A participatory review of existing guides in eastern Bolivia and North-East Brazil

Field Guides Project: Working Paper 1a Findings
*   Working Paper 1b discussion of methodology*

[**NOTE** this document was not finalised, but instead used as a basis for internal discussion of the research methodology]

CONTENTS

1   Background to the project

Plant guides that help us to identify or find out more about a defined group of plants, can have important roles in conservation and rural development. If biodiversity is to be valued, conserved and used more effectively, it is important that a wide range of people should be able to identify the taxa, and learn more about them, either by linking with scientific knowledge or documenting and enhancing local knowledge.

There is now great interest in producing guides in areas of high biodiversity in developing countries (see e.g. [Whitten, 1996 #1]). In many cases, botanists want to produce guides to help other botanists identify species in areas that they are studying. In other cases, they want to enable other users, such as tourists, extension workers, community development workers or farmers, to identify or learn more about the species. Other guides are produced not by botanists but by people working more closely with the communities – the extension workers or NGO staff themselves.

Both scientific and more development-orientated authors have valuable contributions to make. Botanists know the species well, but they may produce guides that are difficult to use (because they do not know the users well). Conversely, community workers know the users well, but may produce guides that contain scientifically inaccurate information.

The Field Guides Project (see box 1) is working to find out how to produce accurate, useful and usable guides. To identify the best methods for developing guides, the project draws on diverse experience and methods (PRA, botanical and ethnobotanical techniques, communication studies, impact assessment, and evaluation of training and identification materials).

> **Box 1: What is the Field Guides Project?**
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> The Field Guides Project in fact consists of two research projects running in parallel for three years, but we refer to a single project to emphasise the shared aims and outputs. Together we aim to find more effective ways to develop and write user-friendly plant field guides. This work will help a wide range of people, particularly (but not e`xclusively) in tropical countries, to identify and learn more about particular groups of plants. The **process project** is working in South America and focuses on the processes involved in developing a guide, while the **technical project** is working in Africa and the Caribbean and focuses on technical aspects of plant identification. Both projects contribute jointly to our main output: a manual which will detail a range of methods for developing plant guides, illustrate options through case studies, and provide key information to help authors. The completed manual will be ready by September 2002.

Our challenge is to review, test and compare methods for developing guides that, by linking scientific and local knowledge, will be accurate, useful and easy to use. Potential user groups for plant guides are wide-ranging, varying according to specialist knowledge, ways of communicating, and levels of formal education. For this reason there are botanists, agronomists, communication specialists, foresters, development and extension workers collaborating in our research who, between them, offer wide experience in linking biodiversity of forests, and information about that biodiversity, with rural development.

This paper reports on the first task of the process project, in Brazil and Bolivia: to find out what guides have been produced in the study areas, learn about the different ways in which the authors have written and presented the information, and find out users' views on the guides. The aim of reviewing the existing guides is not to criticise

previous efforts, but to learn as much as possible from the experience of authors and users. Because the word 'guide' has several meanings, we were careful to define it for the purposes of this project (box 2). The project focuses on plant guides, but in our review we included some animal guides so that we could learn from users about a range of methods for presenting information.

The review will make a valuable contribution to the next steps of the project: planning, writing and testing user-friendly plant guides, learning from this experience, and writing a manual for the production of guides. While an important objective of our research is to support rural communities (forest users and farmers) in improving their livelihoods, either directly or indirectly, we recognise that the information contained in guides may not be best produced for the use of rural communities but rather for intermediaries. In fact we intend our manual to be useful to all producers of plant guides, by focusing on the process which they should follow, in order to make sure that the guide will suit the objective of the author and users, and the needs and abilities of the user group for which it is intended.

> **Box 2. Project definition of a plant guide**
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> The word 'guide' can be understood in many different ways. Just as the content of guides varies according to objectives, purpose and target user group, so the concepts and expectations of guides vary between user groups and can sometimes be much broader than our own.
>
> Our project focuses on the ways in which plant *identification* can help in conservation and development, so we have adopted the definition of a guide as
>
> '*materials that enable the user to identify and/or learn more about different species of flora*'.
>
> We are focusing on *plant* guides in this project; animal guides will have different technical requirements but the social processes involved in preparing them will be similar to those for plant guides.

2   Methodology for the review

The ultimate test of a successful field guide is whether it is used, for the purpose which the author intended, by the people for whom it was intended. This success will depend on the guide's 'usability', or fitness for purpose. The design of usable material may need to take account of potentially conflicting criteria (Wright, 1979). For example, information must be scientifically accurate yet comprehensible to a range of users with different literacy levels, and often with different language needs. In the case of field guides this challenge is compounded by the need for plants to be visually presented in ways which make recognition and identification possible.

The needs of the <u>users </u>are central to the processes required to produce usable and useful guides. Our review was based around the central research questions:
- Who is using which guides?
- What are they using them for?
- How does this compare with the author's intended uses?
- What aspects of the content make them useful?
- What aspects of the production process make them useful?

To do this, we researched the needs of users by referring to existing guides, in interviews with a range of user groups and authors of guides, either individually or in workshops. We were interested in finding out more about both the production processes and the content of different guides, and we researched these in different ways.

Interviews with authors enabled us to learn more about the *processes* which they have used in the writing and production of guides. Our discussions focused on:

- Targeting user groups and / or identifying demand
- Species selection
- Botanical accuracy
- Sources of information
- Choice of format and pre-testing field guides

Both authors and users were involved in the assessment of the usability of *content.* We developed structured activities and interviews around the content and presentation of the information. The aim was to find out what people like, or don't like about the guide, and why; and also to hear their suggestions for how it could be improved. To make sure that we covered all aspects of the guide's content and format, we identified **four key aspects** to focus on, during these interviews and workshops:

1. *Access systems:* that is tools which help people to find the information in the guide (e.g. keys, indices, leafing through the book to look at illustrations, summary, bibliography, maps, title, etc.);
2. *Illustrations*: the way in which plants are displayed in the guide (e.g. drawings and photos, part or whole plants in the guide);
3. *Verbal information:* e.g. language, themes, ease of understanding the information etc.);
4. *Physical aspects:* the size, weight, durability, quality of the materials, suitability for field use etc.

Step-by-step descriptions of the methods used, are available from the authors of this working paper.

3   An overview of guides produced in the study areas

In order to begin our review, we had to find out what guides had been produced in each of the two research areas. Of course this is not an easy task and we cannot be sure that our lists are complete; however the project is in the process of producing an inventory of guides in both areas. Through workshops, seminars and project publicity, the project team has become aware of far more guides than we had originally thought existed. Many of these do not fit into our original specific definition of a guide as material that enables the reader to identify and/or learn more about different species of flora and fauna, and it has therefore been important for us to learn more about how people understand the term 'guide'.

Our own lack of awareness of some of these guides is reflected in other people's surprise at the number of guides produced, and we came across at least one case where two different sets of authors were finalising guides to the same type of vegetation, for the same audience. It does seem that guide production is not always accompanied by strong publicity, and furthermore that authors lack opportunities to communicate with each other and share experience.

4   Choosing the sample for review

4.1   User groups who participated in the review

The project teams identified a wide range of user groups from which to select individuals and groups for inclusion in the review of guides. These are summarised in table xx.

In Bolivia, a brainstorming session identified various user groups (see Box 2). Respondents were selected according to this list of user groups in order to understand the varying needs and priorities in relation to field guides. In Brazil, we did not find any guides which were produced explicitly for the use of rural communities, so the list of user groups did not include these more local stakeholders, although some farmers participated in the workshop because they are also community motivators. The sample included more academics and professional botanists than in Bolivia.

Table 1. User groups included in the review

Bolivia	Brazil
Técnicos (foresters and agronomists) /NGO staff and extension workers Indigenous communities Village teachers Village school children Local promoters University lecturers Eco-tourists Guardaparques (forest guards) Forest guides	NGO staff/extension workers Community motivators (some of whom are also farmers) University lecturers Eco-tourists

4.2 Selecting guides for review

Initially we had intended to conduct a systematic assessment of selected guides, by tracing a range of people who had obtained the guides to find out how they use them. However this proved difficult, because we could not find out how guides had been distributed (an aspect which is discussed more below).

Instead we had to take a more open approach, beginning with the users rather than with the guides, and find out which guides respondents know about. The review was then based on those guides. We also assembled a selection of guides which represented a range of formats and user groups, and asked respondents to assess them even if they had not seen them before. In this way we gathered information about a large number of guides, and were able to draw conclusion about both first impressions, and well-known guides.

In Bolivia, the great majority of these guides had been produced either for extension workers, or for community use. In Brazil, the user groups for guides include many more academics and English speakers, so the sample of guides included some used in universities, although there was also a significant number produced for use in rural communities (usually by técnicos).

5 What is a guide for?

5.1 Authors' views

The reasons which authors gave for producing their guides, fall into three categories:

- To motivate action – whether tree cultivation, or conservation through awareness-raising
- To facilitate identification and hence biological surveys and ecological studies
- To document information (local and scientific) about species.

Implicitly, the first of these reasons was the most common. The oldest guide reviewed in Bolivia, '*Guia para uso de árboles en sistemas agroforestales para Santa Cruz, Bolivia*', was written in order to encourage increased planting of native tree species. Similarly, an international forest management project (BOLFOR) has funded the production of '*Guias de especies menos conocidas* '[guides to lesser known species] to provide information about a wider range of potential timber trees, thereby helping communities and individuals fulfil requirements the of the Forestry Law (1996) and its '*normas tecnicas'* or technical guidelines.

Like most of the guides reviewed, forestry and agricultural specialists produced these in response to the needs which they perceived. In only two cases did we find guides which had been produced either by the users themselves, or directly in response to demand from the users. The Confederación de Pueblos Indígenas de Bolivia (CIDOB), supported by a DFID-funded project which provides funds for indigenous groups to define and carry out research, chose to produce guides to useful plants, in order to document their own knowledge. Their guides have not yet been published, as the authors are not certain that such publication will benefit them and protect their intellectual property. Also recently produced, *Arboles y arbustos para sistemas agroforestales en los Valles Interandinos de Santa Cruz, Bolivia*, was written in direct response to requests from foresters and agricultural extension workers based in the Andean foothills of Santa Cruz. They wanted to know more about the native tree species in that region so that they could encourage farmers to plant them, and use them in their own reforestation schemes.

The number of professional biologists and academics is much greater in Brazil than in Bolivia, and consequently there was a greater emphasis in Brazil on the production of guides to help in identification. Academic authors reported that their principal reason for writing guides was that they required them in their own work.

A common theme amongst author respondents was not what motivated them to write guides, but what stopped them. Academics cited official academic evaluation methods as a key reason for the low production of guides by academic institutions. Currently, production of guides is not recognised as a measure of academic performance. Rather, the performance and salaries of academics are strongly linked to the number of publications in scientific journals. One academic respondent expressed the opinion, not shared by others, that writing field guides is not an intellectual or original exercise and therefore is not highly valued.

Box 5: An example of privatised guide production in Brazil.

Harri Lorenzi is the author of Árvores Brasileiras, now in two volumes, a large format, well illustrated guide with high quality photos. It is popular among both middle-class people with an interest in nature, and academics / botanists who rely on them in the absence of more complete guides. Lorenzi is the director of a private research institute, Plantarum, which is funded through the sale of guides. The proceeds of book sales alone now fund employment of four scientists.

However, it is possible to produce guides which make a profit, if directed at a user group which can afford to pay for it (see box 5). This is much more feasible in a country with a substantial relatively wealthy population such as Brazil.

5.2 Users' views

It was important to establish at the beginning of interviews or workshops, what kinds of guides we were interested in reviewing. The word 'guide' has a range of meanings in all three languages used by the project (English, Portuguese and Spanish) and in particular there is confusion between guides to identify plants, and methodological guides or manuals, which explain how to carry out certain activities (such as guides to soil conservation practices). Furthermore the word 'guide' can refer to a book, or to a person; especially when talking with farmers and forest users we found it was important to clarify this.

Although almost all users described plant guides as practical tools, we found that most guides are used as reference books to gain more information about species that are already known by name. Many respondents were not familiar with the use of field guides for species identification. In Bolivia, none of the respondents said that they used any of the guides for identification in the field, but instead tended to use them for occasional reference purposes in the office, either to check up on a detail or to find out more information about a plant for which they knew the common or scientific name. The only group who specifically mentioned a need to be able to identify species were the park wardens in a national park in Bolivia, who wanted to be better able to inform visitors to the park.

In Bolivia there are very few identification guides which are practical for use in the field by biologists. Bolivian institutions conducting botanical surveys often rely on local experts ('*materos*') to identify plants by their common name, and where there is doubt, send samples to the herbarium for taxonomic identification.

In Brazil, by contrast, the academics who participated in the survey emphasised the need for good identification tools, and noted that their work (both research and teaching) was held up by the lack of such tools. Guides are also seen to offer a level of support and security underpinning their users' work. They also noted the importance of guides in bringing together information about biodiversity, which is currently difficult to obtain, being scattered or restricted to theses and libraries. Guides can play an important role in conservation by bringing this existing information together.

Finally, it was common for Brazilian respondents to describe guides as catalysts which awaken and motivate interest, and stimulate change, particularly when talking about guides produced for ecotourists and city people exploring the countryside at weekends.

In both countries it is common for community members to say that they do not need guides for species identification, as they already know the plants, although the indigenous groups in Bolivia felt that young people would be an ideal target audience for such materials, as they are losing this knowledge. It is a great concern to older community members, that those educated outside the communities have less knowledge of plants and animals since they have not had the opportunity to learn from older village members.

5.3 Overview of objectives of guides

Authors generally intended their guides to help as identification tools, and to motivate users to plant or protect particular species. Neither of these objectives are recognised explicitly by most users, except professional biologists. Instead, the review showed that guides are used for three main objectives: to confirm the identity of particular plants or animals, to find out more about particular plants or animals, and as reference works to check scientific names or details such as flowering or fruiting season. Other than professional biologists, users very rarely used any detailed botanical description of the plant in question, and were unlikely to regard their plants as 'difficult' to identify; many assumed that they already knew the plants and merely wanted to check the name (local or scientific) before finding out other information about that plant.

Clearly this is a valid and useful function for a guide, but the review shows that much guide production is overlooking the significance of accurate identification and correct scientific name. Both study areas have extraordinarily high biodiversity, much of which ahs not been studied taxonomically, or where it has, results have not been disseminated, so it is highly likely that species are being mis-identified, or are being linked to incorrect scientific names (see box xx). This may not be an important point for local users who never move out of the area they are familiar with, and who indeed may be the first to alert taxonomists to the existence of hitherto undocumented diversity.

6 Processes used in the development of guides

In this section we discuss the ways in which authors had produced their guides, in order to make them suitable for their intended users and objectives.

6.1 Targeting user groups and identifying demand

Probably the first decision to be made in producing a guide, is who and what it is for. These decisions should affect the choice and presentation of content and the ways in which the produce is tested and disseminated. Most of the authors interviewed for this review recognised the need to target guides to specific user groups, although in Brazil there was a clear difference between academic authors and extensionists. The academics (professional biologists) felt that it should be possible to produce guides which could be used by a range of users, but extension workers and community facilitators felt that the different needs of their own profession, and rural communities, were underestimated, and that it was essential to produce separate guides specifically for rural development purposes. NGO staff in particular consider that guides should be thematic, focusing separately on such areas as medicinal plants, timber and forage.

Some of the NGO staff interviewed in Bolivia highlighted the importance of schoolchildren as an appropriate target group, if the purpose is to change behaviour and attitude towards natural resources. It is important that such guides be accessible to both teachers and pupils, and any guide for children should be combined with a programme of practical demonstration activities. Similarly, CIAT staff (government forestry researchers) said that guides produced for farmers should be supported by other extension activities.

6.2   Species selection

There are two main approaches to deciding which species should be included in a guide: authors of guides either define a geographical area where they want to work, and then aim to be as complete as possible, in botanical and geographical terms, or focus on a user group and a subset of 'recommended' or 'useful' species for that group. For example, species selected for *Guia para uso de árboles en sistemas agroforestales* were the most broadly distributed in the department of Santa Cruz, Bolivia, with the highest economic potential, service and subsistence value.

In fact in many cases it is not clear how species were selected. This is partly because it is common for species to be selected by authors according to what they think the users will want. The authors are acting as experts making recommendations for users. Only the authors of *Guia de especies de uso agroforestal en los valles* attempted participatory selection of species (see box 6). They combined the priorities of farmers with some lesser known species recommended by biologists. The case highlights the need to work within the limits of resources available to the authors, who in this case could not include all of the species they would have liked to.

6.3   Ensuring botanical accuracy

The great majority of the guides reviewed, were written by botanists who had taken care to collect voucher specimens of the plants described, and to check their scientific identity. However, it is quite unusual for authors to document the ways in which they have done this, so that the user cannot tell whether scientific names have been obtained from local herbaria or cross-checked with the latest taxonomic

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Box 6: Consulting guide users about species choice

The authors of *Arboles y arbustos para sistemas agroforestales en los Valles Interandinos de Santa Cruz, Bolivia* documented in their introduction, the ways in which they selected the species to be included.

The authors (botanists and agronomists) decided which geographical area they would be able to include, based on knowledge of the area and its ecology. This area, while broadly similar ecologically, contains four different ecological regions, and to prioritise the species from each ecosystem, the authors visited communities in each region. In the communities they asked men and women to rank the top ten species which they would like to see included in a guide, and from this drew up a prioritised list. Botanists then made additions to the list, to include species which they considered to have great potential for agroforestry but which are not yet well known to farmers. This gave a list of more than 100 species, so the 30 lowest priority species were taken off the short list, to produce a guide within the available budget.

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revisions. While the need for such accuracy is not necessarily appreciated by most users (see above) it can certainly affect the quality of the information in the guide, by incorrectly linking local names to other species with different properties.

In several cases however considerable background botanical work had been carried out, especially where the authors collaborated with international taxonomists. In such cases, the work of producing the guide could itself indicate species new to science; in one case (the production of the *Flora da Reserva Ducke*) the guide was the output of five years and millions of pounds-worth of detailed botanical study. Although none

of the other guides could afford such work, several authors reported that ensuring botanical accuracy was the most time-consuming part of the production of a guide. The authors of *Arboles y arbustos para sistemas agroforestales en los Valles Interandinos de Santa Cruz, Bolivia* had thought carefully about the balance between waiting for the identification of trees to species level, including subspecies, and building in the flexibility to expand the guide in a second edition. They feel that (in such diverse and under-studied areas as Bolivia) a guide must be a working document, that it is acceptable to sometimes include scientific names only to genus level, or to indicate doubt about the number of species corresponding to a certain local name, in order publish guides quickly and facilitate the collection of further information.

6.4   Choice of format and pre-testing field guides

The survey revealed a wide range of formats, types of illustration and use of language, as well as ways of ordering and accessing the information contained in them. In breaking away from traditional formats, many authors had been thoughtful and imaginative in developing new systems.

However in almost all cases, the choice of these options depended entirely on the authors. In a survey which included more than 30 guides, we found only two cases where the authors had tested any part of their guides prior to publication. In both cases, tests were conducted by authors of guides for local users. One, not strictly within the definition of guides for this project, was produced by an ecological NGO in Brazil (SABIA) who asked two farmers to read and comment on an agroforestry booklet before publication. Only one of these was a plant guide (*Arboles y arbustos para sistemas agroforestales en los Valles Interandinos de Santa Cruz, Bolivia*) and even here, only a few drawings had been reviewed by users, to obtain feedback on their clarity. No author reported testing the clarity of accuracy of text, or the accuracy and usability of access systems such as keys and indices. Most authors had not considered pre-testing but agreed that it would be valuable, noting however that it would require relatively large amounts of time and money.

Furthermore there are few opportunities for authors to receive opinions of users after publication. It is rare for guides to elicit feedback from users, and only one guide (to zoo animals) reviewed in Brazil included a user evaluation form.

7   Distribution, access and impact

One of our objectives in conducting this review was to improve our understanding of the impact of field guides, but this proved complicated. Impact is affected by objectives, distribution, and follow-up. Some authors do not clearly elucidate their objectives in writing the guide, and few monitor distribution and use of the guides. There was so little information about the usefulness and impact of field guides, that we have addressed this through developing a new methodology to plan and carry out impact assessment (see Field Guides Project Working Paper 2).

However the study did reveal some important general points about access to guides. Users' access is affected by three kinds of factors: physical; financial; linguistic and educational.

Physical access is constrained principally because guides are usually printed and published in cities; rural users may not even be aware of them. Where they are, and

one copy makes its way to a remote location, it is common for it to be photocopied frequently. Many users resort photocopying guides, which can make them difficult to use due to the poor quality of photocopy reproduction of drawings of photos, or to borrowing them from friends. Institutions included in the review do however makes efforts to distribute guides more broadly, because their use in inaccessible places is often a key reason for producing them. Most have lists of institutions to whom they always distribute their publications; and in the case of NGOs, guide production is usually part of a project which covers the cost of printing so that guides can be distributed free to local users, which can overcome some of the financial hurdles. Nevertheless guide production is seen as an expensive activity, and both authors and users invariably commented on this; it is clear that a priority must be comparative costings of different production methods, and their effectiveness in producing useful guides.

Further access problems include the fact that guides are often only printed in low numbers (small print-runs), and that good guides sell out quickly and are often not reprinted. This point links to the priority identified by the authors of *Arboles y arbustos para sistemas agroforestales en los Valles Interandinos de Santa Cruz, Bolivia,* i.e. the need to consider guides as working documents, and produce them in a flexible format which is easily updated, expanded, and reprinted.

Finally the linguistic and educational constraints to accessing guides affect a broad range of users, not only rural farmers and forest users but also técnicos and extension workers. For professional biologists, important guides have still not been translated from English to Portuguese. In the rural development context, even those with a university education commented often that they are 'not in the habit of reading', and pointed to examples of technical terms or illustrations which were confusing for them. Making information intelligible to a range of users groups, is one of the objectives of the Field Guides Project.

8   Usability of existing guides

In order to assess usability, we developed a methodology which ensured that four distinct aspects of a guide were commented on by users. These were: access systems, illustrations, text and physical aspects.

8.1   Access systems

We define access systems as the 'tools which help people to find the information in the guide'; these can include the contents pages, indices, identification keys, icons or coloured margins, as well as the order in which information is presented within the guide. There are also access systems on each page; at this level they include the titles and names which are highlighted on the page, and codes, icons and symbols which help the user to recognise the information he or she is seeking.

These aspects of guides are both extremely important, and often undervalued. The overwhelming message from users is that they must be simple, and it seems that simplicity is more often offered by avoiding well-thought-out access systems, than by ensuring clarity. Even formally educated users are not in the habit of reading, and are unlikely to study long introductions explaining how to use the book; only ecotourists and professional biologists tend to do this.

The title itself may well act as an access system: extension workers and community facilitators often pointed to the name of the book as an incentive to use it. They noted that thematic titles, which indicated the objective of the guide (such as 'Trees suitable for forage in the ....'), were most likely to awaken the curiosity of potential users.

The order in which species are presented in a guide, relates to the aim and target group of the guide and should, ultimately, be decided by consultation with the target user group. For example, guides ordered alphabetically will be difficult to use by those unfamiliar with this concept. Those working with NGOs or communities, felt that a more practical alternative is to present species according to the purpose of the book – in other words, if a guide is focused on plant use then it should be ordered by use, and if it is focused on medicine then it should be ordered by ailment cured. Unless it is aimed at people with botanical knowledge, it should be ordered alphabetically by the most common local name. Those with botanical training feel that it is important to order by family since this ensures that plants with similar characteristics are placed together.

A variety of good access systems should make the order of the species in the guide less important, especially for formally educated users. Nevertheless, even técnicos complained that guides were difficult to use if the species were presented in order of scientific name or family. There was a strong preference for ordering species according to common name, even where users recognised that the existence of various common names for the same species could cause confusion. In several guides which we reviewed, the authors had decided to present species according to botanical family, but had provided indices to the common names; however many users (particularly in Bolivia) seemed to overlook these.

There is even more reluctance to use keys, although this varies according to audience and number of included species. Keys tend to rely on technical language that requires user training. Many academics favoured the presence of keys in field guides for plant species identification but not, however, in bird guides where colour illustrations or photos are preferred. It appears that, apart from professional biologists interviewed in Brazil, users do not generally use the keys in field guides. Instead, users tend to rely on indices, which need to be simple and comprehensive. The more indices there are (e.g. by use, geographic location etc.), the more options there are for access and the less important the order of the plants in the guide. There should be a minimum of two indices, one using local names and the other using scientific names; these different systems will be useful to different groups. However, care must be taken not to make them too complicated as some users may be confused and put off. Page numbers must be clearly presented and larger print may help with ease of use.

In fact instead of using the access systems given, we found that it is common for all users to 'leaf through' (hojear / folhear) guides in order to recognise an already known species or to identify an unknown one. This may indicate a need for greater use of icons and colour codes, such as coloured page margins, to help guide the user around the book. Such access systems are popular in guides published for recreational use in richer countries but we found no examples of their use in Bolivia, and only two in Brazil. One of these is a guide for ecotourists, still in preparation, which presents plants in order of flower colour and uses coloured flower symbols on the page margin to help users find the section which contains those plants. The other is the very complete and complex *Guia da Reserva Ducke* which combines a range of access systems, and which we were not able to test with users.

8.2   Illustrations

Issued raised relating to illustration included:
- Format – whether to use drawings or photos)
- Colour
- Quality and representativeness
- Size and number per page
- Which parts are illustrated
- Indication of scale
- Inclusions of explanatory symbols or text

Preferences varied according to the user group, but there was surprising diversity even with each group, highlighting the importance of consulting with users before preparing illustrations, and testing them with users before publication.

All users consider that illustrations are the most important part of a guide; they aid identification and confirmation of species identify and also make the guide more attractive and easy to read. Where a selection of guides was displayed respondents naturally selected those with more illustrations to examine. Illustrations are particularly important for children and those with little formal education. However it is also recognised that (at least in terms of printing) the illustrations are the most expensive aspect of guide production.

Photos were more popular than drawings with many user groups. Although they are attractive they need to be of high quality, which implies a high cost, and in areas where many cannot afford to buy new books it is important that the format allows for high quality reproduction by photocopying – which is not often the case with colour photos.

By contrast, the majority of professional biologists prefer black and white drawings in plant field guides. In field trials, farmers found drawings difficult to understand, and extension workers suggested that farmers would be confused by drawings including magnified parts of plants (for example, Fatima Agra's book), imagining them to be plant deformations.

Although it was surprising to find that farmers and técnicos could identify trees from poor quality photos this only worked because the users were already very familiar with the trees in question. Furthermore, in the case of guides that rely on photos for identification (particularly *Arvores brasileiras* and …..[Socorro bona])*,* users expressed concern that the specimens selected for photographing were not always typical of the species. The authors agreed with them in some cases, and noted that this would be their top priority for change if they had a chance to upgrade the book. They reported that when putting together the book, they sometimes found it difficult to collect good quality photos of representative specimens, and had to compromise in order to publish the book.

The questions of size of illustrations, and which parts are illustrated, are related. Many respondents admired the format of *Arvores Brasileiras,* which contains six photos for each species, showing the whole tree, leaves, bark, flower, fruit and seeds (see box xx); but such detail and expense is rarely possible for most producers and users. All respondents pointed out the need to show the whole plant however, and felt it was important (where these were trees) to make sure that the specimen selected was typical of that species. Local users (farmers, técnicos, and community facilitators) often found such illustrations sufficient to recognise a plant which they

already know. Others highlighted the need to illustrate those parts which are needed for identification, whether leaves, fruit, flower, stalk, roots, or bark. Many requested the inclusion of images of young plants so that species could be recognised in immaturity. However in most cases where guides had been produced for users other than biologists, the usefulness of such illustrations suffered from a lack of scale (see example in box xx), or a lack of labelling and explanation (see example in box xx).

Text broken up with lots of diagrams and illustrations is more accessible in a culture that is not used to reading. Illustrations should also be explained with simple text and title to avoid confusion.

8.3   Text

Regardless of the importance of illustrations, some text is needed in any guide. This text has two purposes: a) to provide the context for the guide, for example to describe the area in which the plants are found, the need for conservation or importance in local livelihoods, explain why the guide was produced, and / or how to use it; and b) to describe and provide information about each species. The balance between these will depend on the user and the purpose of the guide.

Issues surrounding the usability of this text included:
- The amount
- Language (technical or simple; and English / Spanish / Portuguese or local)
- Content
- Legibility

Although there are is a wide range of related information, of use to varying user group needs and wants, it is important not to try and include too much in one book, as it becomes confusing and overly large. The information should respond to the purpose of the guide and the needs of the target user group. In particular the amount of contextual information must be minimised for users who do not spend much time reading. Many respondents felt the only essential piece of introductory text is a short clear explanation of how to use the book (a component which is in fact lacking in many guides). The exception to this is in guides for ecotourists, who can be expected to have the time, education and interest to read more about the background to the area which they are visiting.

The description of each species should also be as short as possible. Users who are not accustomed to reading (including university-educated técnicos) are primarily interested in the uses of the plant, or in ecological information such as were to find it, or when it fruits. The text should focus on these aspects, or even be replaced by pictures, where possible.

It might seem obvious that technical terms should be kept to a minimum for non-scientific users, but may respondents felt this aspect had not been given due attention. With farmer understanding being a primary concern, extension workers considered that few authors share their sensitivity to the language of guides.

Nevertheless, all user groups were aware of the importance of scientific names. Rural farmers and forest users consistently said that scientific names should be included as a link to other knowledge about the plants. Other names should be included according to the purpose of the guide; all local names should be included and for some purposes, e.g. ecotourism, names in other languages such as Portuguese and English should also be considered. The most prominent name on

the page should be the one that is most relevant to the user group. In most cases this is the most common local name.

Finally on the matter of legibility, comments were strongly in favour of large clear text and wide spacing, especially for rural users. As extension workers noted, this is not only because rural people are not used to reading, but also because many have problems with their vision.

8.4   Physical aspects

Respondents' assessment of the physical aspects of guides offered few surprises. It was agreed that guides designed for use in the field should be small enough to fit into a pocket or small bag, and should be made of materials that are weather resistant. Even where guides are not primarily intended for field use, if they are to be used in offices in remote and humid areas, resistant materials are vital.

The possibility was suggested of having complementary guides, one for identification in the field and one with more in depth information to be kept in the office, school or library.

9   Conclusions

Through workshops and interviews, we reviewed guides with each defined user group. We discussed with them which kinds of guides they find most useful and why, taking into account both presentation and content. With both authors and users of the guides we explored issues relating to the perception of guides, the demand and need for them for various purposes, and the expectations of different types of guides by various user groups. With authors in particular we discussed the motivation for writing, and objectives of, their guides, as well as the important issue of the impact of guides. The review has resulted in a rich picture of users' preferences, which will provide essential information for the manual on production of guides.

The review showed that there are more guides, and more ways of producing guides, than we had expected, in both study areas. However it does seem that guide production is not always accompanied by strong publicity, and that authors lack opportunities to communicate with each other and share experience.

Across our wide selection of respondents, there is clearly huge demand for guides, and great interest in methods to support the production of guides. Scientific work (biodiversity monitoring, ecological studies) is being held up by the lack of guides based on recent taxonomic revision, especially by the lack of guides in Spanish and Portuguese. And among extension workers and communities there is great interest in maintaining local knowledge of plants and enhancing their use. It should be noted that this demand is as great for guides to animals as it is for plants. Guide production is held up by lack of funds, but the cost is small compared with many development projects and it seems that improved awareness of the uses and impact of guides, could make donors more willing to support such projects. Another constraint frequently mentioned by academics, is that guide production is not valued academically, and gains the authors little credit in career terms.

Apart from professional biologists, our respondents indicated that guides are rarely used for identification purposes, at least in the sense of identifying a plant which is completely unknown to the user. Instead guides are used to help *confirm* the identity of a plant, in order to find further information about it. The extent to which

identification is neglected is an important issue which needs further examination in both study areas. It may be that the scientific identity of species is not as well understood as local users believe it to be, and that incorrect scientific names are being used because authors do not check their sources thoroughly.

Authors often had more far-reaching objectives for their guides, which were not necessarily recognised by their users, perhaps because objectives such as 'awareness-raising' and 'motivating a change of attitude to conservation' are relatively intangible. Nevertheless, in the only case where a guide had existed long enough to have real impact, it was clear that more native tree species are being used in agroforestry projects, as a result of the book. However it is generally difficult to measure the guide's impact, which is affected by objectives, distribution, and follow-up. Some authors do not clearly elucidate their objectives in writing the guide, and few monitor distribution and use of the guides.

When reviewing the usability and usefulness of the guides which had been produced, although authors do not use those terms it was not uncommon for the guides to be produced with a specific kind of user in mind, even if such users were not often consulted. Broadly, respondents felt that guide users fall into four categories of users with similar needs: academics / professional biologists; rural communities; extensionists; and ecotourists.

Users have strong views on what makes guides usable, which are not always related to what scientists think they need. People commonly 'leaf through' (folhear) guides in order to recognise an already known species or to identify an unknown one. They seldom use keys, but tend to rely on indices. This finding highlights the need to consult with users and test guides before production. Testing of options before spending much time and money on producing illustrations and descriptions is essential, as well as (much nearer the time of publication) testing the whole guide to ensure the access systems can be used properly. However very few of the authors had conducted any test of their guides prior to publication. While funding is a constraint, it was also clear that the need for this had not occurred to most authors.

We conclude from our survey that the following areas are priorities in supporting the production of guides:
- clearly defining the objective of the guide with an identified user group, before embarking on the production
- methods for consulting or involving potential users, to plan the content and presentation
- understanding the need for accuracy and clarity in scientific nomenclature
- testing (components of, and the whole) guide
- ensuring effective impact through distribution, publicity, training and follow-up.

Further project work will focus on developing these areas, and presenting them in the methodological manual.

10 Acknowledgements

For further information please contact
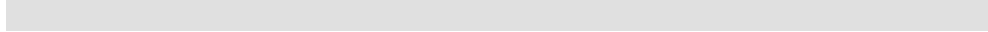(in the UK)   Anna Lawrence   anna.lawrence@green.ox.ac.uk
(in Bolivia)   Israel Vargas   ivargas@fan-bo.org
(in Brazil)   Ana Paula Lopes Ferreira   sasopguias@e-net.com.br

This working paper offers a summary of the review process in Bolivia and Brazil and draws on methodology drafted by AL and PN and developed by all collaborators, and on reports written by CIAT, FAN, TM, Ana Paula and AL.

Contents

11 Introduction

This project's objective of evaluating existing guides is to identify factors that could be important for the users, and with which we can:

- Analisar de una manera sistematica
- Take into account when producing new guides
- Describe in the methodological manual for guide production
- Use in training courses to support the introduction of the manual

The evaluation combines two approaches, both with current and potential users:

- A review of existing guides, through semi-structured interviews (SSI)
- A series of tests of usability and usefulness, i.e. by setting problems to be solved with the help of the guide, researched through systematic observation and SSI

As usual with this type of research, no method is perfectly adapted to the problem but, through a process of 'triangulation' (i.e. the process of using several methods and sources of information to cross-check data and reach a reliable result, [1] we can have confidence in the results.

This process requires preliminary activities: preparation of tables to describe the guide, invitations to participate in interviews / group discussions / workshops; clarification of the purpose of evaluation (i.e. that we aim to evaluate the guide, not the respondent!); and requesting people to be available for the necessary time.

12 Purpose of the evaluation

The review of the guides will determine:

Comment: This part may not be necessary?

- Why each guide was produced (purpose of the guide according to the authors)?
- What is each guide used for (purpose and needs of the users)?

This information serves as the basis for structured tests, to research the usability and usefulness of:

- The different ways of presenting information
- Different systems of accessing the information (e.g. keys, indices, icons etc.)

It will probably be necessary to do more than one usability test when assessing existing guides, given that the test depends on the purpose, and that the author's purpose often differs from that of the user.

Comment: Not sure if necessary

All these methods are under development. They have been tested in Bolivia, and then revised and tested again in Brazil. The version presented here is based on the experience of the PNE team with SASOP; however it still lacks tests of usability, for guides which were written with the primary objective of identification. This will be achieved through the collaboration of this project with the DENDROGENE project (EMBRAPA, Belem).

13 Components of evaluation

Each method in the evaluation process consists of an analysis of four aspects of the guide:

- Access systems (the way in which species can be found within a guide e.g. keys, indices, colour coded pages, etc.)

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[1] Triangulación: el proceso de usar diferentes métodos y fuentes de información para cancelar los varios errores inherentes en cada método, para llegar a un resultado confiable. *I'm leaving this in Spanish to help a future translator.*

- Illustrations (photographs, drawings, diagrams)
- Textual information (information content)
- Physical aspects (size, weight, durability etc.)

Each aspect of a guide is represented by various components. For example, the **access systems** of a guide might consist of botanical keys, indices, icons (symbols to represent information categories) or others. The components of the access systems are divided into tools for use at the level of the whole book (keys, indices) and tools for use at the level of the page (or single species entry) such as running titles, different fonts or icons. During the methodological tests undertaken in Paraíba, we noticed that even the title of the book is seen as an access system because it helps to generate interest in users and motivates them to use the guide.

The **illustrations** might consist of photos, botanical line drawings (black and white), colour drawings, images of the whole plant, parts of the plant, magnified parts, and diagnostic drawings as a part of the glossary or keys.

The **textual information** of a guide refers to the categories of information that are included within it. Such categories might include various forms of nomenclature (scientific, local), botanical description, geographical distribution (that may be supplemented by maps) or information relating to the uses, ecology, phenology, harvest, conservation or economical importance of the constituent species.

The **physical aspects** of a guide describe the nature and quality of materials that it is made of, and consequently its weight and durability (and suitability for field work), the size and density of the print, the quality of reproduction of the photographs and drawings, its overall size and any other physical factors that affect its use and impact.

14 Activities in the evaluation

We have developed five separate activities to help us evaluate existing guides:

- Systematic description of the guide
- Interviews with individual users
- Interviews with authors
- Workshops with groups of users or potential users
- Usability tests.

The description of the guide accompanies all the other activities, and must be done <u>before</u> the interview or workshop. The other activities can be combined or separated according to the kind of respondent and their experience. For example in Brazil we experimented with a combination of usability tests included as the final activity in the participatory workshop.

The method of each activity is explained later in this working paper; however, in this section we explain briefly the rationale for each activity.

14.1 Describing the guide

In all cases it is very important to record the results in a systematic way, so we advocate the initial preparation of a table that shows the complete content of the

guide. It is a little laborious to do this, but it helps a lot with communicating the results and making comparisons between guides.

14.2 Interviews with individual users

The aim of this activity is to get a representative impression (albeit a personal and subjective one) of the factors that users want to have, and find practical, in a guide. In addition to analysing the four aspects of the guide mentioned above (see Section 3) the individual interview enables us to document the current use of the guide. It is always important to explain that the purpose is not to evaluate the user or author, but rather the guide.

The interview begins with a series of general questions, about the usefulness and need for guides, and information on how guides are distributed and how users access them. The interview goes on to evaluate a specific guide in more depth. This could be a guide that the respondent uses, or one that he or she selects from a range presented by the interviewer. In cases when the objective is to evaluate a guide selected by the interviewer, it helps enormously to prepare the contents table of the guide(see Section 5.3) before conducting the interview. Sometimes the interviewer will deliberately select a guide, to ensure that it is included in the evaluation.

14.3 Interviews with authors

Exploring similar aspects of guides as the interviews with users, the interviews with authors focus only on guide(s) that they have written. The objective of author interviews is to document details of specific guides, therefore the interviews focus less on general aspects of guides. In addition to analysing the four aspects (described in Section 3) of the guide, we also ask important questions about the purpose of producing the guide, the motivation behind it, the intended audience (público), any consultations made with the target group, any pre-publication tests, how the guide is/was distributed, and what (if any) evaluation or impact assessment has been done post-publication and distribution.

14.4 Workshops with groups

The workshop process has been adapted from a method written originally for group interviews that was very closely linked to the individual interview. Through our own self-evaluation process in Brazil we decided to ensure that the workshops follow a participatory process using some PRA tools [will need to define]. This enables the group to consolidate experiences shared among the participants. The workshop process requires skills in participatory facilitation and works best when facilitated by someone who knows the participants (and has their confidence) and knows how to approach the theme.

The work in groups enables a productive process during which the participants themselves stimulate dialogue and new ideas emerge. It is important to vary the dynamics of the workshop activities, and to make sure that the discussion is recognised as relevant to the concerns of the participants. The workshop theme is

therefore introduced in a plenary session, and followed up by brainstorming sessions ('lluvias de ideas') in which the participants share their own experience. Participants go on to work in pairs, analysing several guides according to the four defined aspects (Section 3), and later present the results to the whole group. Another way to facilitate the guide evaluation activity is to observe a group analysing a guide and record their opinions, however, this is more difficult particularly in terms of structuring the results.

14.5 Usability (functionality) tests

The usability test method is the most complicated tool in the evaluation process that we are trying out [estrenando]. It is a tool that requires some preparation before the activity, particularly in constructing the contents table for each guide which shows the components of the descriptions, access systems, the different kinds of illustrations etc., as explained in the section below, 'how to describe a guide' (Section 5). It is important for the researcher to be confident in semi-structured interviewing methods, and to be very careful to observe the process, document comments and observations, and ask questions to probe on the responses [profundizar las respuestas].

The usability test method consists of setting problems that can be solved by using the guide. The problems may relate to the purpose of the guide in question or to the purpose for which the user wants to use the guide (these purposes may be different). If the purpose is identification, the researcher will follow the user while he or she tries to identify a species using the guide (acompaña al usuario mientras el usuario intenta identificar una especie usando la guia). If the purpose is to provide information, the researcher follows the user through the process of observing the plant, recognising it using the guide, locating the species in the guide and finding the correct information.

This process requires a further preparatory activity: the selection of species to be identified using the guide. It is important that the majority of the species to be identified are not known to the respondent, so that the guide's identification tools can be tested. The interviewer has two options:

⇒ **Take the respondent to the plants**: plan a route through the forest / field that takes the respondent to various pre-selected plants;

or,

⇒ **Take the plants to the respondent**: bring plant specimens to the place where the interview will be held. This might lead to problems, because the identification of plants in the field often depends on characteristics, such as the bark, latex, or habit of the plant, that cannot be observed in small specimens (e.g. branches).

The methodology described here assumes [supone] that the usability tests are done in the field. However, we would be interested to hear from anyone who has tried alternative methods that involve bringing the specimens to the interview, and can comment on circumstances when this might work.

The described process is very simple when we are testing guides to few species, especially those guides that aim to provide information *about* the plants rather than, primarily, aiming to *identify* the species (e.g. *Plantas da Medicina Popular das Cariris*

Velhas). It is more complicated, but also more useful, when used to test the usability of identification guides, or larger guides, such as the *Guia de Reserva Ducke*.

The usability test method is the least known, and still the least tested of the methods described here. It is therefore a priority to collaborate with users and authors, to deepen our experience and adapt the usability testing method to the needs of other researchers and authors of guides.

14.6 Number of respondents (sample size)

It is not appropriate to conduct quantitative analyses in this type of research. It is more important to make sure that the sample includes a *representative* range of users and authors, rather than a predetermined number of participants. If the methods are used correctly, in a semi-structured way, the interview process allows the research to link the results with the respondent, hence analysing the context and its influence on the results. This process is known as 'pattern analysis', i.e. the search for patterns of difference and/or similarity between users and guides.

14.7 Systematic consolidation [Sistematización] of the results

It is likely that each guide will be evaluated using several methods: interviews, workshops and usability tests. All resulting information should be analysed according to the themes of interest and according to the guide itself.

For example, we can present a thematic analysis on the needs of the different user groups, priorities for guide production, contexts in which it is necessary to identify the plant (rather than simply confirming the identify in order to link it to the required information), and the potential impact that the guide could have. Additionally (or alternatively), we can analyse the content of the guides, in terms of the four aspects detailed above (access system, illustrations, text, physical aspects), their usability (functionality) in the field and whether they are fulfilling their stated purpose.

Additionally, the researchers may want to compile a report on each guide, consolidating [sistematizando] the opinions and expectations of different users, and comparing them with the purpose and expectations of the authors.

The results of this consolidation and analysis of guides can contribute to the separate analysis of our evaluation methodology, and contribute ideas [alimentando con ideas] to the methodological components of the field guides manual.

15 How to describe a guide

15.1 What to describe in a guide and how

The first step in evaluating a guide is to describe its content. This is usually outlined in the contents page. However, the contents page itself is treated as guide content, and therefore this, and details about the guide's main section on identification (e.g. illustrations, text) are included in the description of the guide.

When describing guides it may be necessary to include all the components that are mentioned below, however, at this point in the research we do not know yet how much detail is required. Only once we have conducted the process several times will we have a clearer idea of the level of detail necessary.

Verbal information: We are interested in two categories of verbal information:

- the presence or absence of information about how to use the guide (or parts of the guide), and what the content of this information;
- categories of information about each species.

Although it can be laborious, it is necessary to describe briefly all the categories of information in each guide.

Illustrations: These are a guide's main tools for identifying plants and we need to document:
- WHAT is illustrated
⇒ Whole plant?
⇒ Leaves?
⇒ Fruits?
⇒ Flowers?
⇒ Sections of parts?
⇒ Magnified parts?

15.2 Tables for describing guides

15.2.1 Publication details

Title of the guide_____

Author (s) _____

Edition_____ **Published by:** _____

Price _____ **No. pages**_____

Target audience [Público alvo]
_____

Authors' objectives _____

15.3 Table for describing the whole content of guides

Firstly, we need to include a table which shows the whole content of the guide:
[Primera se precisa colocar uma tabela que mostra el conteúdo inteiro do guia:]

Component	Description	*Observations (column to be used during tests of the method)*

Example (Plantas da medicina popular das Cariris, by Fátima Agra**)**

Component	Description	*Observations (column to be used during tests of the method)*
Preface		
Contents		
Acknowledgements		
Summary		
Introduction	*Explains the purpose of the book and the target audience*	
Geographical area covered the book		
Methodology	*Mentions how the authors collected the specimens*	

and information		
Format		
Description of species		
• *Common name*		
• *Scientific name*		
• *Synonyms*		
• *Family*		
• *Description*		
• *Comments*		
• *Ethnomedicine*		
• *Chemical constituents*		
• *Biological activities*		
• *Representative specimen*		
• *Drawing*	*Black and white*	
Glossary		
Bibliography		
Index of common names and scientific names	*Common and scientific names mixed in the same index*	
Index of chemical constituents		
Index of uses and activities		

15.4 Table for describing access systems

Because the access systems are not listed as such in the contents, they should be shown in a separate table.

Access tool	**Description**	*Observations (column to be used during tests of the method)*

Options / variables: *the following list contains the possible responses to be included in the above table. However the list is under preparation [em construção], and we would welcome suggestions for other variables which should be added and communicated to other researchers.*

15.4.1 Options for accessing information at the whole guide level:

Contents page
Is there a contents page?

'How to' section detailing the use of the guide
Is there a section describing to users how to use the guide
This is not really an access system?

Are there keys in the guide and, if so, what type of key(s)?
For example,
Standard keys
Multi-access keys
Illustrated keys

Does the guide have indices? How many? What type?
For example,
Scientific name
Common name
Family names
Uses
Ecological zone
Seed collection season [as in Lorenzi]

In what order are species described? For example,
- Alphabetical order
- Ordered by botanical family (e.g. Arecaceae, Leguminosae)
- Ordered by habit [porte] (e.g. tree, shrub, herb, vine)
- Ordered by a particular theme (e.g. general use, medicinal use)

Is there a glossary to terms used in the guide? For example,
Botanical terms (is it illustrated?)
Technical terms relating to use/preparation of plants
Technical terms relating to ecology

Are there any maps? For example,
- *Map showing the geographical region covered by the guide*
- *Map showing ecological zones in the region*
- *Map showing distribution of local communities*

15.4.2 Options for accessing information at the page level:
- Names: which types of names should be included
- Coloured margin to indicate flower colour or other criterion (e.g. botanical group)
- Symbols to indicate habitat, habit, use etc. (specify)

15.5 Table for recording information on illustrations

Illustrations	Description	*Observations (column to be used during tests of the method)* **may want to remove in final methodology**

Options / variables: *the following list contains the possible responses to be included in the above table. However the list is under preparation [em construção], and we would welcome suggestions for other variables which should be added and communicated toother researchers.*

Are there photographs in the guide? And, if so, what type are they?
- Black and white
- Colour [coloridos]

Are there drawings in the guide?
- Colour plates
- Black and white drawings (e.g. botanical line drawings)
- Silhouettes drawings (showing the outline of the whole plant)

In the description column, make a note of <u>which</u> part of the plant is illustrated:
- Is the whole plant shown? Are the fruits / flowers included?
- Are seasonal changes of the plant shown?
- Are there drawings of the flowers?
- Are there drawings of the fruit?
- Are there drawings of the bark?
- Do any drawings so plant parts that have been dissected or cut? (e.g. bark slash, cut fruit)
- Are any plant parts shown in there actual (real) size?
- Are any magnified plant parts shown? (e.g. flowers, leaf margins)
- Do any drawings highlight diagnostic features?

No. of illustrations per plant: How many?

No. of illustrations per page: How many?

What is the scale of drawings? How is the scale indicated? For example,
- A human figure in the drawing?
- A scale bar, ruler or other item in the photo?
- Is graph paper [Papel milimetrado] used? (ex. Lorenzi)

Are there any other illustrations? For example,
- Are the keys illustrated? (e.g. drawings or diagrams of diagnostic characteristics included to aid identification)

Are there distributions maps of the species? What kind of maps?

- Shaded maps (showing the approximate range of the species)
- Dot maps (showing specific sites of voucher specimen collections)

15.6 Table for describing the textual / information content of guides

Textual information	Description	*Observations (coluna a ser usada durante entrevistas / pruebas)*

Options / variables: *the following list contains the possible responses to be included in the above table. However, the list is under preparation [em construção], and we would welcome suggestions for other variables which should be added and communicated to other researchers.*

What type of nomenclature (names) is used in the book? For example,
- *Common / local / vernacular names*
- *Scientific names*
- *Family names*
- *Synonyms*

How are species described? What does each description contain?
- *Diagnostic characteristics*
- *Are keys (Descrição geral) included?*
- *Which plant parts are described?*
- *Is the description given in continuous text or with subtitles?*

Subtitles used in species level descriptions could include:
- Scientific name
- Origin
- Distribution
- Description (subcategories: height, flower colour, *etc.)*
- Phenology (season of flowering, fruiting)
- How to identify the species
- Habitat
- Ecology
- Uses
- How to cultivate the species

What language is used for the descriptions?
- English, Spanish, Portuguese or a local language?
- Is simple language used?
- Is technical language used?

Describing language is difficult therefore it would be good to include examples of simple or complex words that are often used in the text, to indicate the level of language used.

15.7 Table for describing physical aspects of guides

Aspectos físicos	Descrição	Observações (coluna a ser usada durante entrevistas / pruebas)

Options / variables: *the following list contains the possible responses to be included in the above table. However the list is under preparation [em construção], and we would welcome suggestions for other variables which should be added and communicated toother researchers.*

What is the size of the guide?
What do you think of the size? Why? [O que você acha do tamanho? Por que?]

What is the weight of the guide?
What do you think of the weight of the guide. Why? [O que você acha do peso? Por que?]

Does the guide look durable? Is it suitable for field work?
Do you think that the guide is resistant? Could it be taken to the field? Why / Why not? [Você acha que ele é resistente? Poderia ser levado a campo? Por que?]

Quality of paper
What do you think of the quality of the paper used to make the guide [O que você acha (qualidade) das folhas deste guia]?

Quality of illustrations
What do you think of the quality of the cover of this guide? [O que você acha (qualidade) da capa deste guia ?]

Other physical aspects
What else, if anything, do you note about the physical aspects of this book?

16 Interview with individual users

Note that in this section, instructions for the interviewers are written in italic letters, while guidelines for what should be said during the interview are given in normal letters.

16.1 Step 1   Instructions for interviewers

Read the previous section 'how to describe a guide' before conducting the interview [É interessante que o entrevistador faça a leitura da seção anterior "como descrever um guia", antes da realização da entrevista] .

The interviewer must be flexible, and will need to adapt the questions to the respondent. It is important to remember that there are two possible routes to be taken in this interview, one when the respondent is assessing a guide that he or she knows and uses, and the other when we need to show a range of guides not necessarily known to the respondent.

[O entrevistador tem que ser flexível, precisa fazer adaptações de acordo com o entrevistado. É importante lembrar que existem dois caminhos, um quando o entrevistado está com um guia utilizado por ele e outro quando precisamos mostrar guias não utilizados/desconhecidos pelo entrevistado]

Before starting it is important to make sure that the respondent is willing to be interviewed and understands what you will do and why. In particular, they must understand that you are evaluating the guides, not them. [É importante, ao início, assegurar que a pessoa a ser entrevistada esteja se sentindo à vontade, entendendo o que vai fazer e porque. Deve-se deixar claro que o objetivo é avaliar os guias e não ela.]

The introduction should indicate the following [Na apresentação deve-se abordar os seguintes aspectos:]

- *The focus of our research and the reasons for it [enfoque da nossa pesquisa e justificativas;]*
- *The role of the respondent: how they can help us and why (e.g. their particular experience and / or perspective] papel do entrevistado, como pode nos ajudar;*
- *Thank them for making their time available for the interview [Agradecer o tempo que ele está disponibilizando para a entrevista;]*
- *Confirm that we are evaluating the guide, not the person [Confirmar que não estamos avaliando o entrevistado, e sim o guia;]*
- *Ask for permission to make notes during the interview [Pedir permissão para fazer anotações;]*
- *Explain that the interview begins with some general questions and then goes on to detailed questions about particular guides [Explicar que a entrevista começa com algumas perguntas gerais, passando depois para perguntas detalhadas.]*

16.2 Step 2   General questions

Before the general questions begin, it is important to explain to the respondent what <u>we</u>, (the research team) mean by guides, so that the interview focuses on our main areas of interest.

1. For you, what is a guide? [Para você o que é um guia?]
2. Do you use guides in your work? [Você usa guias no seu trabalho?]
3. How do you use guides in your work? [Como?]
4. Which guides do you use, and what for purpose? [Quais usa? Para que?]
5. How often do you use guides? [Com que frequência?]
6. What is the effect of using guides in your work? *or:* Does the use of guides have advantages in your work? What are these advantages? [Qual é o efeito que tem a utilização de guias no seu trabalho? Ou a utilização de guias no seu trabalho trás alguma(s), quais?]
7. Are there (adequate) guides in this region? If no, why do you think not? [Existem guias no nordeste? Se a resposta for negativa, por que acha que não tem (suficientes) guias aqui?]
8. What are the priority topics for new guides in this region? [Quais os assuntos prioritários para produção de um guia no nordeste?]

16.3 Step 3   Specific questions

Part A: Choosing the guide

<u>Situation 1:</u> *when the person is being interviewed in his or her workplace or has brought her favourite guide with her to the interview [quando a pessoa está sendo entrevistada no seu ambiente de trabalho ou quando ela trouxe algum guia que utiliza.]*

In Situation 1, the following questions should be asked:

1. Which is the guide that you use most? Please, can you show it to me? [Qual o guia que utiliza mais? Ele está aqui? Pode me mostrar?]
2. Why do you use this guide? [Por que usa este guia?]
3. How good is the access to this guide? How did you get it? Is it easy to obtain? [Como é o acesso a este guia? Onde conseguiu? E fácil?]

    Now go on to part B

<u>Situation 2:</u> *when the person does not have access to a familiar guide, the interviewer will have to provide either a single guide or a range of guides from which the respondent can select one. The interview will be more useful if it is based on a guide that the respondent already knows so that they can comment on its usefulness and usability. [Quando a pessoa não está sendo entrevistada no seu ambiente de trabalho ou quando não tem algum guia que utilize, com ela, no momento da entrevista, é necessário que o entrevistador mostre alguns guias e peça que o entrevistado escolha um. Se for possível, deve ser um guia que a pessoa já tenha utilizado ou conheça.]*

Now go to part B.

Part B: Analysing the guide

1. We would now like to analyse this guide. It's important to know what you like, don't like about the guide, and why; and also to hear your suggestions for how it could be improved. To do this, we would like to ask you questions about four aspects of the guide: [Gostaríamos de neste momento fazer uma análise neste guia. Seria importante saber o que você gosta, o que não gosta, o porque e sugestões/como acha que deria ser. Para isso, pedimos que você tenha como base 4 aspectos:]

- *Access systems (tools)*: Which tools help you to find the information in the guide (e.g. keys, indices, leafing through the book to look at illustrations, summary, bibliography, maps, title, etc.) [Recursos que ajudam a encontrar a informação/ Sistema de acesso (ex: chaves, índices, folheando o livro, sumário, bibliografia, mapas, título etc)]
- *Illustrations*: What do you think of the illustrations (drawings and photos) in the guide? [Ilustração (desenhos, fotos)]
- *Text*: What is your view of the verbal information / information content of the guide (e.g. language, themes, ease of understanding the information etc.)? [Conteúdo do texto/Informação verbal (ex: linguagem, temas, compreensão da informação etc)]
- *Physical aspects:* What do you think of the size, weight, durability, quality of the materials, suitability for field use, or any other physical characteristic of the guide? [Aspectos físicos ex:tamanho,durabilidade, qualidade do material, etc)]

We will explain how to do this, step by step. [Ao continuar, se explica como fazer isto, passo por passo.]

16.4 Step 4   Tools (i.e. access systems) which help you to find information in the guide

[Recursos que ajudam a chegar as informações, formalmente conhecidos como: Sistemas de acesso]

How do you look for information in this guide [Como busca informações neste guia?]

The interviewer should have a blank table, prepared earlier according to the guidelines in Section 5.4, which shows the access systems included in the guide. An example is given below: [É interessante que o entrevistador tenha uma tabela em branco (só estava escrito: componente, utilizou e comentários), seguindo o modelo abaixo.]

The interviewer and respondent now identify together the access systems in the guide. [Entrevistado e entrevistador juntos, identifiquem o sistema de acesso do guia.]

The interviewer uses the table [which is still blank at this stage] to list all the access systems that are found in the book. [O entrevistador utiliza a tabela (que ainda estará em branco até esse momento), para colocar todo o sistema de acesso presente no livro].

At this moment the interviewer hands the guide to the respondent, asking him or her how s/he would search for information in it. It is important that the interviewer uses numbers to indicate in the table, the chronological order in which the respondent

uses the tools. [Neste momento o entrevistador entrega o guia ao entrevistado, perguntando a este como ele busca informações.
Ë importante que o entrevistador marque com números (de forma crescente) a ordem de utilização do guia pelo entrevistado.]

Example: [Exemplo:]

The table is blank. In this case, after the interviewer and the respondent look at the guide together, they find the components described in the table below, and the interviewer writes them into the table. In this example, when asked how to search for information in this guide, the respondent responded that first he would use the index, then the illustrations (black and white drawings), then common name and finally the description. He then demonstrated with a specific example, and the interviewer filled in the table as follows:

[A tabela estava em branco. No caso deste guia, depois que entrevistado e entrevistador olharam juntos, encontraram estes componentes descritos nesta tabela.
*Neste caso, quando perguntado ao entrevistado, como busca informações neste guia, ele respondeu que primeiro utiliza o índice depois as ilustrações (desenho em preto e branco), depois nome comum e finalmente a descrição. **He then demonstrated with a named example,** ficando a tabela então da seguinte forma:]*

Anna, I have moved the table that was here down to the Usability testing section as requested. We now need a new example table here.

Componente	Utilizou?	Comentários
Prefácio		
Conteúdo		
Agradecimentos		
Resumo		
Introdução		
Área de estudo		
Metodologia		
Formato		
Descrições das espécies		
• *Nome comum*		
• *Nome científico*		
• *Sinônimos*		
• *Família*		
• *Descrição*		
• *Comentários*		
• *Etnomedicina*		
• *Constituintes químicos*		
• *Atividades biológicas*		
• *Amostra representativa*		
• *Desenho: preto e branco*		
Glossário		
Bibliografia citada		
Índice de nomes vulgares e dos nomes científicos		
índice de constituintes		

químicos		
Índice de usos e atividades		

The space for 'observations' in the table should be filled in with information that the interviewer judges to be relevant, i.e. all the reactions of the respondent which affect his or her ease, or difficulty, in using the guide. [O campo "observações" da tabela, deve ser preenchido com todas as informações que o entrevistador julgar pertinente. Todas as reações do entrevistado que traduzam a facilidade e/ou dificuldade dele em relação ao livro.]

It is worth remembering that the content of this table is not a model but a specific example of an interview situation. The components listed in Table ??, relate to the components that were found in the book being assessed in this example. Other guides could contain different components. [Vale lembrar que o conteúdo desta tabela não é um modelo. Ela ficou dessa forma, neste caso, onde o guia tinha estes componentes. Outros guias podem conter componentes diferentes.]

In addition to noting which access systems were used by the respondent to find information, it is also important to record which systems that he/she did NOT use, and to find out why not. In the example given above, the access systems that the respondent did not use were the scientific name, chemical constituent and uses indices. After asking him/her why s/he did not use these indices, the interviewer should have recorded his/her replies in the space for 'observations' in the table.

The next steps:

We have given below some examples of questions that can help the process of asking about the text, illustrations and physical aspects, but other questions can also be used. The aim is for the respondent to give his or her opinions about these three aspects. [A seguir colocaremos alguns exemplos de perguntas, podem ser feitas outras. O objetivo é que o entrevistado dê opiniões sobre as informações textuais, ilustrações e aspectos físicos do guia.]

Step 5 Looking at the verbal information [Olhando a informação verbal]

1. What do you think of the information in this guide? [O que acha da informação neste guia?]
2. Do you think that this guide contains information that will enable its audience to achieve its objectives in using the guide? Why / why not? [Você acha que este guia possui informações que permitirão ao seu público, chegar ao(s) seu(s) objetivo(s)? Por que?]
3. What do you think of the quantity of information in this guide? [O que você acha da quantidade de informações trazida pelo guia?]
4. What other kinds of information would you like the guide to have included? Why? [Quais outras categorias de informação gostaria ter? Por que?]

Record the responses in the following table: [Registre as respostas na seguinte tabela:]

Textual information	**Description**	***Respondent's comments [Comentarios do***

		entrevistado]

When the respondent has stopped commenting on the verbal information in the guide, the interviewer must identify those elements of the information in the guide that the respondent did NOT comment on and must ask why not.

5. Which types of information in the guide did you not use? Why not?

Step 6 Looking at the illustrations [Olhando as ilustrações]

1. What do you think of the different ways of illustrating the plants / animals etc. in the guide? [O que você acha das diferentes maneiras de ilustrar as plantas / animais etc.?]
2. Normally do you prefer drawings or photos? Why? [Normalmente você prefere desenhos ou fotos? Por que?]
4. What do you think of the quality of the illustrations in the guide? Why? [O que você acha da qualidade dessa ilustração? Por que?]
3. Do you like to see scales or other measures, such as a ruler, squared paper, pen, or a person, in the illustrations that give you an idea of the size of the plant or animal? Which do you prefer? Why? [Você acha interessante ou não a presença de medidas nas ilustrações que permitam ter uma idéia do tamanho da planta/animal, tais como régua, papel milimetrado, caneta, a presença de uma pessoa,etc? por que?]
4. How many illustrations do you like to see of each plant or animal? What do you think these illustrations should show (e.g. size, location, which parts should be illustrated etc.)? [Quantas fotos *ilustracões???* você acha interessante ter da mesma planta/animal ? Como você acha que estas fotos deveriam ser (tamanho, localização, que partes deveriam ilustrar,etc)?]
5. Which other kinds of illustration would you like to see in the guide and why? [Quais outras categorias de ilustração gostaria ter? Por que?]

Record the responses in the following table: [Registre as respostas na seguinte tabela:]

Tipo de ilustração	Descrição	*Observações do entrevistado*

Step 7   The physical aspects [Sobre os aspectos físicos]

1. What do you think of the quality of the cover of this guide? [O que você acha (qualidade) da capa deste guia ?]
2. What do you think of the (paper) quality of the pages [O que você acha (qualidade) das folhas deste guia ?]
3. Do you think the guide is strong and resistant? Could it be taken to the field? Why? [Você acha que ele é resistente? Poderia ser levado a campo? Por que?]
4. What do you think of the size of the guide? Why do you like/dislike the size? [O que você acha do tamanho? Por que?]
5. What do you think of the weight of the guide? Why do you like/dislike the weight? [O que você acha do peso? Por que?]
6. What else do you notice about the physical nature of the guide? O que mais lhe chama atenção em se tratando de aspectos físicos?

Record the responses in the following table: [Registre as respostas na seguinte tabela:]

Aspecto fisico	Descrição	*Respondent's comments*

Step 8   Final questions about the specific guide [Últimas perguntas sobre o guia especifico]

If the respondent did not know of the guide before the interview, then the interviewer can ask the following questions after the analysis: [Se o entrevistado não conhecia o guia antes da entrevista, ao final da análise dos quatro aspectos, sugerimos que seja feita o seguinte questionamento.]

1. Would you use this guide? Why / why not? What would you use it for? [Você utilizaria este guia? Por que (não)? Para que?]

And in all interviews (whether or not the respondent already knew the guide): [Em todos casos:]

2. Do you have any other comments about this guide, or about guides in general? [Tem outros comentários sobre este guia ou sobre outros guias em geral?]

Step 5   The methodological manual [O Manual Metodológico]
The final questions for the respondent concern the methodological manual to writing guides.

1. Would you like to write a guide yourself? [Gostaria de escrever um guia?]

2. Would you use a manual which explains how to write a guide? How would you use it? [Você usaria um manual que explica como escrever um guia? Como?]
3. What would you like to see in such a manual? [O que você acha interessante conter neste manual]*?*

17 Interviews with authors [Entrevistas com autores]

See below for Portuguese version, no need to translate.

Title: _____

Author: _____

1. Why did you decide to produce this book?
2. How did you identify the demand for it?
3. Who are the intended users?
4. What was the purpose of producing it, and did you intend it to be used in the field – if so what for?
5. How did you choose
   - the geographical coverage of the guide
   - the species to be included in the guide?
6. What methods did you use to generate the following (i.e. what, how and why?):
   - illustrations
   - access systems (tools) [*you may need to explain what you mean here*]
   - verbal information
   - physical aspects [*you may need to explain what you mean here*]
   - any other feature
7. Did you test any of these four aspects of the guide before finalising / publishing it? How did you test them?
8. Where did you find the information that is in the guide, who did you consult, and how do you know that the information is correct and reliable?
9. Did you have any problems in preparing the guide? If so, what?
10. What resources did you need to produce the guide (in terms of time and funds)?
11. Distribution:
    - How is the guide distributed?
    - Do you have a record of the buyers / users of the guide?
    - Where is the guide available?
    - What is the price of the guide?
12. What has been the impact of the guide? Have you assessed the impact and if so, how?
13. What changes would you like to make to the guide if you had the chance?
14. Would you be interested in using a methodological manual like the one we are producing? Do you think it would be useful for others? What do you think should be included in the manual?

18   Analysing guides with groups (workshop approach) [Analises de guias com grupos (oficina de trabalho / taller)]

The process for analysing guides, which was developed in Paraíba and Salvador, is as follows: [O processo que foi desenvolvido na Paraíba e Salvador é o seguinte:]

1. **Welcome and explanation:** a brief introduction to the research team and the workshop objectives
   Apresentação. Uma breve apresentação do projeto e os objetivos da oficina

2. **Introductions** by the participants
   Introduções pelos participantes

Focus questions

3. **When we talk about a field guide what do you envisage?** This question can stimulate a discussion about the concept of guides in general, and the participants' ideas about guides in particular. The group participates in a brainstorming process, and the facilitator writes the ideas on a flipchart.
   Quando falamos de um guia de campo, o que vem à cabeça de vocês? Esta pergunta podia estimular uma discussão sobre o conceito de guia que se esta usando no Projeto. O grupo participe fazendo uma 'chuva de idéias', o facilitador escreve as idéias num cartaz.

4. **What is the use of a field guide?** <u>EITHER</u>, the group participates in a brainstorm, the facilitator summarises on flipchart, <u>OR:</u> the participants are asked to write their own ideas on cards and then the facilitator groups the cards on a board. At this point it can be useful to classify the cards, according to the different user groups, and provoke a discussion about different user needs. Alternatively, the cards can be grouped according other factors, according to the purpose of the workshop.
   Qual e a utilidade de um guia de campo? O grupo participe fazendo uma 'chuva de idéias', o facilitador escreve as idéias num cartaz. Ou: os participantes escrevem as suas idéias em tarjetas, o facilitador junta as tarjetas no cartaz. Neste momento pode ser interessante classificar as tarjetas de acordo com os públicos representados, ou de acordo com outro fator variável.

5. **What should a field guide include, in order to identify a plant?** This question also demands a brainstorming session. This activity can stimulate a rich discussion about the important characteristics needed to identify plants from different families / genera.
   O que precisa ter um guia de campo para identificar uma planta? Também com uma chuva de idéias. Esta atividade pode estimular uma discussão rica sobre as características importantes para identificar plantas de diferentes famílias / gêneros.

6. **Which guides do you use?** This question also demands a brainstorming session, and can help to increase the range of guides to be analysed in the workshop. It is likely that not all the materials listed will be the kind of guides that are used for plant identification. Without rejecting these suggestions, the facilitators need to help the participants to focus on guides that are either used for identifying plants or finding information about them. This activity also helps to find out the main areas of participants' interest.

Quais os guias que você usa? nem todos os impressos analisados são guias de campo para identificação ou reconhecimento de plantas. Esta atividade (chuva de idéias acompanhada por apresentações de vários guias trazidos pelos participantes) ajuda a aumentar a gama de guias a ser analisados, também mostra ao facilitador as preferências atuais do grupo.

7. **What do you think are the benefits of using guides in your work?** This activity can rely on discussion, brainstorming sessions or recounting of personal histories and is intended to define the impact of guides. Sometimes it can help to ask further questions. For example, if a respondent says 'a guide helps me to know the plants, or to find out the scientific name' the facilitator should ask 'why do you need to know about the plants, or know the scientific name?'
Qual é o efeito da utilização dos guias no seu trabalho? (discussão, chuva de idéias ou historias pessoais): e importante que esta atividade consegue definir os impactos dos guias; vale aprofundar com outras perguntas mais. Por ex.se o efeito mencionado é 'para conhecer as plantas', vale perguntar: 'para que você necessita conhecer as plantas? para que necessita encontrar nomes científicos? '

8. **What are your priority topics for new field guides?** The participants write their ideas on cards then the facilitator combines these on a board. At this point the cards can be grouped according to agroecological zone, or user group, or other some other factor relating to the interests of the group. It might be necessary to explain that we are not planning to write all the guides suggested, but rather that we need to know about user demands for field guides o help us develop the methodology manual.
Para vocês, quais são as prioridades de assuntos para produção de guias de campo? os participantes escrevem as suas idéias em tarjetas, o facilitador junta as tarjetas no cartaz. Neste momento pode ser interessante classificar as tarjetas de acordo com a região agroecológica, ou público ou outro fator variável. Neste momento pode ser necessário explicar que não vamos responder a todas as demandas, e explicar outra vez o objetivo de desenvolver uma metodologia.

9. **Selecting the guides:** the participants are encouraged to choose the guides to be analysed. These can be chosen from a range of guides brought to the workshop by the facilitators, or by the participants, or both. The participants then work in pairs, each analysing a different guide. The workshop report should include a summary description of each guide analysed, including the following information: full title and author, intended user group, number of pages, type of illustrations, presence of indices etc.
Seleção dos guias: Os participantes são estimulados a escolher entre os guias a serem analisados. Logo trabalham em duplas, para analisar um guia. E importante que o relatório da oficina inclusive uma descrição sumária de cada impresso analisado, tal como: título completo e autor, público a que se destina (se possível) número de páginas, fotos e/ou desenhos, fotos cor ou P&B, tem índices ou não, etc.

10. **Analysis of the guides:** the facilitators ask the pairs of participants to analyse their guide according to four aspects: access system, illustrations, text and physical aspects. They write on separate cards, positive and negative reactions to each of these aspects, thus ending up with eight cards in total. It can help to have different coloured cards for the different aspects.
Análise dos guias: os facilitadores pedem que a análise seja feita com base em 4 aspectos: ilustração, sistema de acesso, texto e aspectos físicos. Sugerimos que escrevem nas tarjetas comentários positivos e negativos sobre os 4

aspectos e que utilizam cores diferentes para os diferentes aspectos: 1. ilustração-azul; 2. sistema de acesso- verde; 3. texto- vermelho e 4.aspectos físicos- preto.

The facilitators explain what they mean by the four aspects of guides (see Section 3 of this Working Paper) and the participants can then change the way in which these aspects are expressed. For example, in Paraíba the participants chose to express the aspects as follows:

- Access systems = resources which help to find the information
- Illustrations = drawings and photos
- Text = content of the text (language, themes, understanding of the information)
- Physical aspects (size, durability, quality of the materials)

This activity can stimulate group participation enormously. We suggest that each pair analyses only one guide so that they have time to analyse it thoroughly and to report back fully to the group (see the next step).

Esta atividade estimula bastante a participação do grupo. Sugerimos que cada dupla analise apenas um guia e tenha mais tempo para aprofundar a análise.

Os facilitadores explicam o que querem dizer com estes aspectos (ver a seção 1: Introdução) e os participantes podem fazer alterações na forma de expressar os aspectos.

Ex: em Paraíba, os quatro aspectos nas palavras dos participantes:

- Ilustração (desenhos, fotos)
- Recursos que ajudam a encontrar a informação
- Conteúdo do texto (linguagem, temas, compreensão da informação)
- Aspectos físicos (tamanho, durabilidade, qualidade de material)

Esta atividade estimula bastante a participação do grupo. Sugerimos que cada dupla analise apenas um guia e tenha mais tempo para aprofundar a análise.

11. **Presentation of the results:** each pair of participants presents its results on cards, separating the positive and negative observations about each aspect of the guide that they analysed. The facilitator summarises the cards on a separate flipchart, and adds any other comments made during the presentation.
    Apresentação dos resultados: Cada dupla apresenta os resultados em tarjetas separando, por cada aspecto, o que foi positivo e o que foi negativo em cada guia ou material impresso analisado. Também são destacados os comentários e sugestões aos impressos analisados.

12. **Prioritising the guides:** The selected guides are laid out on the floor or a table, and the facilitators asks the participants to give each guide a score according to:

- Usefulness for species identification,
- Practicality, and
- Usefulness of the information.

Each participant gives each guide a score, ranging from 1 (poor) to 5 (very good). The total or average scores show the overall group preference. At this

point it is good to stimulate a debate about the results, asking why some guides are better than others, and discussing whether any guide is ideal in all aspects, or whether there are trade-offs.

Priorização dos guias: são colocadas no chão os impressos selecionados anteriormente pelo grupo e os facilitadores pedem que eles os priorizassem. A priorização é feita de acordo com funções definidas junto com o grupo: ex:

- utilidade na identificação das espécies,
- praticidade e
- utilidade das informações.

Estabelece-se uma pontuação de 1 a 5 (sendo 1 a menor nota e 5 a maior nota) para que cada participante desse sua nota aos livros. Ao final calculou-se as médias.

Neste momento é interessante estimular um debate sobre os resultados perguntando por que alguns são melhores que outros, e indicando que não existe o guia ideal – por exemplo, o guia que funciona melhor para identificar não é o guia mais prático.

13. **Optional activities:** after analysing the guides, you can follow up with the activities mentioned in the following sections, for example, testing the illustrations and/or the usability of the guide in the field. Including these activities in the workshop has the following advantages:

- It can change the dynamic of the workshop (moving from hall to field)
- It can improve the continuity between activities
- It can take advantage of the fact that the ideas from the workshop are still fresh in participants' minds.

Atividades opcionais: apos analisar os guias, pode seguir as atividades mencionados nas seguintes seções – **testes das ilustrações**, e **testes de usabilidade no campo**. Isto tem três vantagens:

- 1° mudança da dinâmica (sala - campo)
- 2° a atividade de campo deu segmento à atividade de sala
- 3° no momento da atividade de campo, os conceitos ainda estavam bem presentes.

Porém é muito provável que não tem tempo. Depende do objetivo da oficina de trabalho, e os participantes.

14. In plenary, finish with a session that draws conclusions and defines the next steps (i.e. what the participants want to do, or want the facilitators to do, as a result of the workshop). Concluir com **conclusões e próximos passos** – em plenário.

19 Testing illustrations [Testes das ilustrações]

The objective of this activity is to verify whether the participants can recognise plants using the illustrations in the guide.

The respondent is allowed to see the illustration but not the names. For each illustration, the interviewer asks the following:

a) Do you recognise this plant?
b) [*Now tell the respondent what the plant is, using common names and / or scientific names as appropriate*]
c) [*If the respondent did not recognise the plant*] Do you know that plant? If yes, why did the illustration not help you to recognise it?
d) [*If the respondent recognised the plant and got a correct identification*] What features of the illustration helped you to recognise the plant?
e) [*If the respondent gave an incorrect name*] What made you think it that the plant was that species? What could be improved in the illustration to avoid this confusion?

The results can be analysed to summarise for each book: how many of the plants were known by the respondent and, of those, what proportion were correctly identified. What positive and negative features of the illustrations were given by the respondent.

20   Usability tests [Testes de usabilidade] or field tests

This one proved a real challenge to write a procedure for – with much discussion among collaborators who didn't think some aspects were feasible – we will need to review this carefully as I would like to send a clear step-by-step protocol (which it is not at the moment) to Regina a.s.a.p.

We need to take into account the doubts of my colleagues who found the tables unwieldy. We all think the usability tests will be most useful for something large and very complex, intended to help in identification, such as the new Ducke guide which botanists are all raving about. But to write out a table of its contents would amount to many many pages. I think instead a more generic form is needed. PN to advise.

These tests are conducted in the field and can be described as field tests. The objective of these tests is to see whether the guide enables the user to achieve his or her purpose, such as whether s/he wants to

- identify a species
- recognise a species in order to confirm its identity
- find out information about a given species in the field

The term 'usability' refers to the property of a guide that enables users to achieve these objectives successfully.

To test the usability of the guide we need to observe the steps that the user takes in searching for the information. The basic idea is to show in a table, the order in which the components are used, and to record observations made by the user, and our own observations about the user's reactions to each step. Such observations include notes about confusion, hesitation or irritation at any part of the guide. The table must be prepared beforehand, and should include all the components of the guide. This table is the same as the one prepared in Section 5.3 (in this Working Paper) on 'Describing a guide'.

It is important to use semi-structured interview methods in this activity, and to probe (aprofundar) about the use of the guide, by asking the users why they used the components in that way, and reminding them to give their opinions.

At the end, ask the following questions:
- Are you sure of the identification?
- Why / why not?
- If the respondent did not use some of the access tools, ask why not. For example,
  - ❖ Why didn't you use the key?

- ❖ Did the index of common names help?
- ❖ Do you think it is necessary to include the distribution maps?
- ❖ Etc.

And the interviewer should record:
- How long it took the respondent to identify the plant using the guide?
- Was the identification correct or not?

This last point, about the accuracy of the identification, is a key point of the test. If the interviewer does not know the plants well enough to be ABSOLUTELY SURE of the identity, the only way to conduct this test properly is to collect a voucher specimen of the plant used in the test, and to send it to a botanist who can give you the correct scientific name.

Example of how to fill in the form:

In the following case:

> *The user knows the plant and at first looks for it in the index of common names, but does not find the common name and so leafs through the book looking at the drawings, finds the species and then checks the description in the text.*

The record of this given case in the table would be as follows:

Title : *Plantas da medicina popular dos cariris velhos – Paraíba, Brasil: espécies mais comuns* **Author:** *Maria de Fátima Agra* **Published by:** *PNE*

Componente	*Used? [Utilizou?]*	*Comments [Comentários]*
Preface [Prefácio]		
Contents [Conteúdo]		
Acknowledgements [Agradecimentos]		
Summary [Resumo]		
Introduction [Introdução]		
Study area [Área de estudo]		
Methodology [Metodologia]		
Format [Formato]		
Species descriptions [Descrições das espécies]		
Common name [Nome comum]	*3*	*Checked the name [Checou o nome]*
Scientific name [Nome cientifico]		
Synonyms [Sinônimos]		
Family [Família]		
Description [Descrição]	*4*	*Read the description to make sure; remained a bit uncertain of the identification because the common name was different from the one he*

		knows [Leu a descrição para averiguar. Ficou meio inseguro da identificação pela diferença de nome comum.]
Comentários		
Etnomedicina		
Constituintes químicos		
Atividades biológicas		
Amostra representativa		
Desenho: preto e branco	2	Leafed through, looking for the species. Stopped at page 37, recognised the photo. [Folheava, buscando a espécie. Parou na página 37, reconheceu a foto]
Glossário		
Bibliografia citada		
Índice de nomes vulgares e dos nomes científicos	1	Started here, looking for the common name of the plant he wanted to identify; didn't find the name. [Não encontra o nome]
índice de constituintes químicos		
Índice de usos e atividades		

Colleagues in Brazil reported that when they tested this usability test method they did not use the tables much. They did not find them practical or functional since they take a relatively long time to use. They found it much faster and safer (in terms of recording all that the user does and says) to note sequentially what is being done, said and observed by the user.

Nevertheless, if the tables are not completed we run the risk of losing (or not recording) other information. For example, it is important to know which components of the guide are being used, and also to know which are not. If a table is not made before going to the field, then the interviewer may forget to aks important questions about the components that are not being used.

It seems that the method works for the more profound usability tests, such as tests of complex guides like the *O Guia de Reserva Ducke*. The method will also help to test guides that are in preparation. We think that the method will help to test components (such as photos) and the access system, in the process of writing our guide.

Appendix 1 Proyecto Manual de Arboles nativos útiles en los Valles Cruceños

Encuesta para usuarios potenciales

1. ¿Cuál es su interés en las especies nativas (arbóreas y arbustos)?

2. ¿Qué utilidad tendría el libro para Ud?

3. ¿Quiénes podrían ser los usuarios del libro?

4. Referente al contenido, ¿qué debería ser el equilibrio entre lo técnico y lo menos técnico? Si tiene alguna experiencia con el uso de este tipo de libro, favor de compartir algunos ejemplos de palabras que se debería o no se debería usar.

5. Se adjunta dos hojas de un libro que ya se editó, como ejemplo para recibir sus comentarios, sobre:
   - la información taxonómica
   - la utilidad / detalle del dibujo
   - el formato

6. ¿Qué otra información le gustaría que esté en el libro?

7. Estamos pensando incluir un capítulo sobre la ecología y sistemas agroforestales tradicionales que se encuentran en la zona. ¿Tiene algún conocimiento de estos temas que podríamos incluir?

GRACIAS POR SU AYUDA.

Nombre: ....

Ocupación: ....

Organización: ....

Lugar de trabajo: ....