

Barbets' Duet

SABBATICAL REPORT

*Report of conclusions after travels in East Africa, India & Sweden, April-July 2007
to test the thinking behind the Barbets' Duet.*

*written by
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27 July 2007*

Preamble & acknowledgements

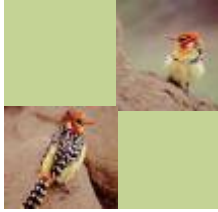
For the past ten years ago, Barbara Heinzen has been working with SID, the Society for International Development, to create national scenarios of the futures of Kenya, Tanzania, Uganda and East Africa as a whole. The scenario meetings have drawn people together from all sectors of East African society. Among other topics, the teams began discussing the role of environmental markets in East Africa's future. These markets have been hard to imagine as they are barely invented and rarely operate in the region. There have also been discussions of how such markets might be created and whether the emerging carbon markets could generate payments to people who maintain tropical biodiversity.

The Barbets' Duet proposal moves beyond these discussions to create an experiment in the invention of new institutions and markets. In order to test the viability of this proposal, Barbara Heinzen took a sabbatical trip between late April and early July 2007. She wanted to discover if there were enough people interested in participating in the Barbets' Duet experiment and if the ideas in the proposal were sound.

Given this purpose, the Sabbatical Report is not an academic survey of all the experiments in biodiversity markets taking place anywhere in the world. Rather, it is a conversation with people interested in the Barbet ideas and an invitation to them to join this new experimental space. It has been written with two audiences in mind. One is the audience of people who are familiar with the Barbets' Duet proposal and are expecting to participate in it. It is a record of our conversations. The other audience is people who are interested in the project, but have not followed its development in great detail.

During her sabbatical, Barbara Heinzen travelled to East Africa, India, Nepal and Sweden. In each country and city she worked with people who were interested in the Barbets' Duet and joined her in the interviews and visits she made. In Tanzania, she was also joined by Eileen Burke, her colleague in London, for two weeks. Elsewhere, Magode Ikuya in Uganda, Aidan Eyakuze and Mwajuma Masaiganah in Tanzania, Oby Obyerodhyambo in Kenya and Mahmoud Kombo in Zanzibar, were all invaluable colleagues in talking through the issues recorded here. In India, the Vanarase family in Pune, and Aditi Nath Sarkar in Ahmedabad and Calcutta provided insight and introductions to a vast country Barbara Heinzen had not visited before. In Nepal, Thupten Gyalpo Lama acted as host and guide, providing another perspective on the Barbets' Duet from a very different situation. In the Tallberg Forum in Sweden, the members of the 'Missing Markets' discussion group were extremely helpful in testing the thinking. A full list of people met during these travels appears at the back of the report. Thanks are due to all of them for their assistance.

Because of the lessons we all learned, this report has been written as a shared document. However, Barbara Heinzen takes full responsibility for any glaring errors in the report and welcomes any corrections.



Barbets' Duet

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SABBATICAL REPORT SUMMARY

Goals of the Barbets' Duet & Sabbatical

The Barbets' Duet is an experiment with three objectives: (1) to create new institutional forms which integrate ecological principles in everyday social, political and economic affairs; (2) to use these new institutions to generate incomes for people whose knowledge serves to maintain and increase environmental resources, especially biodiversity; (3) to test whether this income can be derived from greenhouse gases emissions trading or similar environmental trading schemes.

This experiment is currently focused on East Africa, but will include people and learning sites from any society. It seeks to integrate older traditions of ecological management with modern market mechanisms in ways that benefit rural people, biodiversity as well as potential investors and customers. Multiple experiments will be organised around people with access to land that is, or can be, managed to support biodiversity. As part of the experiments, these sites will be connected to markets able to generate incomes.

This sabbatical sought 1) to test the conceptual framework of the Barbets' Duet¹; 2) to identify possible Barbet Learning Sites in East Africa; 3) to learn from comparable projects in India; 4) to look at business models and financing; and 5) to test whether the focus on East Africa is justified.

Working Conclusions

1. Barbet learning sites in East Africa are available.

During discussions, many of the people met in East Africa had ideas for starting a Barbets' Duet experiment on sites they know. They are keen to find new sources of income that are socially and environmentally sound, reflect a new model of modernisation, and build on African knowledge.

2. Multiple markets exist, but are hard to reach, hard to persuade & can be unfair.

Many different markets could support high biodiversity. Some exist already, others need to be invented. There is already a market for tangible goods, such as charcoal, timber, edible and medicinal plants, etc., and potential markets for environmental benefits such as clean water, clean air or habitat protection. These markets have different potential buyers. Some will be in the **utility market**, buying the things they use every day – such as food or building materials or even clean water and air. In the **insurance market**, people will pay to maintain habitats and high biodiversity that reduce risks from climate change, flooding or loss of food species to diseases. There is also the **aesthetics market**. This is the market of eco-tourism and fashion. Finally, there is the market for **intellectual property** which is already of considerable interest to pharmaceutical companies and agricultural seed companies looking to extend the range of products they offer. All these markets are hard to reach, can currently be unfair to small holders, and will require creative branding and marketing that can be trusted.

¹ See *Conceptual Framework*, dated 16 October 2006, in Appendix 2. The Objectives and Working Assumptions stated here are copied from that Framework.

3. Carbon markets are growing fast, and should be used in Barbet experiments.

There are two types of carbon markets relevant in East Africa, a compliance, or CDM², market, established under the Kyoto Protocol, and a voluntary market. As one person said, “There are a lot of tricksters in the voluntary market and a lot of bureaucracy in the CDM market”. The voluntary market will be of most interest to participants in the Barbets’ Duet and is also where the fastest innovations are taking place. We need to understand the carbon markets and learn to use them effectively.

4. We need to invent the whole chain, from capital markets to retail sale.

It is not enough to invent ‘retail markets’ that will pay people to maintain or increase biodiversity. We also need capital market tools to provide the investment funds for building up ‘environmental products’ to be sold. These tools are currently absent, but could be invented. Their absence raises an interesting issue: to what extent can or should the start-up costs of the Barbets’ Duet be met through charities or capital markets or through participants’ self-financing?

5. The question of property rights is central and unpredictable.

The development of new markets to support biodiversity will require new financial tools and these in turn will require new property rights, some of which could be modelled on older African customs. Identifying and agreeing on new property rights is a huge challenge. Without clear property rights, no markets can function. Without rights that encourage healthy environments, however, there may be very little for any market to sell.

6. Equitable cultural engagement is necessary and hard.

The ideal of equitable cultural engagement is at the heart of the Barbets’ Duet experiment – and is reflected in the duet of our name. However, it remains to be seen whether it can be achieved in practice, either at the local level or internationally.

7. New markets carry old risks.

As biodiversity markets develop, they will face a variety of risks, which are already visible and well known: they could encourage further concentration of wealth, loss of intellectual property, and over-killing or over-harvesting of wild products. These risks will need to be managed.

8. India’s development is a warning, not a model.

India may be a success in industrial terms, but the price for this success is looking very, very high. Rapid industrialisation and growth, regardless of the cost, is causing serious environmental damage and social distress. This policy is backed by a strong state with a clear commitment to the paradigm of industrial modernisation. There seems to be little effective opposition to this thinking or any discussion of alternatives. There are, however, two organisations from which we can learn: Navdanya is committed to organic farming and biodiversity; SRISTI gathers grassroots innovations.

9. The focus on East Africa is justified

The benefits of starting the Barbets’ Duet in East Africa were highlighted after the visit to India. Four aspects of East Africa were important. First, necessity is the mother of invention. East Africa cannot compete with India and China, and therefore needs another model of prosperous modernity. Second, East Africa’s greatest wealth is biological, as shown by the international reputation of its landscapes and wild populations. Third, weak states are forced to be flexible states that rely on inventive

² CDM stands for ‘Clean Development Mechanism’, one of the tools of the Kyoto Protocol.

populations. Fourth, small societies and social networks accelerate the process of invention. By comparison with India, East Africa is a small society, capable of rapid invention and evolution.

10. ‘I warn you, it will take 20 years.’

During this sabbatical, B Heinzen noticed that the most impressive projects in East Africa and India are all roughly 20 years old. They also share another feature: the people who founded these projects are still working on them. Commitment, continuity and time are all essential.

11. Next steps: the Invention Convention

During each discussion, it was agreed that all those who would like to participate in the Barbets’ Duet are invited to send to B. Heinzen a short description of the experiment to be tried. As learning sites are proposed, they will be posted on the Barbets’ Duet website space. Once a sufficient number of proposed sites are put on the website, we will hold an “Invention Convention,” somewhere in East Africa, for about three days. During this time, we will present and critique each proposed experiments. In addition, in order to test new rules for generating high biodiversity, social equity and good incomes, we will invent and play a game. This might be a board game like Monopoly, or role-playing game of some kind, or something else entirely.

12. Proposed deadline

In the interests of maintaining momentum, it is proposed that we hold the “Invention Convention” by the end of February 2008.

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Objectives of the Barbets' Duet

The Barbets' Duet is an experiment with three objectives: (1) to create new institutional forms which integrate ecological principles in everyday social, political and economic affairs; (2) to use these new institutions to generate incomes for people whose knowledge serves to maintain and increase environmental resources, especially biodiversity; (3) to test whether this income can be derived from greenhouse gases emissions trading or similar environmental trading schemes.

This experiment is focused on East Africa and seeks to link traditional ecological management with modern market mechanisms in ways that benefit rural people, biodiversity and investors.

Working assumptions

To date, we have been guided by the following working assumptions: 1) the primary relationship is between people who manage the land (including marine resources) and those who manage financial markets. To increase healthy, bio-diverse landscapes, both types of managers need to learn new skills and develop new rules in the context of their practical affairs. 2) For this to occur, environmental managers (traditional and modern) and financial market managers need to engage with each other directly. 3) This engagement will be used to design multiple experiments to test different institutional arrangements linking peoples, land and markets. 4) In designing these experiments, both modern and traditional knowledge have something to contribute. 5) Each experiment will have people from different cultures working together equitably in practical settings. 6) Multiple experiments will stimulate rapid learning.

Sabbatical goals

This sabbatical had several important goals: 1) to test the conceptual framework and working assumptions of the Barbets' Duet³; 2) to identify possible Barbet Learning Sites in East Africa; 3) to learn from comparable grassroots experiments in India; 4) to start thinking about possible business models and financing.

Focus on East Africa

The Barbets' Duet has grown out of ten years work with the East African scenarios projects launched by SID, the Society for International Development. The Barbets' Duet is building on the relationships and knowledge created during those ten years in order to develop practical experiments in institutional invention. The sabbatical also tested whether this East African focus is justified.

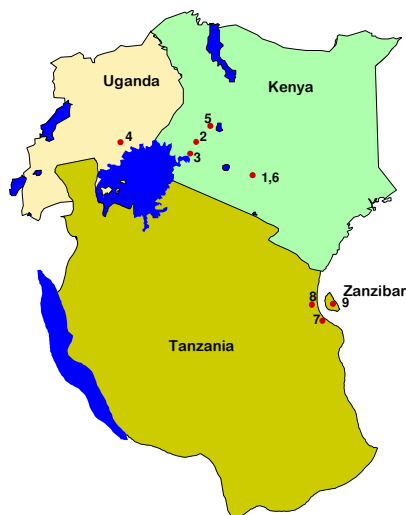
Itinerary

In East Africa, discussions took place with between 40-50 people, individually or in groups between 29 April and 27 May 2007. In Kenya, these meetings were in or around Nairobi, Kisumu and Baringo. In Tanzania, they took place in Dar es Salaam, Bagamoyo and Zanzibar. In Uganda, all meetings were in Kampala.

³ See *Conceptual Framework*, dated 16 October 2006, in Appendix 2. The Objectives and Working Assumptions stated here are copied from that Framework.

Travel in India and Nepal, took place between 28 May and 24 June 2007. Visits were made to seven different places, with key interviews taking place in Pune, Ahmedabad, New Delhi and Kolkata. Discussions in Nepal largely concerned the possibility of a national civil society scenarios exercise, on the model of work done in East Africa. However, the potential benefit of creating biodiversity markets in Nepal was frequently discussed, as was the possibility of establishing Barbet learning sites.

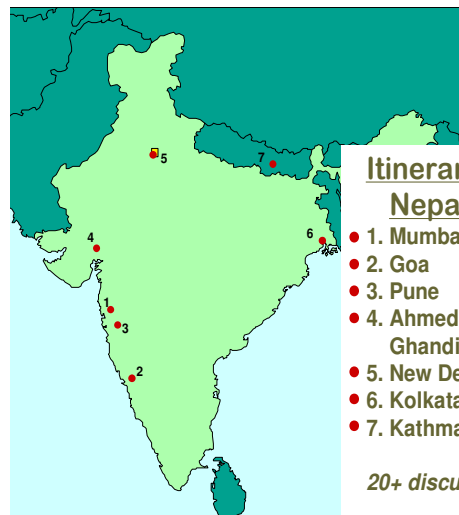
Following this extended trip to East Africa and South Asia, B. Heinzen went to the Tallberg Forum in Sweden, 28 June – 2 July, where a number of business people, academics and NGOs were meeting, most of them from the industrialised countries. She then travelled to the Hague in the Netherlands to brief several members of the SID East African team who were meeting there.



Itinerary

- 1. Nairobi
- 2. Kericho
- 3. Kampala
- 4. Kisumu
- 5. Baringo
- 6. Nairobi
- 7. Dar es Salaam
- 8. Bagamoyo
- 9. Zanzibar

40+ discussions



Itinerary: India & Nepal

- 1. Mumbai/Lonavala
- 2. Goa
- 3. Pune
- 4. Ahmedabad & Gandhinagar
- 5. New Delhi
- 6. Kolkata
- 7. Kathmandu

20+ discussions

Working conclusions

These working conclusions focus on East Africa, but reflect discussions in all places.

1. Barbet learning sites in East Africa are available.

During discussions, many of the people met in East Africa had ideas for starting a Barbets' Duet experiment on sites they know. People are keen to find new sources of income that are socially and environmentally sound, reflect an alternative model of modernisation, and build on African knowledge. Many discussions generated a sense of excitement and purpose. Those who want to participate come from a variety of situations. Some own a few acres of land; others are working with villages or cooperatives. A few are working with national wildlife services.

People also had a great variety of experimental ideas reflecting different ecological and social conditions: cultivation of medicinal plants; restoration of degraded farm land; restoration of grasslands or drained swamps; management of coastal areas; tree plantations of mixed species or specialised crops, such as the shea butter tree, or ebony; and the creation of habitats for wild species such as the red colobus monkey.

As Joel Okao said in Uganda "You provide the markets, we will provide the experiments!"

2. Multiple markets exist, but are hard to reach, hard to persuade & can be unfair.

Multiple markets exist: Magode Ikuya in Uganda identified several different kinds of markets that could support biodiversity. There are already markets for "tangible" goods, such as charcoal, forest or woodlot timber and edible wild foods, including plants and bush meat. In Baringo, Kenya, the RAE Trust has worked with local people to restore degraded grasslands around Lake Baringo. Not only has

much biodiversity recovered, but local incomes have improved through the sale of fattened animals, honey, grass seeds, hay and thatching.

Magode also identified markets selling ‘intangible’ environmental goods, such as the sequestration of carbon, watershed services, or a healthy habitat supporting important biodiversity. Some of these markets are developing now, such as the markets for carbon sequestration, described in more detail below. Others are still only an idea.

Aidan Eyakuze in Tanzania classified Magode Ikuya’s list of potential markets according to the needs they meet and the buyers who might be interested in them. He identified three markets, to which can be added a fourth.

- First, the **utility market**. This is the market for buying and selling things we need every day. Both tangible goods and less tangible environmental goods, such as the cleanliness of water and air, are and could be sold here.
- Second, the **insurance market**. In this market, the protection of habitats and their biodiversity acts as insurance against future extremities. For example, swamps reduce the risks of flooding as well as supporting great varieties of life. Similarly, the existence of a great variety of domestic rice seeds can help farmers adapt to unpredictable changes in farming conditions. When salt intrusions hit the rice crops in Orissa, India, for example, Navdanya’s seed bank had a salt tolerant rice variety available.
- Third, the **aesthetics market** sells what Aidan called ‘bragging rights’ – bought, for example, by tourists hoping to see the Big Five African mammals. This market also includes the more meditative experience of being in the wild.
- Fourth, the **intellectual property** market is already of interest to pharmaceutical companies seeking new compounds and agricultural companies looking for resistant crop varieties.

This table summarises the different markets identified by Magode and Aidan. By classifying markets in this way, it becomes easier to identify potential buyers of products supporting biodiversity.

BIODIVERSITY MARKETS <i>(With thanks to Magode Ikuya & Aidan Eyakuze)</i> Nature of market	Current tangible markets: Moveable products <i>Tangible, portable, Species-specific</i>	Future intangible markets: Environmental products <i>Intangible, immoveable, Site-specific habitats</i>
Utility: creating things we need e.g. clean water, air, food, medicine, cosmetics, building materials	<ul style="list-style-type: none"> • Timber & grasses <i>(wild & domestic)</i> • Medicinal plants • Domestic biodiversity <i>(e.g. seed & semen banks)</i> • Edible wild: <i>(e.g. roots, bush meat)</i> 	<ul style="list-style-type: none"> • Ground water recharge • Water purification • Carbon sinks <i>(e.g. swamps, grasslands, uncut forests)</i> • Waste management <i>Decomposition services</i>
Insurance: reducing risks of climate change, flooding, loss of ground cover due to climate extremities; loss of food species to disease	<ul style="list-style-type: none"> • Woodlots & grasses • Medicinal plants • Domestic biodiversity <i>(e.g. seed & semen banks)</i> 	<ul style="list-style-type: none"> • Flood control • Micro-climate change • Wild biodiversity • Carbon sinks
Aesthetics Fashion, bragging rights, tourism, meditation	<ul style="list-style-type: none"> • Edible wild: <i>(e.g. roots, bush meat)</i> • Wild biodiversity 	<ul style="list-style-type: none"> • Species habitats
Intellectual property Genetic reserves	<ul style="list-style-type: none"> • Medicinal plants • Domestic biodiversity <i>(e.g. seed & semen banks)</i> • Wild biodiversity 	<ul style="list-style-type: none"> • Species habitats to support genetic reserves

Eco-tourism market is narrow and elite: The most advertised biodiversity market at present is eco-tourism, part of the ‘aesthetics’ market. Yet, in the words of Rose Lyimo in Dar es Salaam, this market “is too elite and too narrow”. The best example seen on this trip was the revenue-sharing scheme developed by Ali Mwinyi, Director of the Jozani Forest in Zanzibar. This scheme uses tourist income collected from visitors to the Forest who want to see one of the largest surviving populations of red colobus monkeys. The plan splits tourist revenue into seven different shares. Some goes to government departments, some to the Jozani Forest reserve, and the rest to local communities.

Revenue sharing has clearly benefited the forest, the monkeys, whose populations are rising again, and local villages, one of which now has a solar panel in the school, allowing children to study at night and improve their exam results. However, this income is insufficient to meet all needs, leaving the Jozani Forest’s own facilities to suffer from neglect and lack of repair. Ali Mwinyi said that “It feels like ‘kill me, but save my kid’, because we are saving this forest forever, but hurting here.” New sources of income are clearly required.

Markets are hard to persuade, hard to reach and often unfair: In their search for new income, Dr Bakari, Director of Zanzibar’s Department of Commercial Crops, Fruits and Forestry, Zanzibar, was sceptical about new international environmental markets. “Biodiversity markets? Forget about it! Carbon sequestration? Forget about it!” He dismissed carbon sequestration payments made to villagers in Bushenyi, Uganda, saying that local people got 3-400 shillings for every 2000-3000 shillings made by the brokers, a trade he saw as deeply unfair. Even local markets are hard to persuade. Dr. Bakari mentioned the possibility of being paid for the water-catchment services provided by the Jozani Forest: “The problem is people already get the services for free.” So why would they pay?

Even existing, tangible, markets can be hard to reach and unfair. The Tanzania Carvers’ Association in Mwenge, Dar es Salaam, and the Msichoke Seaweed Cooperative near Bagamoyo both talked about the difficulties of selling their products. “We need better markets. We need direct access to our markets.” The wood carvers rely on visiting tourists, with little access to wider markets, while the seaweed farmers rely on middlemen who often take most of the benefits.

Summing up: several people have said, ‘The markets are there!’ but it will clearly take good distribution, communications, education and some very clever branding to reach them.

3. Carbon markets are growing fast and should be used in Barbet experiments.

The Barbets’ Duet wants to test whether new incomes can be provided through the emerging markets in greenhouse gas emissions, what are known as the carbon markets. In Uganda, three of us (Magode Ikuya, Joel Okao and B. Heinzen) spent considerable time with Bill Farmer. In the past year, Bill Farmer has set up a new business, the Uganda Carbon Bureau, to broker carbon sequestration payments to people maintaining Ugandan forests. He is also developing the Ututu Plan, to bring smallholders into the carbon trading system.

Broadly speaking, there are two types of carbon markets relevant in East Africa, a compliance, or CDM⁴, market, established under the Kyoto Protocol, and a voluntary market. “There are a lot of tricksters in the voluntary market and a lot of bureaucracy in the CDM market,” said Bill Farmer.

In Kyoto’s compliance or CDM market, anyone offering to sell sequestered carbon must be certified. This is a highly bureaucratic process, usually costing \$100,000. This kind of money is only available to large organisations, which at present puts this market is out of reach of smallholders.

The Voluntary Carbon Market, by comparison, is more open to smallholders and more innovative, but also more like a charity than a business and it can be less reliable. Nonetheless, future innovations are likely to come from the more flexible voluntary market, which is already experimenting with payment

⁴ CDM stands for ‘Clean Development Mechanism’, one of the tools of the Kyoto Protocol.

for leaving forests in place – what is known as “avoided deforestation”. The voluntary market is also testing the carbon sequestering capacity of grasslands and swamps which store carbon in the soil, while forests absorb it in trees which can later burn or decompose, releasing CO₂.

Bill Farmer helped to arrange the Bushenyi carbon payments to villagers. Unlike Dr. Bakari in Zanzibar, he believes carbon markets can improve Ugandan livelihoods and environments. However, for those of us concentrating on biodiversity, there are currently few links between carbon markets and biodiversity or social welfare. One is the Climate, Community and Biodiversity Alliance in California which offers higher payments to people who not only sequester carbon, but also support greater biodiversity and social equity. Bill Farmer described to this as selling “gourmet carbon.”

Despite their many difficulties, Magode Ikuya, Joel Okao and Barbara Heinzen all felt that carbon market mechanisms were important. We need to understand them and learn how to use them in our own experiments. For his part, Bill Farmer needs sites where he can test his Ututu Plan as it develops.

4. We need to invent the whole chain from capital markets to retail sale.

At the meeting in Tallberg, Sweden, B. Heinzen joined about fifty people talking about the role of capital markets today, especially their role in social and environmental sustainability. This conversation, over two days, led to a short polemical presentation called “Missing Markets”. This presentation gave two examples of environmental restoration visited during this sabbatical: one in Baringo, Kenya, and another near a dam outside Pune, India. In both cases, environmental restoration was financed by charity or aid, while the capital markets were “Missing in Action.”

Capital markets: missing in action

Degraded → recovered lands

From this...  ...to this. 

RAE, Baringo Kenya

Backed by new rights, knowledge & incomes

New land rights, both private & communal.  


New incomes from grass seeds, thatching, animal fattening & beekeeping. 

Can we invent a new paradigm?

 Irrigation dam Near Pune, India June 2007

 Top soil removed to make dam, Firewood removed for cooking

Restoration of biological wealth

  Sanjay & Minalnee

 Downstream wetland restoration, 30 acres

 Upstream forest restoration, 50 acres

Both restoration projects were financed by aid & charity, not capital markets

This polemic had two outcomes: first, it alerted a few people at the Tallberg Forum to the failure of existing financial systems in delivering necessary environmental investments. Second, it illustrated the fact that it is not enough to invent ‘retail markets’ that will pay people to maintain or increase biodiversity. We also need capital market tools to provide the investment funds for building up ‘environmental products’ to be sold. Bertram Eyakuze and his financial partner, Carlos Austin, speculated about creating a ‘Biodiversity Bond’ to be sold to young people who have the greatest stake in the long term future.

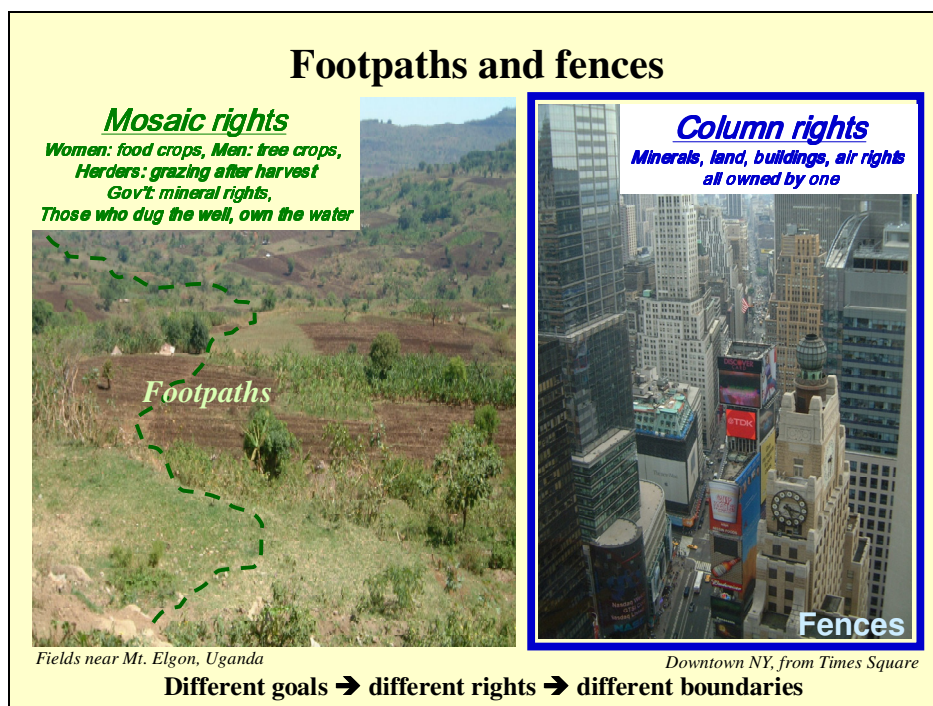
The question of capital markets is immediately relevant as we ask ourselves how the next steps in the Barbets' Duet might be financed. Should we be asking charity foundations and donors for investment money? Would we be wiser to finance our experiments using the capital markets in East Africa or internationally? Or, should each participant in the Barbet Duet be self-financing, as we are now? What are the consequences of these different paths?

5. The question of property rights is central and unpredictable.

New markets → new financial instruments → new rights: The development of new markets to support biodiversity will require new financial tools and these in turn will require new property rights. Sammy Muvelah of Zimele Asset Management in Nairobi put the central questions very neatly:

- *What rights will exist?*
- *What rewards will go with what rights?*
- *How will these rights be distributed?*
- *What time periods will be used for rewarding these rights? 1-5 years? 20 years? 100 years?*

African knowledge & institutions – what has survived? In answering these questions, there is a huge diversity of older East African traditions which used different property rights. These older rights can be described as mosaic rights, because in a single acre of land different people could hold different rights in different resources exercised at different times. By comparison, property rights in Western industrial societies are 'column rights', held by one person and extending as a 'column' from air rights overhead to mineral rights underground. Column rights are one of the cornerstones of most industrial societies, while mosaic rights are more often seen in rural, land-based societies.⁵



When property rights were discussed in East Africa, most agreed that mosaic rights created greater biodiversity and social equity than column rights. However, people also agreed that mosaic rights traditions are being replaced or ignored. Population pressure, migration and government policies all encourage the privatisation of communal land and the rapid replacement of mosaic rights with column rights. Privatised land is also preferred by individuals because it offers greater economic benefits and greater security of title, according to Elizabeth Meyeroff of the RAE Trust in Kenya.

⁵ See the SID *State of East Africa Report 200*, for a discussion of mosaic v column rights and the tension of two worlds in East Africa. Anil Gupta describes similar mosaic rights in India as 'multi-layered rights'.

Ironically, just when East African traditions should provide a valuable library of institutional ideas for use in Barbet inventions, the knowledge of older African institutions is slipping away. It remains to be seen how much has survived and is still relevant today.

Private property ↔ community rights ↔ public domain: In both East Africa and India it is much harder to secure community rights than either individual rights or public domain rights. Anil Gupta, founder of the Honey Bee Network in India, went to the European Patent Office (EPO) in 1993 to ask how he might register proprietary community knowledge so that the community could earn royalties on their knowledge. “We don’t do it, and we don’t know how to do it,” said the EPO. Vandana Shiva, founder of Navdanya, an Indian NGO which promotes organic farming and domestic biodiversity, also went to the EPO in 1995 to contest a patent on medicinal properties of the neem tree, arguing that these properties were common knowledge among rural people in India. After ten years, the patent was overturned, protecting the public knowledge of the neem tree, but not creating any community rights in that knowledge.

Both Indian examples illustrate another reason why mosaic rights systems are being extinguished: they lack the support of powerful formal institutions. In this situation, if our Barbets’ experiments discover that older, communal systems of rights are better at promoting biodiversity and social equity, they will then have to find ways to protect those communal rights against the ignorance of formal governance structures like the European Patent Office and national governments.

Taken as a whole, the issue of property rights is one of the biggest challenges facing the experimental spaces of the Barbets’ Duet. Without clear property rights, no markets can function. Without rights that encourage healthy environments, however, there may be very little for any market to sell.

6. Equitable cultural engagement is necessary and hard.

Over the past 150 years, Western societies have led the creation of industrial processes and the markets that support them. Their success has been widely imitated around the world. Now that the greatest challenges we face are environmental, there is a corollary assumption that Western societies will again lead the way in meeting those challenges. This assumption, allied to the belief that all societies want to industrialise, tends to dismiss the knowledge and institutional legacies of less industrialised parts of our societies, both nationally and globally.

Both the Abila Creative Centre outside Kisumu, started by Oby and Hilda Obyerodhyambo, and the RAE Trust in Baringo, started by Murray Roberts and Elizabeth Meyerhoff, have had experience with Western interns joining their projects on a temporary basis. In both places, we discussed the difficulties of integrating Western volunteers in an African setting. Two issues stand out: first, the interns from abroad have needed time to understand the realities of life in Kenya; second, the Kenyans working with them have needed sufficient confidence in themselves and their society to engage effectively with the visitors. The ideal of equitable cultural engagement is at the heart of the Barbets’ Duet experiment – and is reflected in the duet of our name. However, it remains to be seen whether it can be achieved in practice, both at the local level, or internationally.

An important practical consequence of such attitudes is that it may be difficult to gain international support for a process of institutional invention in Africa designed by Africans. If so, the whole chain of relationships, from capital to retail markets, may need to be invented by East Africans working largely on their own.

7. New markets carry old risks.

As biodiversity markets develop, they will face a variety of risks, which are already visible and well known. Aidan Eyakuze worried that new environmental incomes would encourage more land grabs and concentration of income in a few hands. Where medicinal plants are involved, there are risks of losing intellectual property rights, especially when those rights are held by communities. “Lawyers

don't understand community rights," said Sophia Apio Kerwegi in Uganda, where she runs the National Chemotherapeutic Institute. There are also risks of over-exploiting wild products, such as bush meat or edible wild plants. In Kenya, where wild game had been farmed on game ranches, Murray Roberts reported that banning the sale of game meat actually increased poaching. In Zanzibar, Ali Mwinyi, said it would be possible to cultivate bush meat for sale by maintaining habitats and buying breeding stock, but he worried about encouraging over-killing of wild animals. In short, there are, at least, three big risks in linking markets and biodiversity: further concentration of wealth, loss of intellectual property, and over-killing or harvesting of wild products.

8. India's development is a warning, not a model.

This was Barbara Heinzen's first trip to India, but many of the disruptions of development were familiar from time in East Africa and elsewhere. Because it was her first visit, the observations that follow here may be too hasty in their conclusions and should therefore be read with some caution.

In addition to short trips around Mumbai and Goa, there were four places with a lot to teach us in the Barbets' Duet: the Ecological Society in Pune, SRISTI in Ahmedabad, Navdanya in New Delhi, and the East Calcutta Wetlands.

Ecological Society, Pune: Pune was the first place Barbara visited. Here, she spent time with Mrinalinee Vanarase, the new Director of the Ecological Society. Mrinalinee and the rest of the Vanarase family helped Barbara understand the pace of growth and the challenge of protecting environmental quality during this period of India's development. The Ecological Society has also undertaken impressive restoration work of damaged environments near Pune.

SRISTI, *Society for Research and Initiatives for Sustainable Technologies and Institutions*, Ahmedabad: In Ahmedabad, Aditi Nath Sarkar accompanied Barbara during a day and a half of interviews with Professor Anil Gupta and other members of the team working to gather, document, share and commercialise grassroots knowledge and innovations. This work began twenty years ago, and is now organised around three or four different organisations under the SRISTI umbrella. The oldest is the Honey Bee Network, which gathers and shares grassroots innovations. That information is catalogued and reviewed by the National Innovation Foundation. There is also a SRISTI laboratory for testing the chemical properties of plants and remedies, and a business development unit, known as GIAN – *Grassroots Innovation Augmentation Network*. Their experience in gathering and sharing grassroots knowledge is impressive and instructive.

Navdanya, New Delhi: Barbara Heinzen's visit to Navdanya was far too short, but enough to realise that this may be an important partner in India for the Barbets' Duet. Navdanya, under the leadership of Dr Vandana Shiva, has worked to promote organic agriculture and the conservation of biodiversity among Indian farmers. They have trained people from East Africa, with the support of the Gaia Foundation in London, and have shown that field outputs and farm incomes can be successfully doubled and tripled through biodiversity conservation and sustainable agriculture practices.

East Calcutta Wetlands: Aditi Nath Sarkar also introduced Barbara to the East Calcutta Wetlands, near his home in Kolkata. This is an ecosystem of 12,500 hectares (31,000 acres) which contains fish farms, rice paddies and market gardens. The most interesting aspects of the Wetlands is that they are largely manmade and have evolved since the 19th century when Calcutta's wastewater and rubbish was diverted to these wetlands and then exploited by local farmers. As an example of evolving grassroots ecological knowledge, this is perhaps the most impressive site she visited. The wetlands are also highly productive: not only do they treat Kolkata sewage, they provide a large share of the city's food supply. This is the only man made Ramsar⁶ site in the world, but is under threat from urban development which has already diminished its area.

⁶ The Ramsar Convention is an intergovernmental treaty for the conservation and wise use of wetlands and their resources. There are presently 155 Contracting Parties to the Convention, with 1675 wetland sites of international importance.

Overall impressions of India: The strongest, overwhelming impression in India is of a profound and rapacious commitment to rapid industrialisation and growth, regardless of the cost. In Goa, whole hillsides were being dug out to provide material for bricks to build speculative holiday homes on the coast. In Mumbai, wetlands are being drained for the development of new high-rise offices and flats. In Pune, Mrinalinee drove us along a busy city road that only ten to fifteen years earlier been a place she cycled to with her family for picnics. In the capital of Gujarat, Gandhinagar, large new homes were being built on dry shrub land previously used by grazing cattle and wildlife. In Kolkata, a whole new city – Salt Lake City – had been built in the East Calcutta Wetlands, in some cases replacing viable market gardens and fishponds. In New Delhi, Barbara was told that the government’s “Special Economic Zones” – often created by dispossessing villagers of their land – were in fact largely being used by speculators in middle class housing, with 350 SEZs approved near cities. A film, *Running Out of Time*⁷, made at their own expense by a group of Kolkata intellectuals, shows the destruction of tribal lands through coal mining and deforestation. People who had made a viable living by farming and foresting the same land for several thousands of years were now leaving their homes for six to eight months each year, simply to find enough work and food to eat.

Climate change was also very present. This trip came at the hottest time of year, just before the monsoon arrived, but her hosts were noticing dramatic changes in the seasons. In Pune, Barbara was told that the hottest days of the year had previously reached 35 degrees centigrade. Now, they routinely reach 40 degrees. From the air, the land between Pune, Ahmedabad and Delhi seemed to be desperately dry and over-engineered, with straight blue-water canals next to rivers holding nothing but damp sand. India may be a success in industrial terms, but the price for this success was looking very very high. Especially after watching the film, *Running Out of Time*, Barbara was haunted by a premonition that large scale famines would hit the country in the next five years.

The other important observation was how strong the Indian state is compared to states in East Africa. It is a federal system, but both state governments (which can be larger than East African nations) and the central government have considerable authority and power. In each state she visited, this power is dedicated to the paradigm of highly engineered, industrial and technological growth. It is a hugely powerful paradigm that leaves little room for other visions of the future.

There also seemed to be a lack of effective opposition to this development or any serious thinking about its risks. Too many people are currently benefiting from the results and see no reason to complain. Those who are losing out – like the tribal peoples shown in the film – are poor, marginalised or uneducated. Equally, there was evidence that when people tried to question this paradigm they were made to suffer for their dissent. In Kolkata, we met with Dhrubajyoti Ghosh, who published *Ecology and Traditional Wetland Practice: lessons from wastewater utilisation in the East Calcutta Wetlands* in 2005. Ghosh began working with the East Calcutta Wetlands in the 1980s while in the West Bengal State Planning Board. He was instrumental in having the wetlands declared a Ramsar site. This was opposed by many who saw the Ramsar declaration as more of a threat than an opportunity. More recently, according to his publisher, Ghosh’s book is not distributed through the main channels because these are all owned by government.

In a period when we need profound systemic invention, a strong state committed to a powerful paradigm is a handicap. Beneath all the signs of success, there were worrying signs of appalling future disasters.

9. The focus on East Africa is justified.

These overall impressions of India – currently celebrated as a model of success – put the potential of East Africa in a new perspective. The strong personal and professional relationships created during the SID scenarios work from 1997-2007 already justify the focus on East Africa. However, the month spent in India reinforced that focus for the following reasons.

⁷ *Running Out of Time*, a Shape Production. See www.runningoutoftime.co.in.

Necessity is the mother of invention. As the scenarios work has evolved over the past ten years, it has become increasingly obvious that East African economies cannot compete industrially with India and China. However, the old ways won't work because populations in the region have tripled in the region in the past forty years. Arable land is becoming scarce and infertile, the renowned biological diversity of the region is seriously undermined, and rainfall patterns are changing, further undermining rural incomes. Urbanisation is accelerating rapidly, but not always providing the livelihoods people need. The necessity to create a new source of income based on the strengths of East African societies, wildlife and landscapes is overwhelming.

East Africa's greatest wealth is biological. The unique biodiversity of the region is legendary in the rest of the world, but currently given very little economic value. Moreover, many people remain on the land (over 50% of the population) and have considerable knowledge of their local environments, especially in the older generations. Even urbanised professionals are often only one generation removed from the land and still have strong ties to particular places. Furthermore, the protection of wildlife in East Africa has a long history and considerable experience exists of conservation in the region. While the national parks have been dismissed as another form of land grab by many, most people honour the need to protect all forms of life; they just want to be included in that protection, and would welcome an economically productive way to reverse the environmental degradation around them.

Weak states can be flexible states relying on inventive populations. The Indian state is a strong, ideologically committed backer of industrial development in India. The strength of the state, however, also makes it very rigid. East African states, by comparison, are quite weak, and have been unable to impose any agreed model of development on their societies. Nor have they been able to impose solutions on their own populations who are – of necessity – highly inventive as they look for new means to survive. This inventiveness is especially valuable at a time when societies everywhere are facing unprecedented challenges.

Small societies and social networks accelerate the process of invention. Finally, East African societies are still relatively small, especially when compared to Indian societies. They are also less stratified and more socially mobile. Communication between different sectors of society can be very rapid. Personal reputations and networks of trust are particularly important and many such networks exist in East Africa and overlap with each other. These are the same ingredients behind earlier systemic social inventions. As Benjamin Franklin said to his fellow rebels at the time of the 18th century's American War of Independence, "Either we all hang together, or we all hang separately." East Africans are learning how to hang together.

10. The 20-year rule: 'I warn you, it will take 20 years.'

In 2004, when B. Heinzen went to see Richard Sandor, the inventor of the first sulphur emissions trading market, she put the idea of the Barbets' Duet to him. "Good idea," he said, "but I warn you, it will take 20 years."

During this sabbatical, B Heinzen noticed that the most impressive projects in East Africa and India are all roughly 20 years old. They also share another feature: the people who founded these projects are still working on them.

- In Kenya, the RAE Trust on Lake Baringo has an impressive record of social and environmental restoration. It was started and is still run by Murray Roberts and his wife, Elizabeth Meyerhoff, who have lived in Baringo since they got married. Murray grew up there. Their commitment to the local community, and the trust which has very slowly built up between them, is based on hard work, imagination and continuity.
- In Zanzibar, work to save the red colobus monkey began twenty years ago in the late 1980s. Ali Mwinyi, of the Zanzibar forestry department, negotiated with all concerned to use road bumps to slow traffic that had been killing monkeys crossing the road running through the

Jozani Forest. He has continued working with people around the Jozani Forest since then. There is now both a revenue sharing agreement and a Resource Use Management Agreement that protects the forest and the livelihoods of local people.

- In India, Anil Gupta, based at the Indian Institute of Management in Ahmedabad, started the Honey Bee Network in the 1980s. He sent a letter to 400-500 academics and NGOs asking them to record any grassroots innovations that might be useful to others. Today, there is an online catalogue of 65,000 innovations and three other organisations which gather, develop and commercialise grassroots knowledge, sharing public knowledge as widely as possible and sharing any commercial benefits with those who developed the innovation. Professor Gupta is still involved.
- Navdanya was founded by Dr Vandana Shiva in 1984, in the Punjab, India. It was a response to the chemical explosion at Bhopal and the Punjab violence of that year. Today it has a network presence in 20 states in India, and works to develop organic farming, including the rescue and conservation of crops being pushed to extinction. Dr Shiva is still involved.

Commitment, continuity and time are all needed to succeed.

11. The next step is an “Invention Convention”.

Barbets’ Duet partners & learning sites: During discussions in East Africa, it was agreed that all those who would like to participate in the Barbets’ Duet would send to B. Heinzen a short description of an experiment to be tried, including photos, if available, of the place the experiment will be organised. Questions to consider in the description are:

- What do you propose to do?
- Where will you do it?
- Why is it needed?
- What are the first steps?

As learning sites are proposed, they will be posted on a Barbets’ Duet website space.

“Invention Convention:” Once a sufficient number of sites are put on the website, we will hold an “Invention Convention,” somewhere in East Africa, for about three days. During this time, we will present and critique each proposed experiment. In addition, in order to test new rules for generating high biodiversity, social equity and good incomes, we will invent and play a game. This might be a board game like Monopoly, or a role-playing game of some kind, or something else entirely. Games create the opportunity for rapid, low risk learning about what might and might not work.

Barbara Heinzen’s next steps: The first thing B. Heinzen will do is put this report and the Barbets’ Duet Conceptual Framework on a Barbets’ Duet website space on her website, in the section titled “Experiments”. Second, she urgently needs to find work in order to finance her role in the Barbets’ Duet from her own resources. Third, she will follow up the many leads to other organisations and people interested in this work or who have something to teach us. She will focus especially on finding useful business models, ways to monitor environmental health and ways to finance the ambitions of this project.

Proposed deadlines: In the interests of maintaining momentum, it is proposed that we aim to hold the “Invention Convention” by the end of February 2008.

*Barbara Heinzen
Gray’s Inn, London
27 July 2007*



Appendix 1 **Barbets' Duet**

*Barbets are tropical birds related to woodpeckers & toucans.
Some Afrotropical barbets sing in duet, creating the sound of one voice.⁸*

Barbara Heinzen
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16 October 2006

CONCEPTUAL FRAMEWORK

Objectives

This project has three objectives: (1) to create new institutional forms which integrate ecological principles in everyday social, political and economic affairs; (2) to use these new institutions to generate incomes for people whose knowledge serves to maintain and increase environmental resources, especially biodiversity; (3) to test whether this income can be derived from greenhouse gases emissions trading or similar environmental trading schemes.

The rationale

After 250 years of industrialisation and globalisation, environmental goods, including biodiversity, are increasingly scarce. Over all, modern institutions throughout the world are failing to protect and strengthen ecosystems. They are also failing to provide adequate jobs and incomes to rural peoples.

Historically, biodiversity has been supported by traditional knowledge and institutional arrangements everywhere, but particularly in rural societies of Africa, Asia, the Americas and Australia. The knowledge and institutions of these societies therefore have increasing value as environmental goods are increasingly scarce. However, both skills and knowledge are disappearing as older generations die out and younger generations cannot make a living using traditional practices and understanding.

There is at present no effective institution capable of rewarding people for their environmental knowledge. Therefore, a new institution – or institutions – is needed to create incomes for people who support, protect and increase biodiversity and other environmental goods. By rewarding people who have sound environmental knowledge and land management skills, popular incomes can improve while also increasing environmental health. This project will focus on biodiversity.

Working assumptions

We still do not know what institutional forms will be able to link traditional ecological management with modern market mechanisms in ways that benefit rural people, biodiversity and investors.

We are guided by several working assumptions. 1) The primary relationship is between people who manage the land (including marine resources) and those who manage financial markets. To increase healthy, bio-diverse landscapes, both types of managers need to learn new skills and develop new rules in the context of their practical affairs. 2) For this to occur, environmental managers (traditional and modern) and financial market managers need to engage directly with each other. 3) This engagement will be used to design multiple experiments to test different institutional arrangements linking peoples, land and markets. 4) In designing these experiments, both modern and traditional knowledge have something to contribute. 5) Each experiment will have people from different cultures working together equitably in practical settings. 6) Multiple experiments will stimulate rapid learning.

⁸ Photos: red and yellow barbet, Tarangire, Tanzania, <http://www.birdingafrica.net/page69.html>. See "A review of duetting, sociality and speciation in some African barbets (capitonidae)" in *Condor* 85:323-332 © The Cooper Ornithological Society 1983. <http://Elibrary.unm.edu/sora/Condor/files/issues/v085n03/p0323-p0332.pdf>

Plan of work

... start with what is there and what is needed ...

This is a twenty-year project, entering its first two years.

Year One

1. Test the conceptual framework outlined here with as many people as possible in different cultures.
2. Identify a group of associates interested in working with these ideas and developing the initial working principles of the project.
3. Jointly select a small number of Barbet learning sites where these ideas and principles can be tested.
4. Identify other useful knowledge and experience from anywhere in the world.
5. Identify potential sources of financial support, both commercial and philanthropic.

Year Two

1. Organise cross-postings between Barbet sites. Visitors from each Barbet site visit another site in another culture to learn by observation & activity.
2. Convene the first meeting of people from Barbet learning sites.
 - What did we notice?
 - What have we learned?
 - What might we do next?
 - What should we stop doing?
3. Submit applications for financial support, from both commercial and philanthropic organisations.

What is a Barbet Learning Site?

A Barbet Learning Site is a place where people are actively, experimentally engaged in new ways of managing the land or creating environmental markets. These sites are places where learning is not abstract, but tested in daily life where people depend on these activities for their well-being.

People who want their place to become a Barbet Learning Site need the following qualifications:

- be actively engaged in experimental work consistent with Barbet goals;
- be willing to share their experience with people from other Barbet sites;
- be willing to learn from all cultures and all cultures of knowledge;
- be willing to endorse and shape the objectives and principles of the Barbets' Duet.

Why become a Barbet Learning Site?

People involved in creating environmental markets or in land management could gain the following:

- increase the financial and biological productivity of existing activities;
- experiment with new activities providing new benefits & returns;
- learn from others;
- contribute to the invention of an institution which will integrate ecological principles in everyday life while creating new incomes for people who maintain or increase environmental health.

Appendix 2 – People consulted in East Africa, India, Nepal & Sweden

Name	Association & interests	Where met	Website
Abu Omollo	Veterinary service; now independent; Accidental interview	Kenya, Kericho	
Arthur Muliro	Society for International Development, Director of Organisational Development	Kenya, Nairobi	www.sidint.org
Elizabeth Meyerhoff	RAE Trust – Restoration of Arid Environments; Health & family planning; community development;	Kenya, Baringo	http://www.michna.com/rae/
Fred Gori	Nation Group. Public relations & environment, Journalism & environment	Kenya, Nairobi	http://www.nationmedia.com/dailynation/nmgindex.asp
James Kemboi & Edna Siongok	Local residents of Kericho Accidental interview	Kenya, Kericho	
Julius Kipng'etich	Director, Kenya Wildlife Service	Kenya, Nairobi	http://www.kws.org/
Murray Roberts	RAE Trust - Restoration of Arid E0environments Arid environments, restoration of degraded land,	Kenya, Baringo	http://www.michna.com/rae/
Oby & Hilda Obyerodhyambo	Abila Creative Centre, Mamboleo, Kisumu Artists & development	Kenya, Nairobi & Kisumu	http://www.abilacreative.org/
Richard Roth	Red Deer College, Canada Brings Canadian students to Kenya	Kenya, Nairobi	http://www.rdc.ab.ca/news_events/index.php?2006-07-7-14-57-02.html
Sammy Muvelah	Zimele Asset Management Investment management services	Kenya, Nairobi	http://www.zimele.net/
Victor Ombonya & Steve Otieno	Abila Creative Centre, Maemboleo, Kisumu, & environmental restoration	Kenya, Kisumu	http://www.abilacreative.org/
Wachira Maina	Lawyer	Kenya, Nairobi	
Aidan Eyakuze	Society for International Development & Serengeti Advisors	Tanzania, Dar es Salaam	www.sidint.org/ http://www.serengetiadvisers.com/
Bertram Eyakuze & Carlos Austin	Financial advisors	Tanzania, Dar es Salaam	http://www.serengetiadvisers.com/

Name	Association & interests	Where met	Website
Francis Ngosha	Dealer, member Tanzania Carvers Association	Tanzania, Dar es Salaam	
Joseph Nyunga	Sculptor, member Tanzania Carvers' Association	Tanzania, Dar es Salaam	
Msichoke Seaweed Growers Cooperative	Chairwoman: Kishindo Khamisi Mwenyekiti; Secretary: Abdalla Mwinyi Gogo Katibu	Tanzania, Mlingotini	
Mwajuma Masaiganah	Founder, Mwasama School, Bagamoyo Coastal development, participatory development	Tanzania, Bagamoyo	
Richard Stanley	Businessman	Tanzania, Dar es Salaam	
Rose Lyimo Board member, Akiba Bank	Founding Director, Akiba Commercial Banks Micro-lending, small businesses	Tanzania, Dar es Salaam	http://65.108.6.3/page.php?id=5876
Tanzania Carvers' Association	Chairman: Focus Senga Secretary Genera: Zahoro J. Madongo	Tanzania, Dar es Salaam	
Abdul Ndifuna	Head of Training & Technical Advisory Services, Uganda National Bureau of Standards	Uganda, Kampala	http://www.unbs.go.ug/main.php?menuid=95
Bill Farmer	Uganda Carbon Bureau Using carbon markets to protect & plant forests	Uganda, Kampala	http://www.ugandacarbon.org/index.php/profile
Charles Onyang Obbo	Managing Editor, Nation Group ; Columnist	Kenya, Nairobi	http://newsweek.washingtonpost.com/postglobal/charles_onyango_obbo/
Denis Ddamba Musisi	Yuda Media Ltd. Accidental interview	Uganda, Kampala	http://www.yudamedia.net/services/intranets.html
Francis Namugowa	Coffee farmers around Mt. Elgon	Uganda, Kampala	
Gladys Kirungi	Society for International Development	Uganda, Kampala	
Jennie Farmer	Mabria Forest Project, BBOP – Business & Biodiversity Offset Program & Katoomba Group	Uganda, Kampala	http://www.katoombagroup.org/
Joel Okao	Journalist, Panos	Uganda, Kampala	

Name	Association & interests	Where met	Website
Magode Ikuya	SID Uganda & East Africa Scenarios teams	Uganda, Kampala	
Paul Wangola	Founder of Multiversity – for knowledge of all kinds and sources	Uganda, Kampala	
Ruth Ojiambo Ochieng	Director, ISIS – WICCE	Uganda, Kampala	http://www.isiswomen.org/
Santa Anzo	Founder, Arapapa fashion	Uganda, Kampala	http://www.arapapa.com/arapapa.html
Sophia Apio Kerwegi	National Chemotherapeutic Laboratory Medicinal plants & indigenous knowledge	Uganda, Kampala	
Ali Mwinyi	Director, Jozani Forest Dept of Commercial Crops, Fruits & Forestry	Zanzibar, Jozani Forest	
Bakari Asseid	Director, Department of Commercial Crops, Fruits and Forestry, Zanzibar	Zanzibar, Jozani Forest	
Juma Issa	Director, Agricultural Research Station, Zanzibar	Zanzibar	
Mahmoud Kombo	Deputy Minister of Information, Culture & Sports, Zanzibar; businessman	Zanzibar	
Rob Wild	Consultant LTS International, Edinburgh worked at Jozani Forest in 1990	Zanzibar, Jozani Forest	http://www.ltsi.co.uk/about/cv/wild.html
Aditi Nath Sarkar	Friend, Associate Professor, DA-IICT Literature, religion, culture, S Asian studies	India, Ghandinagar, & Kolkata	http://www.der.org/films/filmmakers/aditi-nath-sarkar.html
Aloke Roy Chowdhury	Chief Executive, Chronicle Books	India, N Delhi	
Anil Gupta	Indian Institute of Management Grassroots inventions & innovations	India, Ahmedabad	http://www.iimahd.ernet.in/~anilg/
Dhrubajyoti Ghosh	Sr Fellow, Centre for Studies in Social Sciences East Calcutta Wetlands	India, Kolkata	http://www.cssscal.org/Dhrubajyoti%20Ghosh.html http://www.wfindia.org/about_wwf/what_we_do/freshwater_wetlands/our_work/ramsar_sites/east_calcutta_wetlands.cfm
Dilip Sarkar	Bherys Fishermans' Coop. Society, East Calcutta Wetlands	India, Kolkata	
Diya Sharma	Navdanya, Mumbai Organic farming & sales; biodiversity protection	India, New Delhi	http://www.navdanya.org/
Harsha Jhunjunwala	Student, DA-IICT	India, Ghandinagar	http://www.daiict.ac.in/

Name	Association & interests	Where met	Website
Ishan Bishnoi,	Student, DA-IICT	India, Ghandinagar	http://www.daiict.ac.in/
Jalis	Editor, Navdanya,	India, New Delhi	http://www.navdanya.org/
Mahesh Patel	GIAN: Grassroots Innovation Augmentation Network - Commercialization	India, Ahmedabad	http://www.gian.org/
Mrinalinee Vanarsee	Director, Ecological Society Environmental conservation & restoration –	India, Pune	http://www.ecological-society.org/
Priya	Admin assistant to Vandana Shiva, Navdanya	India, New Delhi	http://www.navdanya.org/
T.J. James	National Coordinator, National Innovation Foundation	India, Ahmedabad	http://www.nifindia.org/
Tarun Mitra	AIIS, Kolkata Scholarship in India, works US academics	India, Kolkata	http://www.indiastudies.org/
Vanarasee family Pune	Shyamala, Gauri, Prasad & Mrinalinee Vanarase Performing arts, cultural equity, ecology	India, Pune	
Vipin Kumar & deputy	SRISTI laboratory grassroots knowledge - scientific validation	India, Ahmedabad	http://www.sristi.org/cms/
Chaitanya Subba	Scenarios in Nepal, National Planning Commission	Nepal, Kathmandu	http://www.npc.gov.np/
Depak Gyawali	Chairman, Interdisciplinary Analysts Scenarios in Nepal; water in Nepal, see link	Nepal, Kathmandu	https://www.vedamsbooks.com/no25685.htm
National Business Initiative	Scenarios in Nepal	Nepal, Kathmandu	http://www.nbi.org.za/welcome.php?pg=2
Nick Langton The Asia Foundation	Scenarios in Nepal	Nepal, Kathmandu	www.asiafoundation.org
Sheba Rosier	Third Secretary (Political) British Embassy Scenarios in Nepal	Nepal, Kathmandu	
Thupten Gyalpo Lama	Society for Partners in Development Scenarios in Nepal	Nepal, Kathmandu	http://www.bebo.com/Profile.jsp?MID=367137231&MemberId=14385126
Albrecht Graf Matuschka	Managing Director, Matuschka Gruppe Independent fund managers	Sweden, Tallberg	http://www.matuschka-advisors.de/
Andrew Jones	Sustainability Institute, North Carolina Systems thinking & environment	Sweden, Tallberg	http://www.sustainabilityinstitute.org/
Carlos de Bourbon de Parme	'Missing markets' group INSID, Netherlands	Sweden, Tallberg	

Name	Association & interests	Where met	Website
Eva Thörnclöf	'Missing markets' group Mistra - Strategic environmental research	Sweden, Tallberg	http://www.mistra.org/mistra/english/aboutmistra/mistrainbrief.4.11126f6102410ddca180002203.html
Iqbal Paroo	CEO, Omidyar Foundation Omidyar Family Enterprises	Sweden, Tallberg	http://www.omidyar.net/group/on/ws/iqbal_paroo/
John Elkington SustainAbility	Founder, SustainAbility Consultancy on CSR & sustainable dev't	Sweden, Tallberg	http://www.sustainability.com/
Judy Moody-Stuart	Asian University for Women Fundraising	Sweden, Tallberg	http://www.asian-university.org/
Katherine Fulton	President, Monitor Institute Philanthropy, strategy & management	Sweden, Tallberg	http://www.monitorinstitute.com/team.asp
Lawrence Bloom	'Missing markets' group Eco-cities - Cities as a new asset class	Sweden, Tallberg	http://www.ecocities.com/
Loice Bwambale	Planning for Kasese, Uganda	Sweden, Tallberg	
Mark Moody-Stuart	Chairman, Anglo American	Sweden, Tallberg	http://www.angloamerican.co.uk/
Nicky Gavron	Deputy Mayor, London Sustainable cities network	Sweden, Tallberg	http://www.sustainablecitiesnet.com/?cat=11
Oliver Karius	Vantage Point Finance for sustainable development	Sweden, Tallberg	http://www.vantagep.org/about.html
Oren R Lyons	Knowledge and land claims of native Americans Iroquois Nation, New York	Sweden, Tallberg	http://11thhouraction.com/node/58
Peter Warshall	Ecologist, Northern Jaguar Project	Sweden, Tallberg	http://www.northernjaguarproject.org/
Ragni Bakshi	'Missing Markets' group Rural development, India	Sweden, Tallberg	
Sten Nilsson	Deputy Director, IIASA, Institute of Applied Systems; Forestry, & climate change	Sweden, Tallberg	http://www.iiasa.ac.at/Research/FOR/contact.html?sb=16
Steven Smith	Ritchie Capital Management, New York Alternative asset management	Sweden, Tallberg	http://www.ritchiecapital.com/
Toby Heaps	'Missing markets' group Editor-in-chief, <i>Corporate Knights</i>	Sweden, Tallberg	http://www.corporateknights.ca/magazine/
Valeria Budinich Ashoka	Full Economic Citizenship, Ashoka	Sweden, Tallberg	www.ashoka.org www.chagemakers.net
Zhang Jiwei	'Missing Markets' group Caijing Magazine, Beijing China	Sweden, Tallberg	www.caijing.com.cn

