



Annexes

Annex 1: International Institute for Environment and Development 15 Ethical Principles for collaborative research

These principles are considered by the IIED to constitute the basic assumptions underlying the Code of Ethics of the International Society for Ethnobiology (see Annex 2), and as such provide an excellent grounding for ethics in collaborative research

1. Principle of Prior Rights This principle recognises that indigenous peoples, traditional societies, and local communities have prior, proprietary rights and interests over all air, land, and waterways, and the natural resources within them that these peoples have traditionally inhabited or used, together with all knowledge and intellectual property and traditional resource rights associated with such resources and their use.

2. Principle of Self-Determination This principle recognises that indigenous peoples, traditional societies and local communities have a right to self determination (or local determination for traditional and local communities) and that researchers and associated organisations will acknowledge and respect such rights in their dealings with these peoples and their communities.

3. Principle of Inalienability This principle recognises the inalienable rights of indigenous peoples, traditional societies and local communities in relation to their traditional territories and the natural resources within them and associated traditional knowledge. These rights are collective by nature but can include individual rights. It shall be for indigenous peoples, traditional societies and local communities to determine for themselves the nature and scope of their respective resource rights regimes.

4. Principle of Traditional Guardianship This principle recognises the holistic interconnectedness of humanity with the ecosystems of our Sacred Earth and the obligation and responsibility of indigenous peoples, traditional societies and local communities to preserve and maintain their role as traditional guardians of these ecosystems through the maintenance of their cultures, mythologies, spiritual beliefs and customary practices.

5. Principle of Active Participation This principle recognises the crucial importance of indigenous peoples, traditional societies and local communities to actively participate in all phases of the project from inception to completion, as well as in application of research results.

6. Principle of Full Disclosure This principle recognises that indigenous peoples, traditional societies and local communities are entitled to be fully informed about the nature, scope and ultimate purpose of the proposed research (including methodology, data collection, and the dissemination and application of results). This information is to be given in a manner that takes into consideration and actively engages with the body of knowledge and cultural preferences of these peoples and communities.

7. Principle of Prior Informed Consent and Veto This principle recognises that the prior informed consent of all peoples and their communities must be obtained before any research is undertaken. Indigenous peoples, traditional societies and local communities have the right to veto any programme, project, or study that affects them. Providing prior informed consent



presumes that all potentially affected communities will be provided complete information regarding the purpose and nature of the research activities and the probable results, including all reasonably foreseeable benefits and risks of harm (be they tangible or intangible) to the affected communities.

8. Principle of Confidentiality This principle recognises that indigenous peoples, traditional societies and local communities, at their sole discretion, have the right to exclude from publication and/or to have kept confidential any information concerning their culture, traditions, mythologies or spiritual beliefs. Furthermore, such confidentiality shall be guaranteed by researchers and other potential users. Indigenous and traditional peoples also have the right to privacy and anonymity.

9. Principle of Respect This principle recognises the necessity for researchers to respect the integrity, morality and spirituality of the culture, traditions and relationships of indigenous peoples, traditional societies, and local communities with their worlds, and to avoid the imposition of external conceptions and standards.

10. Principle of Active Protection This principle recognises the importance of researchers taking active measures to protect and to enhance the relationships of indigenous peoples, traditional societies and local communities with their environment and thereby promote the maintenance of cultural and biological diversity.

11. Principle of Precaution This principle acknowledges the complexity of interactions between cultural and biological communities, and thus the inherent uncertainty of effects due to ethnobiological and other research. The Precautionary Principle advocates taking proactive, anticipatory action to identify and to prevent biological or cultural harms resulting from research activities or outcomes, even if cause-and-effect relationships have not yet been scientifically proven. The prediction and assessment of such biological and cultural harms must include local criteria and indicators, thus must fully involve indigenous peoples, traditional societies, and local communities.

12. Principle of Compensation and Equitable Sharing This principle recognises that indigenous peoples, traditional societies, and local communities must be fairly and adequately compensated for their contribution to ethnobiological research activities and outcomes involving their knowledge.

13. Principle of Supporting Indigenous Research This principle recognises, supports and prioritises the efforts of indigenous peoples, traditional societies, and local communities in undertaking their own research and publications and in utilising their own collections and data bases.

14. Principle of The Dynamic Interactive Cycle This principle holds that research activities should not be initiated unless there is reasonable assurance that all stages of the project can be completed from (a) preparation and evaluation, to (b) full implementation, to (c) evaluation, dissemination and return of results to the communities, to (d) training and education as an integral part of the project, including practical application of results. Thus, all projects must be seen as cycles of continuous and on-going dialogue.

15. Principle of Restitution This principle recognises that every effort will be made to avoid any adverse consequences to indigenous peoples, traditional societies, and local communities from research activities and outcomes and that, should any such adverse consequence occur, appropriate restitution shall be made.



Annex 2: Code of Ethics of the International Society for Ethnobiology

The Code of Ethics of the International Society for Ethnobiology (ISE) can be downloaded from the ISE's website: <http://ethnobiology.net/code-of-ethics/> in several languages, and is in a constant process of amelioration. All social sciences and natural sciences researchers, whether they use qualitative or quantitative approaches, are encouraged to adhere to these standards as they were co-drafted with members of communities that have historical experience of "being researched." This process of co-development helps ensure that by properly using the ISE Code of Ethics, the perspective of such communities frames research activities. Nevertheless, the ISE Code of Ethics represents a basic standard, and researchers are encouraged to go beyond it. One way to do so is to collaborate with communities in a process of co-production of knowledge that serves the communities' needs and aspirations above those of the researcher (see below).

The fundamental value underlying the ISE's Code of Ethics is the concept of mindfulness, which signifies "a continual willingness to evaluate one's own understandings, actions, and responsibilities to others." This value reflects the recent transformations in ethnographic practice, discussed above, which require the researcher to be highly self-reflexive, flexible and politically engaged. Beyond mindfulness, the most important principles of any ethnography research are the following (these points summarise and expand on some of the principles of the ISE CoE):

- 1. Recognition of rights:** This includes communities' and peoples' inalienable rights to their territories and resources, to self-determination, to their customary laws and practices, to the protection of their cultural and spiritual values, to their intellectual property and associated biological and genetic resources, and to respect as knowledge-holders and land-owners. Communities are therefore the ultimate decision-makers regarding any research carried out on their lands or among their people, and their own modes of decision-making must be respected at all times.
- 2. Free, prior and informed consent:** Prior to starting any research activity, communities that are likely to be involved must be fully informed of the activities proposed and have the right to refuse the proposed activity. Should they accept the proposed research, they have the right to be involved in decision-making throughout the research cycle, and they must be active participants in any research programme.
- 3. Active participation, and beyond:** People involved in the research should not only be active participants in any research activity carried out in their lands and communities (in its design, implementation and analysis), but ideally should be key actors in the development of research ideas. Researchers should prioritise the research needs and ideas of the communities they seek to work with, and to transform their role from leaders of research programmes, to advisors or facilitators for community-led research programmes.
- 4. Trust and disclosure:** The communities participating in the research must fully understand the ultimate goal of the research and how it will be used, therefore the latter



must be presented in ways that community members can understand and transmit information among themselves. Much like with Free, Prior and Informed Consent, researchers must discuss any change in the research, how data is being analysed, used and presented throughout the project cycle, and community members have the right to disagree, request changes throughout the process, or even call a halt to it in extreme circumstances.

5. **Privacy, confidentiality, and anonymity:** In the context of ethnography, these elements are particularly important. Researchers must always be mindful of issues of individual privacy in the context of the group: e.g. they should never report people's interview responses without the latter's specific consent. They must also always respect group confidentiality, which means that communities have the ultimate say regarding what information can be published or not. When publishing articles, books or reports, researchers must respect individuals' and communities' rights to remain anonymous, and if necessary, must create pseudonyms or writing styles that protect people's and communities' identities.

6. **Reciprocity, equitable benefit-sharing, and active support:** Social researchers increasingly seek to go beyond the 'do no harm' principle, aiming instead for positive and useful outcomes for their research among the communities they work with. Any benefits from the research must be properly shared, and decisions for so doing must be taken in a way that respects community decision-making processes. While always acknowledging the support and participation of community members in research processes, researchers must find ways of ensuring that they give something back to the communities and individuals they have worked with, in a form chosen by community members according to their customary decision-making processes.



Annex 3: Dictionary of useful terms in participatory research and co-enquiry

Co-enquiry: Short term for 'collaborative enquiry', 'cooperative enquiry' or 'collaborative research'. Research 'with' rather than 'on' people"; it emphasizes that all active participants are fully involved in research decisions and actions as co-researchers. Research decisions and actions range from research design, defining the methods and topics of research, to data collection and the analysis and write-up of the results.

Community-based research (community research): Research activities based in the community, where co-enquiry is taken to the community level. Community participation in research decisions and actions is based on customary decision-making and takes place through elected community researchers. The whole community also participates in the analysis and revision of the research results.

Community-based researchers (community researchers): Members of a given community that are trained to be researchers. This training can be as basic or complex as the external team and the community decide it to be: it generally involves basic elements of research such as definition of the problem, definition of research methods, data collection and data analysis. Community researchers also have decision-making power, which is framed by the decision-making processes of their community –in this sense, their role is different to that of community technicians (see below).

Community research manuals (CRP): Step by step guidelines that define how to implement specific research methods in a co-enquiry process with a community.

Community technicians: Members of a given community that are trained in one or several techniques for data collection and that can be hired by external teams to conduct specific data collection work. They are not necessarily trained to conduct whole research processes, do not necessarily need to conduct their work within a co-enquiry framework, and don't usually have much decision making power. They are sometimes also called 'paraecologists', 'parataxonomists', etc.

Interactive methods: These are anthropological research methods that require longterm engagement, dialogue and interaction with communities in order to reach answers to the research questions posed. These methods cannot be rushed because they depend on trust and personal relationships to develop between researcher and community. They are also habitually infused with mutual learning (see below), and are often (although not always) highly participatory in their nature as their implementation rests on constant dialogue.

Mutual learning: This is a process that encourages peer-to-peer learning, removing the concept of a teaching-student or trainer-participant hierarchy. A relationship of equality between peers is essential for mutual learning.

Participatory methods: Methods that imply the active participation of all the subjects of research. 'Participation' is a broad term, and it can be used to cover a large range of levels of community involvement (see Annex 4). The methods can range from questionnaires, open



interviews or workshops that require the presence of local people, to data collection methods that involve community technicians, to data analysis methods that involve the participation and decisions of local people.

Participatory research: Research activities and methods that involve the active participation of all the subjects of research. (Again, 'participation' is a broad term, and it can be used to cover a large range of levels of community involvement.) The participation of local actors can range from *participation in information giving*, where they simply answer questionnaires and interview questions, or are present in a workshop, to *functional participation* for example community technicians are involved in collecting data, to *interactive participation/self-mobilisation* where the community is engaged in, or even launches autonomously, the whole research process (i.e. decision of the research topics and methods, data collection, data analysis). The latter panorama corresponds to a co-enquiry process.



Annex 4: Typologies of Participatory Research (adapted from Pimbert and Pretty 1995)

Typology	Components of each type
Passive Participation	People participate by being told what is going to happen or has already happened. It is unilateral announcement by an administration or project management without any listening to people's responses. The information being shared belongs only to external professionals.
Participation in information giving	People participate by answering questions posed by extractive researchers and project managers using questionnaire surveys or similar approaches. People do not have the opportunity to influence proceedings, as the findings of the research or project design are neither shared nor checked for accuracy.
Participation by consultation	People participate by being consulted, and external agents listen to views. These external agents define both problems and solutions, and may modify these in the light of people's responses. Such a consultative process does not concede any share in decision-making and professionals are under no obligation to take on board peoples' views.
Participation for material incentives	People participate by providing resources, for example labour, in return for food, cash or other material incentives. Much in-situ research and bioprospecting falls in this category, as rural people provide the fields but are not involved in the experimentation or the process of learning. It is very common to see this called participation, yet people have no stake in prolonging activities when the incentives end.
Functional participation	People participate by forming groups to meet predetermined objectives related to the project, which can involve the development or promotion of externally initiated social organization. Such involvement does not tend to be at early stages of project cycles or planning, but rather after major decisions have been made. These institutions tend to be dependent on external initiators and facilitators, but may become self-dependent.
Interactive participation	People participate in joint analysis, which leads to action plans and the formation of new local groups or the strengthening of existing ones. It tends to involve interdisciplinary methodologies that seek multiple perspectives and make use of systematic and structured learning processes. These groups take control over local decisions, and so people have a stake in maintaining structures or practices.
Self-mobilisation	People participate by taking initiatives independent of external institutions to change systems. Such self-initiated mobilization and collective action may of may not challenge existing inequitable distributions of wealth and power.



Annex 5: The Gentry method for the study of woody plants in plant communities

Objetivos: Determinar la la riqueza de especies de plantas leñosas y suministrar información de la estructura de la vegetación.

Método: Este método consiste en censar, en transectos de 0.01 ha, todas los individuos cuyo tallo tenga un diámetro a la altura del pecho mayor o igual a 1 cm o bien una circunferencia a la altura del pecho mayor o igual a 3 cm.

Procedimiento:

1. Elegir 18 acahuales los cuales se medirán a lo largo de 9 meses, 2 acahuales por mes.
Estos acahuales deben estar distribuidos uniformemente en distintas edades de descanso.
2. En cada acahual realizar 4 transectos ubicados al azar.
3. Cada transecto tendrá la medida de 100 m², con 25 m de largo por 4 de ancho y se debe orientar de forma paralela a la pendiente.
4. La distancia entre transectos será de un máximo de 20 metros.
5. Cada transecto de 25x4 m se traza con una cuerda y con cuerdas o varas perpendiculares de 2 m se establece la distancia a cada lado de la cuerda.
6. La cuerda para cada transecto se amarra a un árbol, el cual se incluye dentro de los registros.
7. En cada área de muestreo se censan y colectan todos los individuos leñosos cuya Circunferencia a la Altura del Pecho (CAP) sea mayor o igual a 3 cm. La altura del pecho se considera a 1.3 m sobre el nivel de las raíces.
8. La información de cada individuo debe incorporarse al formato de registro de datos en campo y estos se van numerando de forma consecutiva.
9. Se deberán colectar todas las especies distintas identificadas en campo (morfoespecies).
Cuando se colecta un individuo dentro de un transecto, se debe guardar en una bolsa separada y marcarla con una etiqueta adhesiva o cinta masking tape, indicando el número del transecto y el número de secuencia de registro dentro del transecto, por ejemplo: T3-47, quiere decir que es el individuo 47 del transecto 3. Posteriormente a esta muestra se le asigna un número de colección, se prensa y se procesa hasta constituir un ejemplar de herbario.
10. Una vez finalizada la fase de campo, todo el material se llevará a la comunidad para trabajar con expertos locales y ayudar a identificar etnoespecies.
11. Finalmente el material se prensa y se genera una lista de las especies o morfoespecies registradas en los muestreos con base en las colecciones realizadas.

References

Romero-Romero, M.A., S. Castillo, J. Meave y H. Van der Wal. 2000. 'Análisis Florístico de la Vegetación Secundaria Derivada de la Selva Húmeda de Montaña de Santa Cruz Tepetotutla (Oaxaca), México.' *Bol. Soc. Bot. México* 67:89-106.

Villareal, H., M. Álvarez, S. Córdoba, F. Escobar, G. Fagua, F. Gast, H. Mendoza, M. Ospina y A.M. Umaña. 2006. Manual de métodos para el desarrollo de inventarios de biodiversidad. Programa de Inventarios de Biodiversidad. Bogotá, Colombia: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt. Segunda edición.



Annex 6: The method for Rubiaceae, Melastomataceae and Asteraceae families

Objetivos: Determinar la diversidad de especies de las familias Melastomataceae, Rubiaceae y Asteraceae como grupos representativos e indicadores para estudiar la distribución de especies en general en ecosistemas tropicales.

Método: El método consiste en coleccionar y registrar todas las especies de Rubiaceae y Melastomataceae en un área de 0.4 ha por cada sitio de muestreo. Para esto, se realizan 10 transectos de 80x5 m, cada uno de ellos subdividido en 16 parcelas de 5x5 m. En total se obtienen 160 parcelas de 5x5 m, donde se determina la presencia de las especies de estas dos familias.

Para evitar la sobrecarga de trabajo a los equipos de investigación locales, este método se adaptará a los transectos realizados para el método Gentry. Al mismo tiempo se añadirá el estudio de la familia Asteraceae.

Procedimiento:

1. En los mismos transectos en los cuales se desarrolla el método Gentry se generarán parcelas de 20m², con 5 metros de largo y 4 metros de ancho.
2. La cuerda se marcará cada 5 metros y en cada marca se utilizarán cuerdas o varas perpendiculares de 2 m.
3. Luego de ello, se procede a realizar colecciones botánicas (ver cuadro de atributos) de las especies de Rubiaceae, Melastomataceae y Asteraceae en cada una de las parcelas (5x4 m) por separado. Para esto es útil dividirse en dos grupos de trabajo, cada uno ubicado a cada lado de la cuerda.
4. Las colecciones botánicas se ponen en una bolsa marcada con cinta o una etiqueta con el número del transecto y el número de la parcela: por ejemplo T1-1 (esto quiere decir parcela 1 del transecto 1). Dado que un transecto tiene 5 parcelas, al final debe haber igual número de bolsas, cada una marcada desde T1-1 hasta T1-5.
5. La información de cada individuo debe incorporarse al formato de registro de datos en campo y estos se van numerando de forma consecutiva.
6. Una vez finalizada la fase de campo, todo el material se llevará a la comunidad para trabajar con expertos locales y ayudar a identificar etnoespecies.
7. La explicación clara del método, permite dar a los participantes el fundamento del método, y la preparación para organizarse en el trabajo de campo.
8. Finalmente el material se prensa y se genera una lista de las especies o morfoespecies registradas en los muestreos con base en las colecciones realizadas.

Referencias:

Villareal, H., M. Álvarez, S. Córdoba, F. Escobar, G. Fagua, F. Gast, H. Mendoza, M. Ospina y A.M. Umaña. 2006. *Manual de métodos para el desarrollo de inventarios de biodiversidad. Programa de Inventarios de Biodiversidad*. Bogotá, Colombia: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt. Segunda edición.



Annex 7: Pile sorting method

Adapted from Martin (1995).

Objective: To elicit the local classification of a particular cultural domain.

Method: This method allows to order a group of objects or living beings according to their similarity. Data is presented in a way that can be registered in a matrix and analyse them statistically.

Procedure:

- A set of cards is prepared. Each card contains a picture of a local animal with biological, cultural or economic importance. These animals have to be selected during the preparatory work (Methods group 0). The number of animals/cards may be very variable, but between 30 and 50 is a good number of species to be represented.
- If the group is composed by more than 5 participants, prepare 2 identical sets of cards.
- In group, participants will be asked to name each one of the animals represented in the cards. The name will be written down in a label and stick it to the card.
- If more than 5, divide the participants group in sub-groups of 3-5 persons.
- Deliver a set of cards to each sub-group.
- Mix each set of cards so they are arranged randomly.
- Ask the participants to organise the cards in 5-7 piles according to their similitude. Put together all the animals that are alike. Do not mention any value or characteristic on which they should put attention, just that the animals must be alike.
- If someone thinks that any animal belongs to more than one pile, create an additional card with the name of the animal, to place it in the corresponding pile.
- Likewise, if someone thinks that in any pile an animal is missing and it is not included in the cards, create another card with the name of such animal and include it in the pile.
- Once the group or sub-groups have finished the organisation of the cards piles, participants will be ask about the characteristics that led them to group the animals in such way. They will also explain what are the differences between the piles.
- The facilitator or other designed person, will register the results of the cards classification and the information about the similarities and differences.
- Invite the members to each sub-group to take a look at the results of the other sub-group, to reflect about the differences of the results, the reasons of such differences, etc.
- After this, results will be tabulated in a similitude matrix. Such matrix is built as the following example:

	Scorpion	Snake	Pheasant	Tucan	Ocelot	Jaguar
Snake	0					
Pheasant	0	0				



Tucan	0	0	1			
Ocelot	0	0	0	0		
Jaguar	0	0	0	0	1	
Bat	0	1	0	0	0	0

- In the matrix, the pairs that are found in the same pile, are allocated with a number '1'. If both elements of the pair are found in different piles, the correspondent matrix cell is given a '0'.
- Once the matrix is filled, participants are asked to go back to their groups and split the each piles in two piles more. This secondary arrangement will be registered using the same matrix, assigning an additional '1' to the pairs that are still together after the second arrangement.
- Ask the participant to divide each pile in two more, and register the results in the matrix.
- If the participants are interested, piles can be divided over and over again until getting individual cards. But if there are time constraints and the team energy is low, the group can stop on this third division and draw a dichotomous tree that show the organisation of the animals in piles and sub-piles. As the group is drawing the tree, participants are asked if these groups are given any local name.
- Due to the amount of information that this exercise provides, 20 or more repetitions are needed (20 or more individual participants) to have statistical reliability in the results. The exercise as presented here provides a common and initial appreciation, but if possible, this can be repeated with individual informants.



Annex 8: Literature review and knowledge dialogue

Objective: The research team (facilitators and community researchers) to have a good knowledge of previous studies and works relevant to their research topic and fieldsite.

Method: This process allows to have a locally relevant review of existing literature on fauna diversity and on selected species natural history. Likewise, it allows to compare and complement traditional ecological knowledge with the available academic knowledge.

Procedure:

- Prior to the session, the facilitator will search, compile and summarise publications on regional fauna diversity, ecology, natural history.
- Also prior to the session, the facilitator will prepare graphic presentations of the summaries, using the available material and resources, such as pictures, drawings, power points, films.
- During the session, and if it has not happen before, the group discusses the importance of a literature review in the context of biodiversity research, for example by demonstrating an important finding that scientists have made and that informs the community's current use of animals or other resources.
- The facilitator then explains what a literature review is (a critical assessment of how previous research relates to the present research process) and describes the process for creating one. While the community researchers will briefly learn how to do a literature search (online, libraries, etc.), it is unlikely that they will have easy access to scientific literature. Here it is suggested that the research team determine a mutually agreed process for the facilitator to share relevant literature with the community researchers as and when it emerges or is discovered.
- The facilitator stresses the importance of discernment when reading from varied sources.
- Based on the previous theoretical overview, the facilitator presents summaries previously prepared.
- Th facilitator promotes a problematising dialogue throughout the presentations. And the group discusses the validity (or not) of the results and arguments made in each main publication, in terms of:
 1. Whether they think the results/arguments are accurate given their knowledge of local diversity, ecology, etc.
 2. Whether they think the body of data/arguments are relevant to answer their own research questions.
 3. How they think the information can be used in their research process
- Responses are written up in a table format on a flipchart page. The following format is suggested, although research teams are encouraged to develop their own mode of systematising the literature.

Publication	Results	Argument	Relevance	Accuracy	How will we use it?



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It may be that some publications focus more on results while others develop more structured arguments, so it may be that some of the table's boxes remain empty.

- Given that an academic literature review is unnecessary in a community context, we suggest that a locally-relevant one be built, using a simple spreadsheet computer programme and based on the information contained in the flipchart:

Publication	Summary	Results	Argument	Relevance	Accuracy	How will we use it?