Increasing environmental awareness using comic-style illustrations as a visual communication tool (Madagascar)

**DESCRIPTION**

Communicating and transferring scientific results and recommendations about sustainable land management to local people

Aims / objectives: The central aim of this approach was to increase environmental awareness in the Mahafaly region of southwestern Madagascar using visual communications tools. Comic-style illustrations were originally designed to communicate scientific recommendations on sustainable land management (SLM) and to ensure knowledge transfer from scientists to local people.

Methods: Visual communication, based on pictures, drawings, movies, sequential images and posters plays a vital role in countries where many people are illiterate. Another advantage is its easy reproduction in comparison to oral communication. It may also transfer knowledge where oral communication fails because of linguistic barriers or simply because complex narratives and messages are easier to explain visually than orally. In the context of a participatory research project to support SLM on the Mahafaly Plateau in southwestern Madagascar, comic-style illustrations of visual narratives were used to focus on environmental problems and SLM strategies. Since cross-cultural differences arise in “visual languages” globally, the visualization style needs to be carefully selected. Furthermore, misunderstanding of visual narratives may occur when objects are drawn not realistically enough, or if the statement is abstract or only presented from a scientific The central aim point of view. To avoid misinterpretation and increase readability and local acceptance, the style of comics was specifically designed for the conditions in rural Madagascar using a traditional Malagasy art style (sepulchre art in the form of “Aloalo” tomb sculptures). Comic illustrations were prepared to show the impact of different land use practices on the environment and local livelihoods using two contrasting stories/scenarios. The “red story” depicts a worst case scenario of unsustainable practices that are often applied by local inhabitants and the “green story” shows an example of a best case scenario based on an alternative, sustainable land management option recommended by scientific experts. To keep the stories simple and understandable, there was a focus on scientific key messages which can be easily transformed into visual narratives - and technical details were left aside.

Stages of implementation: The six year (2011-2016) transdisciplinary research consortium of Malagasy and German universities was initiated in the Mahafaly region of southwestern Madagascar in order to support sustainable land management (SuLaMa = Sustainable Land Management in southwestern Madagascar). Based on scientific research regarding the diversity and local use of forest resources and SLM practices in animal and crop husbandry, key messages and recommendations, which were easy to implement, were formulated by the scientific experts. Two examples of overused natural resources and one example of a neglected soil improvement practice were chosen for comic-style illustrations and transformed to visual narratives. These are (i) sustainable harvesting practice of wild yams (Dioscorea bemandry); (ii) composting of manure and its application to improve soil fertility and yields in home gardens; and (iii) sustainable utilization of the succulent tree Euphorbia stenoclada (called ‘samata’ in the local dialect) as supplementary forage for livestock. During an inception phase for the implementation of visual narratives in the study region, different drawing styles were used.

**LOCATION**

Location: Toliara II, Atsimo-Andrefana (South-West Madagascar), Madagascar

Geo-reference of selected sites: n.a.

Initiation date: 2015

Year of termination: 2016

Type of Approach: traditional/indigenous; recent local initiative/innovative; project/programme based
tested and assessed to gather information on the local perception of art. Drawing styles showing the highest acceptance rate and readability were subsequently used to prepare the comics. The comics were printed on robust clay coated paper and handed out to local inhabitants during larger village workshops, where the different stories were presented and discussed.

Presentation of a storyline on the use of composted manure for home gardening during a village workshop (K. Brinkmann)

Distribution of comics on the subject of sustainable yam harvesting to the local population (K. Brinkmann)

APPROACH AIMS AND ENABLING ENVIRONMENT

Main aims / objectives of the approach

The Approach focused mainly on SLM with other activities (sustainable land use, livestock husbandry, crop production, yams).

Comic-style illustrations were designed for environmental education purposes to communicate scientific results and recommendations on sustainable land management and ensure knowledge transfer from scientific experts to local people. It is the general aim of the approach to raise awareness for sustainable land use and environmental protection and therefore to improve both people's livelihoods and the efficiency in the use of natural resources.

The SLM Approach addressed the following problems: The approach area is characterized by low agricultural production, a lack of technical knowledge, low education level and conflicts over resource use.

Conditions enabling the implementation of the Technology/ies applied under the Approach

- **Social/ cultural/ religious norms and values**: People in the project area have a cultural reservation towards the utilization of animal dung, thus renouncing one of the fundamental principles for soil amelioration. At the same time, the declining of handling the animals’ feces and therefore hardly ever cleaning their night enclosures strongly increases the risk of epizootic diseases and parasite infections. Treatment through the SLM Approach: The comic drawings attempt to demonstrate how simple measures may have a sustainable impact in improving people's livelihoods in many ways. They will at best be food-for-thought to reconsider culture-based practices that are not good SLM practice.

- **Legal framework (land tenure, land and water use rights)**: With regard to the sustainable utilization of fodder trees, land ownership conflicts may arise as most of these trees around settlements stand on private ground – but without clear demarcation. Treatment through the SLM Approach: Where currently there only exist single cactus plants or other hardly recognisable natural markings between plots, clear boundary lines between those plots could be illustrated as a good alternative in the respective comic. The existing land ownership, land use rights / water rights hindered a little the approach implementation. Some contents presented in the comic drawings, such as on the sustainable utilization of fodder trees, can conflict with land ownerships as most of these trees around settlements stand on private ground. Boundary lines between these plots, often only consisting of single cactus plants or other natural markings, may not be recognizable for outsiders but have to be included into the comics to avoid misunderstandings.

- **Workload, availability of manpower**: Local people often do not see a direct benefit from higher workload e.g. by a more careful harvesting of forest products, the cleaning of livestock enclosures, or the utilization of manure for soil amelioration. Treatment through the SLM Approach: The approach aims to show plainly the positive and sustainable impact of the alternative practices and the effect on people's livelihoods.

- **Other**: The concept of some natural resources being finite is not very widespread among the local population. Treatment through the SLM Approach: The approach may help local people to become more aware of this problem and to induce the establishment of more sustainable land use practices.

PARTICIPATION AND ROLES OF STAKEHOLDERS INVOLVED

Stakeholders involved in the Approach and their roles
What stakeholders / implementing bodies were involved in the Approach?

<table>
<thead>
<tr>
<th>Specify stakeholders</th>
<th>Describe roles of stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>local land users/local communities</td>
<td>Crop and livestock farmers</td>
</tr>
<tr>
<td>NGO</td>
<td></td>
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<tr>
<td>local government</td>
<td>municipality, village</td>
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<tr>
<td>national government (planners, decision-makers)</td>
<td></td>
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<tr>
<td>international organization</td>
<td></td>
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</tbody>
</table>

Involvement of local land users/local communities in the different phases of the Approach

- **Initiation/ motivation**: Data surveys, questionnaires, group discussions
- **Planning**: Village workshops to present the comics and to explain the storylines.
- **Implementation**: Stepwise evaluation and improvement of comic understanding and acceptance by land users and the community
- **Monitoring/ evaluation**: 
- **Research**: 

Flow chart

Extracts of three storylines on (i) yams harvesting, (ii) manure composting and (iii) the utilization of ‘samata’ (Euphorbia stenoclada)

Decision-making on the selection of SLM Technology

- Decisions were taken by:
  - Land users alone (self-initiative)
  - Mainly land users, supported by SLM specialists
  - All relevant actors, as part of a participatory approach
  - Mainly SLM specialists, following consultation with land users
  - SLM specialists alone
  - Politicians/ leaders

- Decisions were made based on:
  - Evaluation of well-documented SLM knowledge (evidence-based decision-making)
  - Research findings
  - Personal experience and opinions (undocumented)

TECHNICAL SUPPORT, CAPACITY BUILDING, AND KNOWLEDGE MANAGEMENT

The following activities or services have been part of the approach

- Capacity building/ training
- Advisory service
- Institution strengthening (organizational development)
- Monitoring and evaluation
- Research

Capacity building/ training

- Training was provided to the following stakeholders:
  - Land users
  - Field staff/ advisers

- Form of training:
  - On-the-job
  - Farmer-to-farmer
  - Demonstration areas
  - Public meetings
  - Courses

- Subjects covered: 

Wocat SLM Approaches, Increasing environmental awareness using comic-style illustrations ...
Advisory service

Advisory service was provided
- on land users' fields
- at permanent centres

Institution strengthening

Institutions have been strengthened / established
- yes, greatly
- yes, moderately
- yes, a little
- no

At the following level
- local
- regional
- national

Describe institution, roles and responsibilities, members, etc.

Further details
Local schools can be equipped with material and practical training courses can be developed with the collaboration of teachers, village chiefs and elders.

Type of support
- financial
- capacity building/ training
- equipment

Monitoring and evaluation

Technical aspects were regular monitored by project staff through observations; indicators: Data on land use practices were collected. Technical aspects were regular monitored by project staff through measurements; indicators: Data on human well-being and social conventions (customs, traditions, rituals) were collected. Socio-cultural aspects were regular monitored by project staff, land users through observations; indicators: Comics were distributed to land users and discussed with representatives of 15 villages. No. of land users involved aspects were ad hoc monitored by None through observations; Evaluation aspects were ad hoc monitored by project staff through observations; indicators: evaluation of understanding and acceptance of comics. There were several changes in the Approach as a result of monitoring and evaluation: The understanding of the comics, their acceptance and the possible implementation of the land use approaches still have to be investigated during a follow-up evaluation process. There were few changes in the technologies. This still needs to be investigated during the evaluation process. There were few changes in the Technology as a result of monitoring and evaluation: This still needs to be investigated during the evaluation process.

Research

Research treated the following topics
- sociology
- economics / marketing
- ecology
- technology

Research was carried out on-farm

FINANCING AND EXTERNAL MATERIAL SUPPORT

Annual budget in USD for the SLM component
- Precise annual budget: n.a.

Approach costs were met by the following donors:
- government (German Federal Ministry of Education and Research (BMBF)): 100.0%

The following services or incentives have been provided to land users
- Financial/ material support provided to land users
- Subsidies for specific inputs
- Other incentives or instruments

Financial/ material support provided to land users

- Partially financed
- Fully financed

Drawing material (pens and paper)

Labour by land users was
- voluntary
- food-for-work
- paid in cash
- rewarded with other material support

IMPACT ANALYSIS AND CONCLUDING STATEMENTS

Impacts of the Approach

Did the Approach improve issues of land tenure/ user rights that hindered implementation of SLM Technologies?
This still needs to be investigated during the evaluation process.

Main motivation of land users to implement SLM

Sustainability of Approach activities

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CONCLUSIONS AND LESSONS LEARNT

Strengths: land user's view
- Structured surveys carried out after the distribution of the material showed that local people understood and generally accepted the comic stories.

Strengths: compiler's or other key resource person's view
- This approach has great potential for communication of any knowledge not only scientific. It should be further supported and widely used especially in rural areas with low literacy but not only there. Pictures have a great impact on peoples' perception and messages can be easier memorized.
- The more the pictures correspond with reality, the better is the "readability" and identification. The fewer the needless details shown, the better the recognition.
- The environmental education material offers various possibilities of application, e.g. in schools or during village meetings. It can be used by the local communities over a long period of time.
- As soon as an appropriate illustration style is found, various topics can be supplemented and more complex subjects can be depicted in greater detail. Individual comic strips may form the base for a more comprehensive but well understandable and adoptable compendium.

Weaknesses/ disadvantages/ risks: land user's view → how to overcome
- Considerable investment and preparation is needed to implement comic-style illustration methods. Comic strips have to be provided in sufficient volume and quality, as reprinting is too expensive for local communities.
- In-depth knowledge and understanding of local traditions and practices is mandatory as apparently minor (incorrect) details and finesses may hamper the comprehensibility and acceptance of the comic strips.
- The design of comics that are both comprehensive and convertible by their contents for the local population requires a lot of time consuming preliminary work. If available, local artists and organizations should be called in and involved into this process to make sure, at the same time, that the approach can be carried on and developed by local stakeholders.

REFERENCES

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Full description in the WOCAT database
https://qcat.wocat.net/en/wocat/approaches/view/approaches_2545/

Linked SLM data
Technologies: Sustainable propagation of the fodder tree Euphorbia stenoclada (“samata”)

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- Sustainable Landmanagement in south-western Madagascar (SuLaMa / GLUES)
Key references

- Feldt, T., 2015. Interrelatedness of grazing livestock with vegetation parameters and farmers’ livelihoods in the Mahafaly region, southwestern Madagascar. 