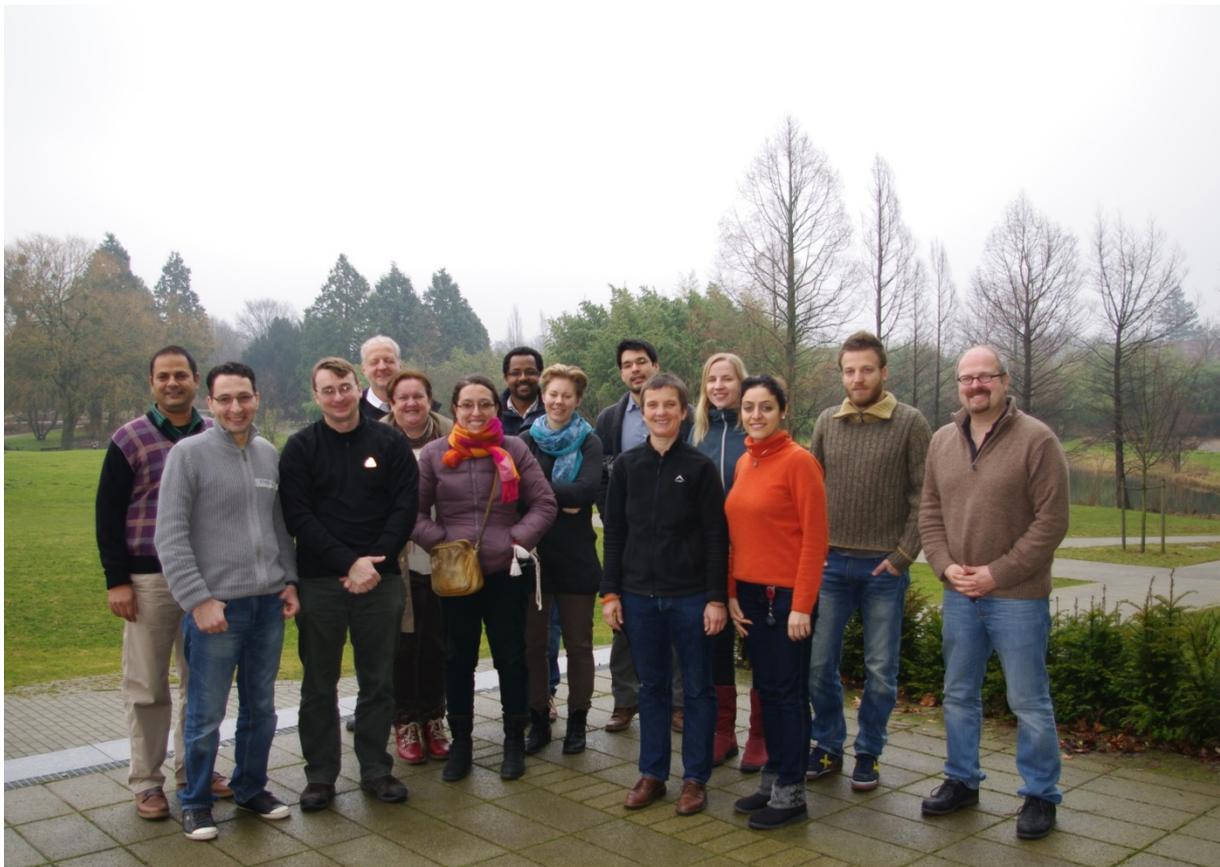


Summary of the process and outcome of the COST Training School on para-ecologist involvement

held from 17th – 19th of February 2014 at the Biocentre Klein Flottbek
and Botanical Garden of the University of Hamburg, in Germany



Participants:

Shekhar Kolipaka, Kamal Zurba, Nathan Forsythe, Steffen Niemann, Ieda Maria Bortolotto, Maria Fantappiè; Yoseph Araya, Matilda Palm, Marc Parfondry, Ute Schmiedel, Linda Böckenhoff, Naghme Gholami, Athanasios (Thanos) Smanis, Chirstoph Külls. Photo: Geraldo Alves Damasceno Junior

The Training School was funded through the COST ACTION ES1104 Desert Restoration Hub. Arid Lands Restoration and Combat of Desertification (<http://desertrestorationhub.com>)

The Training School was organised Ute Schmiedel, Christoph Külls, Shekhar Kolipaka, Yoseph Araya and facilitated Ute Schmiedel

Monday 17th of February 2014

a) Introduction, overview of the planned training school:

Welcome

Ute Schmiedel welcomed the participants on behalf of the Training School organisers. Christoph Külls gave a brief introduction into COST ES1104 through which the Training School was funded.

Brief input on concept of workshop

- Workshop character is focus on peer teaching / learning,
- Think tank, Work and write shop rather than “training school”
- All of us have own experiences (selection)
- Mini-conference
- Brain storm collect, group, document on flipchart
- Direct communication without laptops
- Working groups – interaction
- Dealing with diversity of languages and accents!
- Internet access
- Desktop research
- If necessary and possible telephone / skype call to resource persons (para-ecologists, programme managers, researchers etc.)
- Languages

Introduction of participants

The participants introduced themselves by giving their name and how they would like to be called, their background, where they are from and where they (currently) work, and ended with a statement on something that they learnt from a local land user.

All participants marked on a world-map where they are from and where they work.



Overview of preliminary programme and expected outcomes

- Run through preliminary programme -> Flexible, team-driven!
- Expected outcome of the workshop
- Review and Concept

Expectations of participants

The participants buzzed with their neighbour and wrote on cards of different colour what they hope to happen, what they hope not to happen during the workshop. The cards have been grouped thematically and pinned on the board in groups.

I hope to happen during the workshop:

- To be up-to-date with latest methods, innovations
- Ways to manage traditional knowledge (older people)
- Different methods
- Motivated
- Tools to increase participation
- How to tap local knowledge
- Pitfalls to avoid when dealing with locals
- Communication strategies
- Inter-stakeholder relation
- Identifying new places with young scientists (Iran)
- Timing / synchronising
- Improve knowledge of my person
- Exchange experiences
- Multidisciplinary
- Transdisciplinary and interdisciplinary vocabulary
- Learning from others' experiences
- New friendship
- Work together in future
- Networking, making contacts
- Initiate dialogues

I don't want....

- Too much focus on broader issues (i.e. non-dryland / restoration)
- Any concrete result
- To leave empty handed
- -isms (in the sense of thinking in boxes)
- MEDO (= Portuguese: fear)

Expected outcomes:

- Publication (at least 1!)
- Network for Horizon 2020
- Guidelines for future PE projects (manual) informing about lessons learnt / best practice and about what to keep in mind
- Define terms (as an ongoing process)
- Workshop reader to be compiled based on the e-learning platform
- Para-ecologist internet platform (as an ongoing project)

b) Starting the discussion and clarifying terminology:

Sharing ways of own interaction with local stakeholders as researcher or practitioner – facilitated

- a) Each participant wrote on cards ways of interaction with stakeholders that they already applied (e.g. interviews, workshops to share research results, Action research, training ...).
- b) Participants presented their cards and started clustering them
- c) After that, the team summarized what is there and gave header for the thematic groups.
- d) Added oval cards with key words on why they applied this approach.



Thematic cluster of ways of interactions as emerged from the workshop:

a) **Field visits**

- Study tours (organised by local authorities or ministries)
- Field visits guided by local practitioners (e.g. local extension agents or traditional authorities or leaders)
- Field visits with farmers
- Community exchange visits (learning from each other)

b) **Interviews, focus group discussions**

- Structured / semi-structured interviews, Interview with farmers on restoration experiments, questionnaires, surveys among farmers, families or households)

c) **Participant observations**

- Field trips, participant observation, sharing people's every day's life (observations), embed students

d) **PRA (participatory rural appraisal)**

- Develop the tree of problems with the communities; Role play/ games
- Participatory mapping and / or seasonal calendar (in a public / communal gathering space, may be divided into gender groups)

e) **PAR (participatory action research)**

- Stakeholders and researchers develop and conduct research activities together (in shared roles)

f) **Visual tools**

- Participatory video (documentaries), participatory posters, movies, dramas

g) **Data collection**

- Include local knowledge into my own data collection;
- Together with the community members compiling information on plant properties and uses, pictures of plants
- Sampling water and get feedback on quality
- Conduct joint field on hydrology

h) **Community based monitoring (CBM)**

- Experimental fields by farmers and researchers
- Stakeholders host hydrometric stations
- Build community operated water monitoring stations, contracts (for monitoring)

i) Participatory mapping

- Local mapping or transect walks with key informants
- Ask for guidance by a local knowledgeable person (e.g. when looking for a well)

Objectives of stakeholder involvement

Group work: The participants split into groups. Each group answered the following questions for the following ways of stakeholder involvement:

- Why or when do researchers (or you) involve stakeholders in this way (what are the objectives)?
- What does this involvement mean for the stakeholders?
- What are the challenges or limitations of this ways of stakeholder involvement?
- What are the characteristics in terms of number, scale, direction of communication, results?

a) Participatory monitoring

Why?	To gain local knowledge, esp. about ancient cultures or local knowledge, interact with local communities over a long time or to get information about rare events that an outsider would hardly have the opportunity to witness
	To make them protagonists
	Build partnership in a special field
Meaning for the stakeholders?	Work, spend time and effort on it
	Reduction, focus, awareness (attention)
	Imposed / chosen prioritisation
	New (power) relationship based on knowledge
Challenges?	Higher order knowledge – change of behaviour
	Knowledge / information, jealousy
	Applicability, gain something
Characterisation	Mainly few, local, Data / information from community -> -> us, valorisation, conservation

b) Interviews, focus group discussions

Why?	Direct gathering of information
Meaning?	Involves: sharing information
	May or may not be sensitive; can be nerve wracking and bring about anxiety
	Motivation for the stakeholder: chance to be heard, the values, input, opinion and knowledge

Challenges?	Risk of focus group domination by Alpha individuals
	Potential for stakeholders to try to please researchers
	Cultural barriers (gender, faith, interactions; hierarchies (age, authority / status)
	Language / understanding (multilingual communities)
	Logistics / cost / authorisation (permits)
	Intended targets decline participation
Characterisation	
Scale	Individual (household) to local scale (group)
Direction of communication	Guided extraction

c) Data collection, community based monitoring and mapping

Why? (Mapping)	Local information is important geographical guidance; sometimes the only options for a map
Why? (data collection)	Expand area and sampling size, use as a base for future research, provide information (in addition to pre-decided actions)
Why? (CBM)	Sharing the research with the community to gain more data, bring local indigenous knowledge into a larger context; training for future collaboration
Meaning? (Mapping)	Share, get new perspective, include local knowledge
Meaning? (Data collection)	Training, to overcome language barrier (translation)
Meaning? (CBM)	Involvement, potential to influence the direction of research
Challenges?	Language barrier, too short time frame, too small spatial scale, financial issues, administrative problems, social / cultural barriers for communication (e.g. men talking to women; gathering information about sensitive subjects like religion or politics)
Characterisation	
Numbers	Key informant (mapping) to smaller group (Data collection) to any number (CBM)
Scale	Local to regional
Time span	A few meetings (days) to years
Direction of communication	Stakeholder -> you; joint work (you and them); stakeholders -> stakeholders + you
Results	Maps, transects, calendars, empirical data, long-term time series.

Please note:

Be aware that this is only a first overview that reflects our own perception and understanding!!
There is a broad range of literature and manuals out to be consulted if you want to study further and apply new tools in practice.

Shekhar (kolipaka.s.s@gmail.com) can provide literature references if needed!

Monday afternoon, 17th of February, 2014

Mini-conference (20 min talk, 20 min discussion)

In the afternoon of the first day of the training school, we invited 4 speakers from different disciplinary background to present their experiences in participatory research. PPT slides will be provided as pdf-files.

14:00 Registration

14:15 Bettina Koelle, INDIGO development & change, South Africa: *Exploring challenges through participatory monitoring - Participatory Action Research for climate change adaptation in South Africa.*

15:00 Steffen Niemann, Würzburg, Germany: *Implementing a participatory monitoring approach in Integrated Water Resources Management (IWRM). Options and pitfalls in doing so in the Cuvelai basin (northern Namibia)*

15:45-16.00 Tea / Coffee break

16:00 Jan van der Ploeg, Leiden University, Department of Cultural Anthropology and Developmental Sociology, The Netherlands: *Counting crocodiles; setting up a participatory monitoring and conservation project for the Philippine crocodile.*

16:45 Mike Dodd, Open University, UK. Treezilla.org - *Role of citizen science in ecological research.*

17:30 Wrapped up the discussion and documented on a flipchart the lessons learnt from the mini-conference:

- Projects main aim was to involve people
- Interact at same level (not parent-child relationship). How can one achieve this?
- What is the need of the stakeholders?
- Need-driven participation!
- Learn from practitioners how to involve people -> requires training components at Universities
- We have our own objectives / destinies. We have to make that explicit.
- You need long-term engagement! Also to overcome the one-way communication
- If you have to involve stakeholders: maybe it is a good approach to do this through partnerships with practitioners or through involvement of para-ecologists.
- Scale issue! Local vs. catchment area
- Ethics and scales are discipline-specific; technology question
- Own objectives could also be to make a local impact.
- Be aware of false hopes!

Tuesday 18th of February 2014

Revisit characterisations of different ways to interact with stakeholders

Working groups presented their work from the previous day on the question why and when certain approaches of stakeholder involvements are employed.

What are para-ecologists?

Two examples of para-ecologist approaches where presented

- Introduction and screening of 10 min video by Shekhar about his work in India
- Presentation and screening of 20 min of video “Bridging the gap, para-ecologists in action” by Ute on her work in southern Africa

Discussion: What are the differences and commonalities?

Which other programmes are out there?

- 1) **Parataxonomist programme of the Area de Conservación Guanacaste (ACG) in Costa Rica**
- 2) **The New Guinea Binatang Research Center in Papua New Guinea**
- 3) **BIOTA Southern Africa in Namibia and South Africa & The Future Okavango in Angola, Botswana and Namibia**
- 4) Kakamega Environmental Education Program (KEEP) in Kenya
- 5) Para-ecologist programme by Missouri Botanical Garden in Tanzania
- 6) Mitsinjo Association in Madagascar; Missouri Botanical Garden with projects in Madagascar and East Africa)
- 7) Shekhar’s para-ecologist programme in India
- 8) **Challenges of para-ecologist projects**

Questions to be asked to the para-ecologist programmes:

- 1) Why do researchers / managers involve para-ecologists the way they do it?
What is the need of the researchers / managers?
- 2) What does it mean to the para-ecologists and what kind of work do they do?
- 3) What could be the challenges / limitations of the approach?
- 4) What is the quality of relationship between researchers and para-ecologists?
- 5) What are the characteristics in terms of Number, Scale, direction of communication, results?

Three projects (no 1-3 above, in bold) were reviewed by participant groups of 4 by studying literature, webpages and other sources about the objectives, activities and processes of these initiatives.

The results were documented on cards and displayed on brown paper.

Results of the review of the para-ecologist programme in Costa Rica

1. Why do researchers/ managers involve PE's?	<ul style="list-style-type: none">• Preserving tropical biodiversity• Continuous monitoring (over seasons and years)• Gaining a large quantity of data
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<p>What are the needs?</p>	<ul style="list-style-type: none"> • PE = “librarian” of the rain forest • Faster data collection for less money (PhD would cost too much) • Transforming local / traditional knowledge into the taxosphere → thus making it accessible for a broad society and scientific community • Putting biodiversity to work for the Costa Rican society • PE= Key element in setting up wild biodiversity conservation for non-damaging sustainable development <p>Needs:</p> <ul style="list-style-type: none"> • Inventory: “the game is to generate on-the-job a small army of Costa Rican Para-taxonomists ... for field work” • Capability of absorbing the complexity of accuracy
<p>2. What does it mean for the para-ecologists?</p>	<ul style="list-style-type: none"> • Costa Rican teachers that are connected to para-taxonomists can use the data • Increasing accuracy trough: <ul style="list-style-type: none"> • Experience / training • Iterative feedback of users • Pride of workplace ownership • Playing a new (privileged) role in the community • Potential social isolation by: <ul style="list-style-type: none"> • Former peer groups • Disdain of more elevated social classes
<p>3a. What are the challenges / limitations?</p>	<ul style="list-style-type: none"> • Continuous mentoring & encouraging of PEs (against isolation) • Approach to PE / continuous interaction between PE & mentor • Adapt → train the scientific methodology • Limitation: support / acceptance by government, private foundation
<p>3b. What are the strengths/ opportunities?</p>	<ul style="list-style-type: none"> • Information transfer to teachers, government, commercial use • Technology implementation with barcoding: faster, accurate work, easy to check
<p>4. What are the characteristics?</p>	<ul style="list-style-type: none"> • Local (Guanacaste National Park) • National (Costa Rica) • International (preserving tropical biodiversity) • UNESCO
<p>5. Others</p>	<ul style="list-style-type: none"> • Candidates apply and are selected by highly competitive interviews • Potential candidates: farmers, ranchers, forest rangers, high school students, housewives • Background: rural work force • Literate person • Resident field based biodiversity inventory specialist • Mainly on the job trained • Large training (5-6 months) for para-taxonomists • They can work in the conservation areas & in Costa Rica
<p>6. Ethical issues</p>	<ul style="list-style-type: none"> • PEs are playing a new (privileged) role in the community • Potential social isolation by: <ul style="list-style-type: none"> • Former peer groups • Disdain of more elevated social classes • Continuous mentoring & encouraging of PEs (against isolation) is needed

Results of the review of the para-ecologist programme in Papua New Guinea

(PT = para-taxonomist; PE = para-ecologists, terms used synonymously here; numbers refer to the sources inserted below).

<p>1. Why do researchers/ managers involve PE's? What are the needs?</p>	<ul style="list-style-type: none"> ● Need to conduct a biodiversity inventory in a complex site (1) ● Investigators are based overseas and it's mandatory to negotiate with locals for scientific programs (2) ● A functional knowledge of the lingua franca is essential (2) ● Some activities need approval of land owners (2) ● Modern commentators express a need for developing local capacity as a prerequisite for long-term assessment and management of PNG's biodiversity (2) ● Results cannot be generalized to other locations in the tropics (3) ● Need for tools to improve some of the current efforts in conservation biology, systematic and applied ecology (3) ● best performed and significant amount of field work is done by PT's (3) ● Large-scale studies are better rather than isolated case-studies from research stations (3) ● Non-destructive, non-disturbing methods are better
<p>2. What does it mean for the para-ecologists?</p>	<ul style="list-style-type: none"> ● To work for a long time in remote conditions ● Tough selection (450 applicants for 5 vacancies...) ● To get trained ● Career prospects at the Center or in other organizations ● Get offered living conditions (housing, food, infrastructure, ...) ● Transition into professional life may be difficult
<p>3a. What are the challenges/ limitations ?</p>	<ul style="list-style-type: none"> ● Expensive and maintenance-intense research tool ● Projects with large PT teams (>10 PTs) took >10 years to develop ● Problem of funding ● Problem of local sustainability ● Problem of training (university system not suited to work with technicians) ● Successful in one project, but did NOT lead to widespread use ● Local capacity & infrastructure have to go hand in hand for floristic surveys (2) ● Capacity building is a slow process ● Funding agencies are unlikely to channel long-term projects ● Resistance from some members of the taxonomic community (3) ● Possible low accuracy / quality of the data (adequacy of the training)
<p>3b. What are the strengths/ opportunities?</p>	<ul style="list-style-type: none"> ● Field sampling, field logistics, specimen sorting, mounting, labeling and databasing ● Simple field and lab experiments ● Key comparative advantages: <ul style="list-style-type: none"> ○ long-term work in remote field ○ labor-intense field work ○ knowledge of species and natural history ○ monitoring and other work difficult to frame as student projects ● Parataxonomists can facilitate transfer from studies of species distribution to studies of interactions ● PT can lead long-term monitoring programs ● Integrating traditional knowledge systems (e.g. including their own reference collections (3), or knowledge of the environment) into the collections documentation (2) ● special requirements: local climbers to obtain specimens in high canopies (2)

	<ul style="list-style-type: none"> • Proven efficiency in collecting specimens • Low cost per item of information gained (3) = high cost efficiency
4. What are the characteristics?	<ul style="list-style-type: none"> • A temporary stage in the qualification process, between secondary school and university • A tradeoff between practical experience and knowledge of natural history and formal education • Results (2) <ul style="list-style-type: none"> ○ It can work for entomology, and botany ○ New findings in insect plant relationships ○ Invertebrate diversity • Scale (2) <ul style="list-style-type: none"> ○ In 5 years, 100.000 specimens where collected ○ 40 scientific papers where collected ○ Long term: 50 year cycle projects, so need to develop local capacities ○ One collector and his assistant can collect at least 30 taxa/day (a botanist will take more than 50 people to achieve this) ○ In 1 year, 13680 trap days (431.000 arthropods collected) • They are not an alternative to professional taxonomists in the field or laboratory, but rather enhance their activities and capacities
5. Others	<ul style="list-style-type: none"> • Program-defined ethical rules (2) <ul style="list-style-type: none"> ○ That qualified counterparts can make long-term contributions to biodiversity inventories ○ Local partnerships should not merely be convenient • Approach to PE development (2) <ul style="list-style-type: none"> ○ Training in fundamentals of collecting, specimen storing, identification and computer-based data management, to improve skills etc. ○ Purpose-trained PT's • Parataxonomists' need: <ul style="list-style-type: none"> • Steady careers, not ad hoc short-term projects • Long term training • Continuous supervision by researchers • Research, housing/other facilities • Varied job market • Learnings (2): <ul style="list-style-type: none"> ○ Continuous interactions between mentor/trainers and PT instills a sense of fraternity • Other studies: <ul style="list-style-type: none"> ○ Christensen Research Institute has also used PT's • Recommendations (2): <ul style="list-style-type: none"> ○ Not advisable to link PT's to institutions like pre-existing herbaria or government institutions (administrative bias, hierarchical complexity, etc.) ○ Mission/project-specific units like para-ecologist training centres ○ Feedback from professional taxonomists

[1] Vovotny, V (2012). Para-ecologists in the study and conservation of tropical rain forests: opportunities and challenges. Presentation slides presented in Hamburg University.

[2] Takeuchi, W and Golman, M (2001). Floristic documentation imperatives: some conclusions from contemporary surveys in Papua New Guinea. SIDA 19(3):445-468.

[3] Basset, Y., Novotny, V., Miller, S.M., Weiblen, G.D., Missa, W and Stewart, A.J.A (2004).

Conservation and biological monitoring of tropical forests: the role of parataxonomists. Journal of Applied Ecology 41, 163-174.

Results of the review of the para-ecologist programmes in southern Africa (BIOTA & TFO)

<p>1. Why do researchers/managers involve PE's? What are the needs?</p>	<ul style="list-style-type: none"> • One of the reasons was to provide the researcher with support, both technical and practical. It gave the researchers access to local knowledge both in terms of ecological knowledge but also cultural and social knowledge. • The knowledge of the local languages was also a vital part of the assistance from the para-ecologists. • The assistance provided the researchers with the possibility to work over large spatial and temporal scales while also reducing the costs. • The para-ecologists helped in closing the gap between researchers and the local stakeholders as well as empowering of local communities.
<p>2. What does it mean for the stakeholders?</p>	<ul style="list-style-type: none"> • The involvement of the para-ecologists was useful to build personal and professional capacity in terms of increasing the knowledge level, creating networks and broadening the cultural experience through the exposure to peoples of different backgrounds and cultures. • The project provided employment including medical insurance. • Further, the project provided the para-ecologists with a sense of ownership of the project that made the interaction with the local communities much easier.
<p>3a. What are the challenges/limitations?</p>	<ul style="list-style-type: none"> • The para-ecologists expressed concern regarding the continuity of the project, even if the project provided the para-ecologists with relative long-term employment, there were still concerns regarding the end of the project and the potential for employment after that. • There was a problem with the consistency of the supervision. • There is a risk that there will be a low local acceptance of both the research and result it provides. • The para-ecologists needed to have a strong personal commitment, which is crucial for a long term project and also for the investment in the training. • Organizing a para-ecologist program require solid organization and a long term perspective. Without this the program risk failing.
<p>3b. What are the strengths/opportunities?</p>	
<p>4. What are the characteristics?</p>	<p>Number: 8 people, 20-45 years, Place Namibia and South Africa, Scale:</p> <ul style="list-style-type: none"> • Spatial: local • Temporal: 5-6 years, • Direction: ←→ • Training: 2-3 weeks • The program result in: trained para ecologist
<p>5. Others</p>	

Results of the review challenges of the para-ecologist programmes as identified in the literature

The most important challenge, related to paraecology projects and programs that we noticed after having a look in articles which are trying to define different terms and explain the duties of different people that are engaged in ecology projects, were the mix of terminology and the language problem.

There is a confusing mix of terminology about actions and people that deal with monitoring scientific projects. For example the term parataxonomy was used by Krell (2004) as a synonym for morphotype identification and then then again linked to parataxonomist programmes in Papua New Guinea and Costa Rica). The papers were unclear about the concepts of biological diversity technicians vs. parataxonomists and vs. citizen scientists with volunteers. So it is really important to give a specific and a concrete definition about the term PARAECOLOGY and try to avoid any confusion with the other terms that can be used to describe similar actions.

Simultaneously Krell (2004) proposed the term *Parataxonomic Units* (PUs) to include and replace different terms such as *Morphospecies*, *Morphotype*, *Operational Taxonomic Unit* (OTU) and *Recognizable Taxonomic Unit* (RTU), which is producing even more problems with the terminology.

Finally the language is a big challenge and we have to ensure that training avoid language pitfalls in order to have a clear communication. Common naming vs. the scientific names during the data collection sometimes produces misunderstandings (Baraloto et al. 2007) and barriers for the para-ecologists and needs to be addressed during the para-ecologist training.

Reviewed publications

Abadie J-C, Andrade C, Machon N, Porcher E (2008) On the use of parataxonomy in biodiversity monitoring: a case study on wild flora. *Biodiversity And Conservation* 17: 3485-3500

Ahrends A, Rahbek C, Bulling MT, Burgess ND, Platts PJ, Lovett JC, Kindemba VW, Owen N, Sallu AN, Marshall AR, Mhoro BE, Fanning E, Marchant R (2011) Conservation and the botanist effect. *Biological Conservation* 144: 131-140

Baraloto C, Ferreira E, Rockwell C, Walthier F (2007) Limitations and Applications of Parataxonomy for Community Forest Management in Southwestern Amazonia. *Ethnobotany Research & Applications* 5: 77-84.

Krell FT (2004) Parataxonomy vs. taxonomy in biodiversity studies - pitfalls and applicability of 'morphospecies' sorting. *Biodiversity and Conservation* 13: 795-812

Wednesday 19th of February 2014

Discussion and revision of the definition of para-ecologists

We discussed and revised an existing definition of para-ecology:

"A para-ecologist is an expert with local knowledge, being largely trained on the job in one or more fields of ecological science. He or she thus enhances communication between local and scientific communities thus contributing to both scientific research and local development". (Definition of the para-ecology workshop in 2011, Hamburg)

Comments

- The approach: has potential to transform information to broader public (e.g. UNESCO)
- is localized? Is a PE not a PE anymore if he or she is at a different place? Is it only through local knowledge that somebody is a PE?
- What about transferable skills? If PE are trained, they can also work at other places
- Requires a sustained training effort. Refresher courses are needed. With any new project they might need new training.
- Is defined in relation to the institutional, professional training

Add-on to the definition

He or she contributes to scientific research and local capacity development as well as enhances communication between local and science communities.

Summary of comments

Para-ecology can/should not only be localized, not only be constrained to research and connect to the institutional and regional capacity development structure.

Revised version of the definition as resulted from the discussion among the workshop participants in February 2014.

“A para-ecologist is a professional with local knowledge, being largely trained on the job in one or more fields of ecological science. He or she contributes to scientific research and local capacity development as well as enhances communication between local and scientific communities.”

Application of para-ecologist approaches in management

To explore the application of para-ecologist approaches in different fields of environmental monitoring, we split into the following three groups:

- Landuse and restoration of drylands
- Water management
- Conservation and Biodiversity

Each group explored the following questions for one of the three fields of management.

- What is the need?
- How can one do it?
- What are the constraints?

Report back from the group “Land use and restoration of drylands”

What is the need? A) Challenges	<ul style="list-style-type: none"> • Land degradation • Water scarcity and quality
What is the need? B) Needed activities	<ul style="list-style-type: none"> • identification of species that are suitable for restoration and as indicators for management decisions • Seed provision for reproduction of key plant species • Identification of problems and causes of degradation from the land users’ perspective • To identify the best (acceptable, feasible...) management and

	<p>restoration practices</p> <ul style="list-style-type: none"> • To identify species more suitable for the local dryland environment, either for management and for restoration • Identification of indicators of rangeland conditions • Local work force (for long-term monitoring in remote areas)
How can one do it? (tasks of para-ecologists)	<ul style="list-style-type: none"> • Understanding land management decisions (why they manage in that way) • Environmental assessment • Continuous environmental monitoring • Facilitating communication • Provide information (as a resource person) • Identify best practice
What are the constraints?	<ul style="list-style-type: none"> • Funding to start and maintain the project • Acceptance by local communities (short-term benefits against long term sustainability) • To full-fill the expectations in the time-lapse of the project • Continuity
Possible tools that are available	<ul style="list-style-type: none"> • Phenological plant monitoring as conducted by BIOTA para-ecologists • Harvest yield assessment as conducted by The Future Okavango para-ecologists • Local level monitoring manual as developed by the Desert Research Foundation of Namibia

Report back from the group “Water management”

The general premise of the "Parahydrology" review/position/concept paper is to be that "Community participation is fundamental to sustainable management of water resources, in particular in dryland contexts in developing/emerging countries. Parahydrologists [or-alternate-term] can play a key role as facilitators between technical professionals (scientists/engineers) in facilitating dialogue with stakeholders (community members) and in integrating local knowledge to assessments of the local resource and demands upon it."

Given that we are unlikely to find studies directly relating to the “entirety” of the above statement, we'll need to structure our argument by drawing on the relevant elements/components. The group’s understanding of the plan to do this was to focus on each of our specific areas of expertise/interest:

=> Stefan will provide a synthesis of the evolution of "IWRM" including participatory approaches with examples of successes & limitations.

=> Nathan will review literature looking at "community-based monitoring" and "community-driven management."

=> Christoph and Maria will look at the specific challenges posed by dryland contexts respectively for water resources and soil (quality/nutrient/etc?) management.

=> I don't recall what if any specific focus was delegated to Yosef.

Report back from the group “Conservation and Biodiversity”

What is the need?	<ul style="list-style-type: none"> • Trainability of candidates • Local involvement of researchers who again needs local guidance • Varying level of skills from low to high (i.e. people that are specialists in some field and others with more generic knowledge) • Part-time or full-time engagement • Gender- and age balance: Male and female para-ecologists across age groups
How can one do it?	<ul style="list-style-type: none"> • Paid work • Attach a qualification • PEs-Scientists Project – Diffuse the information about the para-ecologist opportunity in the community and evaluate the reactions of the local people, in order to find the most appropriate candidate • The recruitment has to be a process (see bullet above) to find the right candidate(s)
What are the constraints?	<ul style="list-style-type: none"> • Para-ecologist selection • Para-ecologist performance • Training and skill development • Continuous motivation • To function with little supervision (independence)

Lunch

Way forward

On Wednesday afternoon, the envisaged products and way forward was discussed. We agreed on the following 4 papers of which no 2 and 3 have highest priority. Paper no 4 should be dealt with if paper no 2 has been finished.

Planned papers:

- 1) Concept papers on PEs in Dryland Management: Linda, Maria, Matilda, Marc, Kamal, Ute, Thanos
- 2) Review of PE approaches + define terms: Ute, Thanos, Marc, Linda, Matilda, Naghme, Ieda, Shekhar, Yoseph
- 3) Concept papers on PE+hydrology: Christoph, Steffen, Nathan, Maria, Yoseph
- 4) Manual for para-ecologist projects -> paper following after 2) is finalised

Action plan

Action	By whom	By when
Upload Material	All	February 2014
Compile workshop report (to be sent to all for comments)	Ute	Easter 2014
Paper review of para-ecologist approaches:		
Structure	Ute & Shekhar	End of June
Desktop research	All co-authors	End of June
Define questions	All	During workshop
Write shop		
Write shop	All authors	July 2014
Explore funding	Chris and Ute	March 2014
Paper on PEs in hydrology:		
Literature review	Chris, Nathan, Steffen and Maria	End of March
Story line	Chris, Nathan, Steffen and Maria	Mid of May

Workshop evaluation

Finally all workshop participants evaluated the workshop and compiled lessons learnt for the future by answering the questions “What was good?” and “What should we do differently next time?”

What was good?

- Group work
- Travel assistance by COST
- Location (Hamburg), which is relatively central
- Getting examples from Case studies
- Positive vibe
- Diversity of the background of the team
- Focus on outputs
- Interaction between participants
- Efficacy in covering all key information irrespective of short time

- Time efficiency
- Having a beer with Shekhar
- Process of the workshop
- Detailed information on logistics in advance
- Good information provided
- Process and facilitation
- Possibility of future cooperation
- Atmosphere: relaxed and precise
- Practical objective
- Literature was available
- Good group size
- Focus on output and action plant
- Catering
- Facility weather
- Range of methods from paper to internet talks
- Tolerance towards language difficulties
- E-learning platform
- Planning way forward
- Special opening hours of the Loki Schmidt House Museum which allowed participants to visit it

What should we do differently next time?

- Prevent confusion around the address of the e-learning platform (e/uhydro)
- Hear more about other projects of participants (needs more time).
- Invite para-ecologists s and hear about their experiences
- Presentation of own work
- Less short notice announcement of such a workshop
- Nicer time of the years
- More info on what data para-ecologists collect and how and what is unsuccessful
- Presentations at Mini-conference more focussed on stakeholder interactions
- Discuss outcome at the beginning and envisage the goal
- Rules of how to ensure that all remain active to finalise the outcome
- More time for unforeseen

Closure of workshop

Names and contact details of participants

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