalimantan and the different elements that were important in the landscape and the links to people’s livelihoods.
These values were linked to the drawings that had been made previously with the communities and were ranked according to whether they were: + important, ++ more important, +++ very important etc.

- **Indications of what people already have and how happy they are with their present situation**

The easiest way to monitor what has changed in people’s livelihoods is to make a list of valuable things and important elements in their lives. The capital assets framework can then be used for visual monitoring with the participation of local communities. Here are some examples:

- Use coloured dot stickers or coloured pens to distinguish groups (NGOs, communities, government agencies, private companies etc) and use pockets for them to place their votes. You can use simple cloth sheets with pockets on them into which the people can put their votes – this allows people to express their opinion without being subject to pressure from other people present – it allows for confidentiality.
• Vote by putting your token into the appropriate pocket.

• Use drawings to evaluate biodiversity and livelihoods.
• Count the number of bars when each member of the community has made a list of different things of value to them. As example: A = family Alpha, B = family Bravo, C = family Charlie etc.

![Image of a chart with bars and icons]

• **Develop a theory of change for the landscape**

A “Theory of change” is used to understand drivers of change in a landscape so actions can be identified to minimize negative changes and achieve positive changes.

• Try to understand the contributing causes or reasons for a particular problem or issue, or to identify effects or impacts of a particular change.

• Try to illustrate and analyze the consequences (positive and negative) of particular issues or actions using drawings and diagrams

• Try to understand the external factors that could influence or impact positively or negatively on achieving the desired scenario.

• This theory of change is then used to help design the actions that are needed to arrive at the desired future condition or scenario.
It is important to understand the importance of seasons of the year and their influence on people’s activities and on where and how they work.

<table>
<thead>
<tr>
<th>Month</th>
<th>Activities</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>June</td>
<td>Planting seedlings</td>
<td>Rainy season</td>
</tr>
<tr>
<td>October</td>
<td>Harvesting sorghum, millet and hibiscus</td>
<td></td>
</tr>
<tr>
<td><strong>If there is Water</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>Working the garden and planting other trees</td>
<td></td>
</tr>
<tr>
<td>March</td>
<td>Harvesting the garden</td>
<td></td>
</tr>
<tr>
<td>April &amp; May</td>
<td>Sewing and making clothes using cotton</td>
<td></td>
</tr>
<tr>
<td><strong>If all going well</strong></td>
<td>Selling in Bore market. Income will increase</td>
<td></td>
</tr>
</tbody>
</table>

For further information on theory of change, you could look on the website:
- Act knowledge and the Aspen Institute Theory of change:
- Ford Foundation Mapping Change Using a Theory of Change to Guide, Planning and Evaluation:

**Action Planning**

The understanding that is generated by all of these visual techniques can be used to help people to develop their own action plan to bring about change. The visual images can help to identify problems, specific tasks, resources, activities, timetables and responsibilities required to achieve a particular goal or objective. Some examples follow on next page.
<table>
<thead>
<tr>
<th>masalah</th>
<th>solusi</th>
<th>aktifitas/kegiatan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pencarian sumber daya hutan berbagai jenis krim pembalut sawit</td>
<td>1. Menanam tanaman yang menarik</td>
<td>1. Informati penjualan</td>
</tr>
<tr>
<td>2. Pencarian beras rutin pada perusahaan masak</td>
<td>2. panen, cengkeh</td>
<td>2. Kesepakatan antara pemerintah dan masyarakat</td>
</tr>
</tbody>
</table>
Examples of action plan:

<table>
<thead>
<tr>
<th>Problems</th>
<th>Solutions</th>
<th>Activities</th>
<th>Resources</th>
<th>Who &amp; When</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inundation in garden</td>
<td>Organize drainage</td>
<td>Make drain</td>
<td>Village budget</td>
<td>All men – Sept.</td>
</tr>
<tr>
<td>Need firewood</td>
<td>Need trees</td>
<td>Plant trees close to houses</td>
<td>Logging company</td>
<td>All community – Oct.</td>
</tr>
<tr>
<td>No buyer for NTFP</td>
<td>Need distribution system</td>
<td>Create a cooperative</td>
<td>Community members</td>
<td>All community – Oct.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities we have in our landscape</th>
<th>Problems we face in our landscape</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1.</td>
</tr>
<tr>
<td>2. etc.</td>
<td>2. etc.</td>
</tr>
</tbody>
</table>

What are some of the solutions we have (or might have)

1.
2.
3. etc.

Who are some of the main stakeholders in our landscape

a).
b).
c). etc.
Tips for interviews:

• Look for ideas that make people interested in joining the working group
• Be nice to people and smile
• Don’t look stressed - relax
• Don’t be too rigid and don’t tick boxes or fill in forms
• Talk slowly
• Get as much information as possible while talking with people in an informal manner
• Use the 5W and 1H questions: what, why, who, where, when and how
• Don’t give them the answer to your questions
• Don’t make assumptions
• Bring some small gifts to start connecting with people (drink tea or coffee with them, have a biscuit, candies for kids, etc)
• Explain clearly why you are there
• Listen to their concerns and don’t come with solutions
• Accept and embrace errors and share experiences
• Don’t dominate the process
• Do not interrupt or interfere (give time for people to think and discuss)
• Try to obtain opinions from all groups of participants
• Be sensitive to cultural differences
• Know the speed to advance – don’t rush
• Remember that people have other priorities – children, agricultural crops to take care of, they have work to do, etc.
• Meet people when it suits them
When facilitating meeting or workshop, you should always bring with you some basic materials.

- Flip charts / large size papers
- Coloured Pens
- Coloured Cards
- Coloured sticky Dots
- White or Blue tak
- Tape / sticky tape
- Post-it
- Beamer and spare bulb
- Adaptor
- Power cables
- Scissors
- Camera / video camera
- String
- Tape
- GPS
- Small gifts for kids and participants of the workshop

**Things that are useful for any participatory exercise and especially for landscape scenarios visualization exercises:**

- Coloured pens
- Papers / flipcharts
- Coloured papers/cards
- Adhesive tape
- White or blue tack
- Coloured dot stickers
- Post-it
- Scissors
- Pushpins
Use the equipment check list

Arrive at least 24 hours early

Ice breaker – use analytical game and round table introductions: go around the table and get each succeeding person to introduce by name all of the preceding persons – so you start with “I am Intu, this is my friend Jeff” … etc.

Set agenda for guidance but remain flexible – post the agenda on a flip chart

Establish a process group – to meet periodically to provide feedback to the facilitator on progress

Have staff support for logistics, finance, tickets etc

Allocate tasks – give people a role – let them chair and report

Be clear on overall objectives but flexible on how to get to them

Minimize time in large plenary discussions – divide into groups

Allow table discussions for 15 minutes to open up issues

Keep break-out groups small and change the composition each time

Alternate between groups of similar stakeholders and groups with diverse stakeholders

Use SWOT (Strengths, Weaknesses, Opportunities, and Threats) to get discussions started – for example: red cards for threats and green for opportunities

Cluster cards and use dotmocracy

Use these exercises to get people moving around

Use historical trends exercises

Use Google Earth – preferably online

Keep and photograph all flip charts etc

Use “affirmative action” to ensure full participation of minority groups, women, children etc

Make sure that everyone is involved and engaged – encourage the shy ones

Welcome disagreement and diversity of views

At each break – coffee, tea, lunch etc – recap and tell them what will happen next

Organize social events for bonding and fun – walks, excursions, cultural activities, and local meals.
Useful website for participatory methods:
• http://www.planotes.org/index.html a series of techniques for participatory learning and action from IIED
• http://www.ifad.org/evaluation/guide/index.htm for monitoring and evaluation guidelines from IFAD
• http://www.iucn.org/about/work/programmes/forest/fp_resources/fp_resources_publications/fp_resources_specials/?5/arborvitae-special-issue-Learning-from-Landscapes for articles on learning from landscapes from IUCN
• http://www.profor.info/profor/node/3 for poverty-forests linkages toolkit from PROFOR
• http://www.ppgis.net/pgis.htm for participatory GIS network and participatory mapping from PPGIS
• http://www.iapad.org for Integrated Approaches to Participatory Development
• http://insightshare.org/ for participatory video from Insight Share
• http://www.iisd.org/cristaltool/ for community-based tool on climate change adaptation and risk reduction from IISD
• http://data.worldbank.org/ for data on the world at glance from World Bank
• http://www.fao.org/docrep/W3241E/w3241e09.htm for Rapid Rural Appraisal (FAO)
• http://www.eldis.org/manuals/participation.htm for different manuals and toolkits for practitioners

Information available on the internet:
• Information on Appreciative Inquiry can be found on URL: http://appreciativeinquiry.case.edu/intro/definition.cfm
• Insights into participatory video: A handbook for the field (Nick and Chris Lunch, Insight), online URL : http://insightshare.org/resources/pv-handbook
• Participatory Mapping and Communication : A guide to developing a participatory communication strategy to support participatory mapping (IFAD), online URL: http://www.ifad.org/pub/map/pm_iii.pdf
• Participatory Rural Communication Appraisal: A handbook (FAO), online URL: http://www.fao.org/docrep/008/y5793e/y5793e00.htm
• Arborvitae special on Learning from Landscapes, online URL: http://cmsdata.iucn.org/downloads/a_avspecial_learning_from_landscapes.pdf
• Community based adaptation to Climate Change, URL: http://pubs.iied.org/pdfs/14573IIED.pdf
• Decentralisation and community-based planning, URL: http://pubs.iied.org/pdfs/9312IIED.pdf
• Empowered participation - stories and reflections, URL: http://pubs.iied.org/pdfs/14562IIED.pdf
• Mapping for change: practice, technologies and communication, online URL: http://pubs.iied.org/pdfs/14507IIED.pdf

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