



Compas Magazine

for endogenous development



**ANCIENT
VISIONS
AND NEW
CHALLENGES**

Methodologies to support endogenous development

Number 4, March 2001

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The six-monthly Compas Magazine is free of charge for those individuals and organisations interested in the role of culture, indigenous knowledge and cosmovision in agriculture and rural development. Active participation in the form of articles that document experiences, reactions on publications, opinions, theoretical reflections and suggestions for future initiatives are welcomed. Also available in Spanish.

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Compas (Comparing and Supporting Endogenous Development) is an international programme, designed to understand the diversity of rural peoples' knowledge, encourage local experimentation within farmers' worldviews and have intercultural dialogues on farmers' knowledge and indigenous learning. The Compas Magazine hopes to stimulate development agencies and individuals to take indigenous knowledge serious and support endogenous development. The Magazine aims to be a forum for exchange on testing field methods, on-farm research and participatory approaches, based on farmers' own concepts, indigenous institutions and cosmovision. Compas presently works with 26 partner organisations in 12 countries and is funded by DGIS and NOVIB, the Netherlands.

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Cover photo: Facing the future with old and new tools. Farmer churning yak milk, Zhongian, South China

ANCIENT VISIONS...

Traditional lifestyles are continuously being challenged to renew themselves. Perceptions about the future, and the way to get there, differs according to one's cultural background, age, sex, the country one lives in, and economic position. During a traditional festival called *Ndaam Koya*, David Millar of the Compas partner organisation CECIK encountered Adongo Nso, an elder in the Gowrie-Kunkwa community in Northern Ghana. He played an ancient musical instrument, with strange and beautiful rhythms, to herald the occasion. This was the first time David had seen this instrument or heard its music, in spite of several years of working with the community. He engaged elder Nso in a discussion, which resulted in some intriguing revelations.

David: *"How old is this instrument and how long have you been playing it? I have been coming here for your 'Ndaam Koya' festivals for many years but I have never seen it or heard you play."*

Elder Nso: It is an ancient instrument used by our ancestors to sing praise, or for burial songs. Only my family have the skill to manufacture this instrument and use it. You cannot find it elsewhere.

David: *"I imagine you have quite a large family. How many of you play this instrument and how many of the young ones are learning it from you?"*

Elder Nso: Only two of us use it — me and my twin brother. Our sons and grandsons refused to pick it up because they say it is for poor men and it will make them perpetually poor. You see! Our people see poverty in many dimensions. In addition to not having material things poverty can also be seen in terms of spirituality, knowledge and skills.

David: *"Can you explain these other dimensions of poverty a bit more?"*



Photo: COMPAS

Elder Nso: The missionaries were the first to tell us about our spiritual poverty. They thought it poverty to worship our ancestors. They also made sure we got even poorer by doing everything to destroy our religion. Then the government workers came with their knowledge about food production and again told us that our own knowledge and skills were poor. They also made us poorer by trying to destroy our knowledge and replace it with theirs. Today we have large-scale poverty among our people and those who replaced and scorned our customs, knowledge and skills are responsible for it.

David: *"What do you suggest to alleviate poverty?"*

Elder Nso: The government should certainly look at issues related to material poverty. But poverty in knowledge, skills and spirituality should be addressed at the same time!

...AND NEW CHALLENGES

The discussion between David Millar and elder Adongo Nso urges development organisations to take a critical look at the issue of poverty. The worldview of the people we often refer to as the rural poor can be very rich and revealing. The general definition of poverty and its causes need to be amplified by how the people themselves see it. For us, development should be a process in which rural people are supported in finding new ways of sustaining their livelihood and culture. This is particularly relevant for the youth, who will need motivation and wisdom in order to take pride in further developing the valuable aspects of traditional life styles. Change agents, who want to play a role in such a development process, need to deal creatively with local knowledge, practices and beliefs. That is the challenge of endogenous development.

David Millar, Katrien van t Hooft, Bertus Haverkort, Wim Hiemstra

Challenging developments

Approaches, results and perspectives for endogenous development

David Millar, Bertus Haverkort, Katrien van t Hooft and Wim Hiemstra

How to deal with the positive and negative aspects of traditions? How to avoid rejection and romanticizing traditional practices? What are possible approaches to support endogenous development? How can the efficiency of traditional practices be measured? This issue of the *Compas* magazine addresses these and similar questions. After three years of field programmes the *Compas* partner organisations have evaluated their activities and identified learning points. The results achieved by the local communities and the partner organisations are presented. Paramount is the enthusiasm of farmers, traditional leaders and project staff on the approach followed. The challenges ahead include deepening the field experiences and broadening the network.

The central aim of the *Compas* programme is to support rural people to appreciate, test and improve their own knowledge, values and practices. *Compas* emphasises the local ownership of knowledge and supports the capacity of local people to learn and experiment, in order to strengthen their cultural identity and improve livelihoods. The main activities are documenting indigenous knowledge and carrying out experiments based on local concepts. The traditional leaders are involved in implementing activities to improve indigenous practices relating to agriculture, human and animal health and natural resources. The experiences and insights gained in this process are shared between partners and other development professionals in order to stimulate an intercultural dialogue and support cultural diversity. The *Compas* programme involves NGOs and universities in 12 countries in Africa, Latin America, Asia and Europe, and is supported by regional and international co-ordinators.

Changing context

Since *Compas* partner organisations began implementing their activities, the general context of their work has continued to change. First, the process of globalisation has led to the growing influence of international markets and privatisation. The economic situation of developing nations has been influenced by these processes, often with negative effects for the poorer families. According to the World Development Report 2000-2001, almost half of the world's 6 billion people have to live on less than \$1 per day. While between 1987 and 1998 in East Asia the number of poor people has decreased significantly, numbers have increased in sub-Saharan Africa, South East Asia and Latin America. In countries in Eastern Europe and Central Asia, in transition towards market economies, the number of poor has risen more than twenty-fold. The average income in

the 20 richest countries is 37 times the wage earned by those living in the poorest countries. This gap has doubled over the past 40 years.

Poverty not only shows in the lack of purchasing power, but also in a lack of political power and on extreme vulnerability to ill health, economic dislocation, personal violence and natural disasters. The economic, social and political changes in the lives of resource-poor rural people have forced many of them to abandon their homes and migrate to urban areas, in order to enter the wage economy (Bryceson, 2000). In this process of increasing poverty and migration many traditional life forms are driven into the background.

Ecological changes

Secondly, in many parts of the world the

climate, bio-diversity and natural resources are issues of growing concern. Bio-diversity has decreased dramatically in agricultural ecosystems and landscapes. According to the UN Convention to Combat Desertification over 250 million people are directly affected by desertification. In addition, some one thousand million - or one billion - people in more than hundred countries are at risk. These people include many of the world's poorest, most marginalized citizens.

Species and ecosystems are more threatened today than ever before in recorded history. The most recent estimates of United Nations Convention on Biodiversity predict that, at current rates of deforestation, two to eight per cent of the species on earth will disappear over the next 25 years. This is an enormous environmental tragedy, which also has profound implications for the economic and social



Three generations, each with their ideas, values and aspiration for the future. Zhongdian, South China

Photo: COMPAS

possibilities for human survival. At least 40 per cent of the world's economy and 80 per cent of the needs of the poor are derived from biological resources. This erosion of natural resources and biodiversity goes hand in hand with diminishing cultural diversity. Traditional societies break up and customs, cultural expressions and languages are vanishing. More than half of the 6,000 languages currently spoken are unlikely to survive this new century.

Growing concerns and initiatives

Thirdly, the concern about food security, environmental changes and social problems grows. Globalisation has contributed to fast communication and greater knowledge about different societies, cultures and eco-systems in the world. As a result a growing concern about the changes in biodiversity, and interest in the knowledge and practices of indigenous peoples can be observed.

For example, in July 2000 representatives of the 11 major world religions met in Nepal to express their concern and formulate activities to conserve natural resources. These activities build on the indigenous cultures in local communities. In September 2000, leaders of different religions and indigenous peoples met for an Inter-faith Conference on Poverty and Development, which was organised by the World Faith Development Dialogue, and hosted by the United Nations in New York. The International Conference on Cultures and Biodiversities, held in China July 2000, is another initiative. In this issue the articles of McNeely (p. 20), Tyndale (p. 23) and Xu Jianchu (p. 30) report on these initiatives and the growing awareness they reflect.

Meanwhile, an increased recognition of the importance of indigenous knowledge and practices by the scientific, donor and development institutions can also be observed. During the past decade many indigenous techniques on subjects like soil and water conservation, natural pesticides, inter-cropping, agroforestry, food preservation and ethnoveterinary and human health practices have been investigated and documented (Reijntjes et al, 1998). Presently, development agencies, such as the World Bank and FAO, have programmes focusing on indigenous knowledge. Likewise, United Nations conventions such as UNCBD (Biodiversity) and UNCCD (Combatting Desertification) acknowledge its importance.

The Compas approach

The Compas partner organisations are concerned about the fact that in many of these initiatives the focus is limited to the bio-physical side of indigenous knowledge, which can be understood from the perspective of the Western knowledge system. Aspects like local learning and experimentation, community ownership of knowledge, and worldviews, spiritual



Photo: COMPAS

Building on rural peoples worldviews: village-based learning and dialogue. Ghana

practices, as well as the roles of traditional leaders and organisations in the communities, are usually not included in these initiatives. The Compas partner organisations are developing alternatives for endogenous development, which include these vital aspects of the rural communities. Clearly, the methodological challenges in this process are enormous. Here we will mention the four main components of the Compas approach.

Learning about local knowledge

The Compas partner organisations agreed on a code of conduct, as well as the items to be addressed and the methods to be used in dealing with local knowledge and practices. Documentation of indigenous practices and cosmovisions are taken as the starting point of the process of revitalisation of indigenous knowledge systems. During the past three years several indigenous practices and cosmovisions have been documented. Together with the communities the changes in the knowledge system, the interaction with other sources of knowledge were identified. Then options for endogenous development were analysed and translated into community based activities.

Care is taken not to romanticise indigenous practices, nor to be too sceptical or prejudiced. The need for this open attitude, as well as for internal debate within traditional cultures, is also emphasised in this issue by a philosopher from Benin, Mr Hountondji (p. 12). Another Compas partner organisation concern is to respect and protect intellectual property rights. Publication of indigenous technical knowledge is not considered an important aim in itself, and is done only if it is instrumental to the development of the local communities. The Compas partner organisations focus their publications on the methodology and general principles of endogenous

development, rather than on the technical details. In this sense Compas is different from many other initiatives to document indigenous knowledge: it focuses on *in situ* conservation and development of local practices, rather than on their *ex situ* conservation in libraries and text books. In this issue the Compas partners Handawela (p. 44) and FRLHT (p. 17) describe the role of documentation in their methodology; Ramprasad (p. 8) and Hafeel et al (p. 17) explain the strategy of Green Foundation and FRLHT to protect the property rights of the local communities.

Testing, revitalising and improving

As a second step in the methodology, the Compas partner organisations, together with the local communities, started processes of learning and experimentation with local practices based on the local concepts and belief systems. Their activities aim to support people in adapting their practices to meet today's challenges. Though often not expressed openly, and increasingly influenced by the globalisation process, the partner organisations found that indigenous knowledge, values and practices are still widespread amongst the rural communities. They concluded that the best way to support the rural people is to co-operate with them to understand, test, and improve their practices. This methodology is both respectful and challenging to tradition and to modernisation.

In this issue, a wide array of methodologies followed by both partner organisations and organisations outside the network are reported. Several NGOs have dedicated themselves to re-vitalise traditional practices that had had been strongly eroded in the past decades. An example of this kind of activity is described by Hatse et al (p. 32), who explains the process of reviving the Q eqchi



Discussing a field experiment with organic manure. Orissa, India

Cross among Mayan indigenous groups in Guatemala to support unity and cultural identity in the war-torn rural communities. Other authors in this issue also stress the importance of stimulating local organisation and the role of traditional leaders in the process of testing and adapting traditional practices.

Millar (p. 40) gives an example of how CECIK in Ghana develops a methodology to include farmers' concepts in testing adaptations to agricultural practices. This farmer-led experimentation includes both traditional and western elements. Various authors in this issue stress that Western and traditional methods and practices can re-enforce each other. This is also a conclusion of Gonesse (p. 26), who describes the way AZTREC established eco-cultural villages in Zimbabwe as a major vehicle for endogenous development. This concept has also been developed by Green Foundation in India in the form of the bio-cultural seed villages (Ramprasad p. 8), and constitutes an important part of the methodology of Green Foundation to understand and support existing traditional practices related to indigenous crop diversity.

Enhancing traditional farming by no means implies that everything modern is excluded. A modern device, like a chainsaw, often has to be introduced in a ritual way, however, to be able to fit into the traditional farming system (Hatse et al. p. 32). The degree in which youngsters who neglect their parents' traditions and are in favour of modernisation, is also a point of discussion. According to Compas partner TIRD in West Timor, young people still have a strong relation with the *adat*, the local indigenous cosmology, even if they are studying elsewhere and are exposed to city life and globalisation. Others express their concern. In this issue the need to include young people into project activities is stressed by several authors.

The difficulty of validating indigenous

knowledge and practices, without falling into the pitfall of only measuring them according to conventional scientific standards is a well-known limitation mentioned in indigenous knowledge studies. The Compas Network in Sri Lanka is developing a methodology to measure the effect of indigenous knowledge, by relating the outcome of agricultural practices to the degree of indigenosity of the farmers (Handawela p. 44). Another way of validating is cross-checking between different knowledge systems. Validating traditional health practices in this way has been a major effort of FRLHT in India (Hafeel p. 17) and EDUCE in Mexico (Garcia p. 14). A quite specific methodology is followed by CIKS in Madras, India. They study the ancient classical texts on agricultural practices and then carry out experiments to validate them. This is combined with the study of present-day farming practices. They have come to the conclusion that strengthening the link between the farmers' practices and the knowledge available in the ancient texts can strengthen and revitalise present day agriculture.

Self-development and training

The Compas programme has been established partly to deal with the difficulties of development agents to address the needs of rural people and to understand their realities. The Compas partner organisations are revisiting the rural communities, to create time-space for renewed dialogue on endogenous development. To be able to do this, each organisation needs to develop a new set of skills to collaborate with rural people in a truly participatory way. This does not only imply the participation of field workers in spiritual activities like rituals, sacrifices and festivals of the communities they are working with; it also implies collaborating with the traditional leaders, and taking the local concepts as the starting point for the development process. This approach

requires an attitude of respect, creative thinking and communication which, unfortunately, is generally not taught in schools. A kind of de-schooling and re-training programme was therefore necessary for the professionals and field staff in each partner organisation, a truly eventful learning path. Handawela (p. 44) describes this process with four NGOs in Sri Lanka. Garcia (p. 14) stresses the importance of learning the local language in this process.

Millar (p. 41) describes the learning path in establishing a relationship with the community in a culturally accepted way in Ghana. AGRUCO, the Compas partner in Bolivia has a quite specific way of addressing the necessary change in attitude and communication skills in fieldworkers. Their field experiences are included into the curriculum for university students. The rural communities express their ideas and criteria for the research activities of the students. The objective is to form fieldworkers with high cultural sensitivity.

Networking and dialogue

Networking on several levels constitutes the fourth main element of the methodology used by the Compas partner organisations. The first level is the exchange between the different villages and population groups by activities such as seed fairs, demonstrations and school competitions, for example. This is supported by the dissemination of newsletters and other publications in the local languages. Networking also takes place with other organisations in the region and at national and international level. This level of exchange is stimulated by newsletters as well as books, web-sites, calendars and CD-ROMs in the dominant language, such as English and Spanish.

Various Compas workshops and exchange visits have been organised to share and assess the experiences (see central pages). Representatives of the partners organisations have participated in conferences and have published their experiences through the Compas Newsletter, scientific conferences and other media to enhance the intercultural dialogue.

Results achieved by communities

The results of the field activities are rich and diverse, though often difficult to assess and quantify in detail. In general the results have increased the self-respect, income and livelihood security of the families, due to improved practices in the areas of agricultural, human and animal health and natural resource. Several Compas partner organisations also come to the conclusion that the process of documenting, testing and improving indigenous practices has not only helped to enhance the effectiveness of these practices, but also to strengthen the experimental capacity and local organisation of rural people. Other effects include increased biodiversity resources, income generating

activities, improved nutritional status, enhancement of local cultural practices and local organisation structures, and better communication between communities and extension workers.

One example illustrating the effect of the approach is presented by Ramprasad (p. 8). Green Foundation near Bangalore, India, has focused on saving traditional crop varieties, which are more resistant to drought and other environmental stress, as well as green manuring plants and plants with medicinal properties. This has enhanced the possibility to securing the livelihoods of the families as well as the natural environment that surrounds them. Including cultural aspects into the technical activities related to seed conservation has greatly enhanced the effectiveness of this work. This has also enhanced women's participation in the activities, and it is often women who are the major custodians of the knowledge on crop varieties and medicinal plants. A total of 500 farmers in 83 villages are presently participating in the on-farm crop conservation, but the total outreach of the activity is much wider. The traditional crop varieties revived cover a range of food-crops, like finger millet, dry-land paddy, wet-land paddy, pearl millet, sorghum, maize, little millet, foxtail millet, kodo millet and proso millet. Also traditional varieties of beans, peas, greens, brinjal, tomato, red gram, green gram, black gram, horse gram, chilli, gourds, oil seeds and other vegetables have been revived.

Another example is described by Gonese (p. 26), who indicates a decrease of migration of youth from the Zimuto area to the cities due to the income generating activities in the eco-cultural villages in Zimbabwe. This has been achieved through the marketing of the forest produce that have resulted from the reforestation programmes over the last 15 years, organically grown vegetables and crops, as well as cultural tourist activities to the villages. The role of the traditional leaders in the conservation of natural resources has led to re-installing traditional conservation strategies, respected by the local population. The eco-cultural villages also function as places where communities can settle their disputes under the guidance of spirit mediums.

Results by partner organisations

After three years the experiences and insights gained by the Compas partner organisations are very revealing. During the evaluation process in 2000 it became clear that the rural people, tradi-

tional leaders, the staff of the partner organisations, as well as a great number of development professionals, give very positive feedback to the approach followed. Project staff often admitted, however, that working within the cultural context of the rural people has been difficult initially. They had to face the limitations of their own social skills as well as the criticism of their peers. Rural people often remark that through this approach they feel more respected and accepted.

Participation in the local knowledge systems implies transcending the mere technical and disciplinary aspects of knowledge. The partner organisations not only addressed the technical aspects of traditional knowledge, but also spiritual, political and epistemological aspects. This has resulted, for example, in the notion of the sacred nature of seeds and sacred groves.

Also new questions have emerged that need to be addressed and clarified. Some-



Photo: COMPAS

Exchange of ideas and seeds between Colombian and Bolivian farmers during the Compas regional workshop in Cochabamba, Bolivia, February 2001

times conventionally oriented development professionals find it hard to work with the complexities of the holistic approach. Difficult aspects of traditional practices, such as gender inequality, class and caste systems, and the misuse of power of traditional leaders, require a continued strategy for respectful disagreeing and yet maintaining dialogue. Moreover, the political implications of working with traditional rulers, spiritual leaders and traditional organisations can affect relationships with government and other formal organisations. In this issue Gonese (p. 26) describes the initial difficulties of AZTREC in Zimbabwe with government officials, while Hatse et al (p. 32) mentions the tensions between ADICI and the Catholic church.

Future plans and perspectives

The current phase of the Compas programme ends in June 2002. In the time that remains the Compas network will draw further conclusions about the approach to endogenous development and explore the issues of how to deal with holism, spirituality, the political implications of supporting local leaders, community learning with local values, assessing unquantifiable data, and dealing with the negative impact of indigenous practices. Future issues of the Compas newsletter will record the support of endogenous development by means of *in-situ* strengthening of indigenous knowledge and practices.

The details of the programme beyond 2002 will be reflected upon during an international meeting of the Compas partner organisations, planned in September 2001 in India, after experiences per region have been consolidated. Regional co-ordinators are stimulating processes of national

meetings between organisations with a similar focus. This has already happened in Africa in the context of Enhancing Indigenous Agricultural Knowledge in Africa (ENIACA) project (p. 29). The same process is also taking place in Asia, and has been started in 6 countries in Latin America after the general meeting in Bolivia February of this year.

Like Paulin Hountondji (p. 12), Compas emphasises the need for internal debate within traditional cultures. In this sense a major challenge for Compas will be to understand how the different knowledge systems can be supported to interact, to dialogue and to challenge themselves as well as each other.

Another important point is to find out to what extent can non-Western cosmologies and knowledge systems challenge and revitalise the current dominant Western way of thinking. In this process Compas will re-enforce the links with other networks and institutions that favour culture as the basis of endogenous development. We invite our readers to join this effort and send us experiences and views on endogenous development.

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The path of rediscovery

Vanaja Ramprasad



Photo: Green Foundation

Why and how did we embark on this path of endogenous development? Where do we stand now and what do we hope to realise at the end of our journey? These are questions we have asked ourselves time and again. Conserving seed diversity has been the basis of our village level work and experiments. Along the way a new dimension to bio-diversity - that of culture - emerged. The Green Foundation-Compas programme strengthens the links between cultural and biological diversity.

Green Foundation is a grassroots organisation working with small and marginal farmers towards conserving, promoting and reviving genetic and cultural diversity in South India. Seed and soil conservation are its major concerns. It recognises the significance of culture, traditional knowledge systems and spiritual beliefs amongst different social groups, as a dominant element governing people's lives. Though the main bio-diversity conservation activities focus on agricultural crops, they also include bio-pesticide plants, green manuring, medicinal plants for humans and livestock, agroforestry, and wild plant species.

Five elements of nature

The lives of rural people are influenced in no small measure by the biodiversity which surrounds them. Rural people live in close contact with nature, and contribute to the conservation of biodiversity and all life forms. This is based on the conception that all life forms are made of the five elements of nature - soil, water, fire, air and ether - and the cosmic interconnectedness of all life. To openly embrace nature in this way means to worship her, and never violate her unwritten rules. Rituals of worship of the five elements therefore have their place in the cultural life of rural people.

The foundations of traditional agriculture have received a hard blow over the past decades. The introductions of monocultures of high yielding varieties, and the associated applications of external inputs, have not only increased the economic dependence of farmers, they have also begun to destroy the rich and diverse biogenetic base. Global policies, population growth and urbanisation have brought about a serious threat to the natural resources which are basic to people's livelihoods. The more recent removal of subsidies by the government has made farming a less viable and even an unattractive proposition for many farmers.

As values and lifestyles change rapidly in the rural context, the need to conserve our fast shrinking natural resource base assumes paramount importance. There is still a glimmer of hope. A growing number of farmers and indigenous groups in remote villages still recognise the cultural rootedness and the role of cosmic energies in their agricultural practices.

Hybrid rural culture

Our Compas field programme, which was implemented three years ago, aims to enhance endogenous development by linking biodiversity with culture. The communities that Green Foundation works with are

situated in a highly complex rural environment not far away from the industrial metropolis of Bangalore. This area is fast changing, dynamic, and inspired by the urban market. The conflict between traditional and modern could not be more apparent than in this hybrid rural culture. As a result, a plurality of strategies and a diminishing sense of identity amongst farmers can be observed. At the same time, there are clear remnants of a civilisation which has not severed its links with nature. The attempt of Green Foundation was to restore faith in the indigenous system and re-establish valuable practices that are on the verge of extinction.

Against this backdrop Green Foundation has adopted a two pronged strategy to promote seed conservation and the exchange of traditional crop varieties. A subtle difference is distinguished between in situ and on farm conservation. In the areas where the agricultural societies are still remain relatively untouched by market forces, and modern crop varieties have not been introduced vigorously, the farmers have conserved these varieties for generations. Green's strategy has here been to encourage farmers to be aware of the importance of this in situ conservation.

In areas where a plurality of cultures exists, for example, near large urban centres, Green Foundation is stimulating the

farmers to make informed choices by conserving traditional seed varieties on a small portion of their land and by evaluating them. In many villages nearer the urban influence this on-farm conservation has been extended with seeds from other, similar climatic regions, which has added to the genetic pool in the area. The logical question at this point is: what methodology did Green Foundation use to revive the cultural and biogenetic diversity? Here we will present the five major aspects of the methodology Green Foundation has followed in the past few years.

Creating awareness

One of the major concerns, and the first step in the methodology, was to create awareness and foster bonds with and amongst the rural people. Over the years we have developed several ways to create awareness about the importance of biodiversity and culture, like for example regional and local seed fairs. They bring together farmers from various states and provide opportunities for the collection and exchange of indigenous seed varieties. The regional seed fairs are held annually at the Green Foundation's farm annex training centre in Thalli, near Bangalore, since 1993. Over the past years seed fairs have extended to villages and are usually held after harvest, when the farmers are relatively free.

With the start of the Compas project in 1998, a new dimension was added to the annual seed fair. The event now starts with a traditional ritual, thereby testifying to the importance of rituals in Indian agriculture. Traditional seed varieties are displayed, as well as cosmovision charts. The folk songs and dances that are threatened by extinction are revived during

these seed fairs. Local groups of folk artists, local health healers, schoolchildren, and women who go from village to village after the harvest telling stories of the flora and fauna, are honoured for their contribution to promoting local genetic and cultural diversity.

Seed awareness campaign

Green staff, animators and farmers also undertook a seed awareness campaign on foot, during the second week of June 2000. The campaign started from Thalli and proceeded through several districts. The erosion of genetic diversity was demonstrated through street plays, puppetry and folk songs. The plays enacted were the Indian king and multi-national companies and *Our seeds, our life*. This campaign also highlighted the efforts of Green Foundation.

Still another way to create awareness has been to involve high school children in essay competitions about a wide range of themes, varying from folk traditions, tales, beliefs and knowledge about flora and fauna, and techniques for pest and disease control. The competition Honneru 1999 had 2002 entries from high school children in Kanakpura Taluk. Another initiative with school children involved demonstration plots, in which eight groups of high school children tended various finger millet varieties and observed their performance.

Documenting indigenous knowledge

Documentation of indigenous knowledge and practices about crop diversity is a next step in the Green Foundation methodology. This is an ongoing and integral component of the programme. Besides specific data related to the traditional

crop varieties, the documentation includes, more general aspects such as technologies to increase disease and pest resistance, pest management, agricultural rituals, folk tales, traditional human and animal health care practices, storage systems, and methods to control wild animals.

A more recent effort was to document indigenous knowledge related to natural resources. Patenting and Intellectual Property Rights have become intellectual issues, and awareness on these issues seldom reaches the grassroots level, where the major custodians of the natural resources can be found. In order to create people's awareness and ownership of these resources, and avoid any bio-piracy, the concept of bio-diversity registers was introduced in 32 villages of Achubalam Panchayati. A central bio-diversity conser-

vation committee was formed, and village sub-committees which included local health practitioners, farmers, cattle grazers, forest guards, school teachers, village elders and other resourceful people.

The initial work of the village level committees was to draw a resource map of sacred groves, rivers, fields and forests. Moreover thematic concerns, such as renewable energy resources, traditional healing, traditional artisan skills, medical plants and their uses, and traditional farming practices were documented. The outcome of the data was consolidated through field visits under the leadership of local resource people. At the end of a six-month period the village level bio-diversity registers could be drafted. Updating and protecting the natural resources in the area is easier now, because this bio-diversity document can be used as a frame of reference.

Innovative methodologies

To document indigenous knowledge and record oral culture, a combination of methods like observation, participatory rural appraisal, guided field walks and gathering information from the elders in the villages was used. Many times we found that the information is incomplete as far as form, content, language, and a host of other factors were concerned. Eroded cultural values may explain this problem in part. The fact that indigenous knowledge has a strong practical base, but at the same time a weak theoretical foundation, is another reason. We have concluded that, unless a concerted effort is made to transfer the oral knowledge, the next generation will have very little of this knowledge available in written form.

Experimentation

Green Foundation's approach to reviving cultural practices starts with documentation but does not stop there. Though well-aware of the advantages of traditional crops, farmers are often hesitant to switch back to them all at once. They tend to follow a very cautious and step-by-step approach to enable them to withstand ups and downs, and sudden shocks. Therefore, if these practices and rituals are to be revived, it is necessary to experiment with them, to understand their nuances and give them more scientific validation. Green Foundation has documented and experimented with several practices, including agricultural rituals.

Traditional seed treatments for withstanding stress and ensuring early germination were important practices that we documented and experimented with. A successful example of treating seeds for improved germination is soaking them in salty water. The salt concentration was standardised by floating an egg. The seeds are soaked for 30 minutes in this water before sowing. We found that this method not only improves germination, but also



Enthusiastic children in the school programme on awareness about medicinal plants. Herendyappanahalli, India

helps to control the so-called blast disease .

Other experiments include rituals and ethno-veterinary cures to treat and prevent livestock disease. An example is the experiment with *maddina madike*, which means medicinal pot , and includes soaking 16 valuable medicinal plants in water and leaving them in the pot for several days. The water is then used for treating various livestock ailments. Reviving this practice has also enhanced the position of the indigenous veterinary healers.

Adding other elements

It is not only in reviving and strengthening lost practices that Green Foundation intervenes, but also in adding elements of external knowledge. Like in the case of biodynamic farming, for example, which has influenced our farming practices in the cultivation of rice. The genesis of biodynamic farming goes back to Germany in the early part of the 20th century when Rudolf Steiner emphasized the relationship between the health of the soil, plants and animals, and the cosmic creative forces. This concept is very similar to the ones that rule Indian traditional science and folk knowledge. A group of farmers has experimented with the so called preparations a type of herbal medicines according to the Biodynamic tradition - on their paddy crop

Creating institutional structures

Strengthening village level organisations is another central element of the Green methodology. Distribution of indigenous seed varieties was first conducted from the Green Foundation seed bank in Thalli. Later on the aim became strengthening and promoting decentralised systems of seed disbursement. The villagers opted for reviving or starting farmer and local artisan *sangas*, an old type of village level organisation. The general membership of these groups is between 15 and 25. One of them is a women group. Members of the sangas are represented in the village seed committees .

The village level organisations take their own initiatives. They identify seed requirements for the following year and select and purchase their stock from the savings of sangha members. In each of the sanghas, a central storage room has been identified, and seeds are being conserved by resorting to traditional methods. Room space for seed storage and purchase of storage devices are contributions made by sangha members.

It is crucial to include women in these

village level organisations. Women play a very crucial role in agriculture as well as in all walks of life. When it comes to decision making and social positioning, however, they are often marginalised. In the power relationship between men and women, they are on the receiving end. We have observed an increasing awareness among women about the need to conserve bio-diversity and local knowledge base. For example, the Sharada Mahila Sangha, a women s farmers group, is purchasing and storing seed varieties of wetland paddy, dryland paddy, and finger millet. This group also has a savings and credit programme, which does not charge interests.

Bio-cultural Seed Village

The concept of the bio-cultural seed village as a single market area, and centre for endogenous development, has been developed over the years. Laxmipura, a village located approximately 20 kilometres from Thalli, was identified as an ideal



Photo: Green Foundation

Urumu wild animal control device

location, as it is located in the midst of indigenous communities and tribal groups. Initiatives undertaken in this village include community organisation, seed conservation, strengthening health traditions, promoting kitchen gardens, reviving the cultural heritage, children activities and marketing. The Sangha local organisation is now promoting on-farm conservation and multiplication of traditional crops, such as paddy, navane, areca, chillies, and red gram.

A community hall was restored and painted for the Sangha meetings. A children s group is growing traditional crop varieties of paddy, finger millet and vegetables on community lands. Composting using earthworms, called vermi-composting, has been adopted by some of the farmers in the area. Village level mapping of Laxmipura and surrounding villages has been undertaken and the village level biodiversity registers were completed and subsequently handed over to the headman

of the village in the presence of other villagers. A herbarium of medicinal plants has also been developed, to cater for the growing health requirements of the farming communities.

Networking

Networking is taking place at various levels. The networking activities between the different villages and farmer groups within the project area is stimulated by the dissemination of the quarterly newsletter *Pairu Pacche* in the local language. This publication contains first hand information about traditional practices and rituals, local technologies in agriculture, available indigenous seed varieties, and upcoming exchange events and seed fairs. This newsletter also describes experiences gained from the Compas projects, and invites the readers farmers and like-minded individuals and organisations to share their knowledge about related concerns. Other publications in local language include the agricultural calendar, with

details of auspicious days for agricultural activities, and posters on specific themes, like Linking culture with livelihoods .

Networking also takes place with other organisations in Karnataka state. Close collaboration has been established, for example, with VGKK, which is working with Soliga Tribals in the hills of Mysore, and focuses on the on-farm conservation of agri-diversity and indigenous knowledge. Other organisations on national and international level include the Compas partner organisations. Several meetings and exchange activities

have taken place, to compare the strategies and the insights gained on the different continents.

This level of exchange is stimulated by the publication of the Green Newsletter in the English language, which provides an update of farmer experiments, as well the description of events, such as seed fairs, workshops and visits, the results of experiments, information on the seed programme and innovative techniques, as well as the products available in the Green Foods shop. Another element for networking and information distribution is the CD-rom that Green Foundation produced, called *Cultivating Seed Links* . On this CD-rom bio-diversity is described from an ecological, economic, gender, and cultural perspective.

Some results

In the year 1997, a handful of *Godivari* , a wetland paddy variety, was grown by one farmer in Yerandapanahalli. By the year



Photo: Green Foundation

School children exhibiting the different seed variation of their demonstration plot

1999, 25 farmers from his and surrounding villages had begun to multiply seeds of this unique wetland paddy; dryland paddy, ragi, and millet varieties are also being revived. On-farm conservation of traditional crops, and marketing of the surplus of their seed varieties to fellow farmers has begun to reestablish themselves in these villages again. The objective of this conservation is the continuous improvement of crops, and the conservation of sustainable livelihood systems.

A total of 500 farmers in 83 villages are participating in on-farm conservation activities. The traditional crop varieties revived cover a range of food-crops, like finger millet, dry land paddy, wet land paddy, pearl millet, sorghum, maize, little millet, foxtail millet, kodo millet and proso millet. Also traditional varieties of beans, peas, greens, brinjal, tomato, red gram, green gram, black gram, horse gram, chilli, gourds, oil seeds and other vegetables have been revived.

crease in seed diversity has been established in the Thalli region. Maintaining the enthusiasm of the farmers to reinvent the good elements of traditional practices will also depend on the ability of Green to facilitate a wider movement. This upscaling needs to be done at several levels: at the village level, by strengthening the village level organisations, at the NGO level, by networking and experience sharing with other institutions, and at the general policy level.

Results achieved by Green Foundation

- Activities in a total of 83 villages with over 1000 farmers; in the Green-Compas project 500 farmers in 41 villages are conserving local crop varieties
- Three bio-cultural seed villages established
- Regional and local seed fairs organised
- Youngsters trained as barefoot taxonomists to analyse the local biodiversity
- School children engaged through demonstration plots and competitions
- Traditional village organisations revived in 31 villages now manage seed diversity and exchange
- Traditional practices on genetic resources, health and spiritual perceptions documented
- Central seed bank with 179 species in Green Foundation's farm annex training centre
- Seed specimens, herbarium, photographs and slides on traditional crop varieties
- Networking and publications in local language and English

A new element of participatory plant breeding has been added. Farmers determined their selection criteria, such as high yield, medium-sized grains with good colour, resistance to pests and diseases, drought tolerance, sweet and starchy, non-lodging but good height, good straw yields, late maturity, and other plant characteristics, such as number of tillers, and length and width of leaves.

On the demo farm seed varieties from other eco-regions have been collected and experimented with, to determine their viability and acceptability in the farmers fields. Germination testing, close crop monitoring on the effect of drought, as well as pest and disease resistance, grain and fodder yield are determined. Presently the different varieties conserved in the seed bank are: 41 varieties of dry land paddy, 36 varieties of wetland paddy, 70 varieties of finger millet, 10 varieties of little millet, 6 varieties of *sajje*, 10 varieties of sorghum, and 6 varieties of foxtail millet.

The sanghas and the village-level seed management committees are a way of decentralising and strengthening activities at the grassroots level, forming a farmer seed conservation network is another. Green has also concentrated on networking with NGOs and other organisations, both in India and abroad. Both a strong farmers network and strategic alliances are needed to bring about changes in general policy. This will further stimulate farmers to secure their livelihoods by conserving the genetic diversity of their crops and of the natural environment that surrounds them.



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From project to movement

The external evaluation performed April 2000 concluded that, due to the efforts of the Green Foundation, an appreciable in-

Tempting traditions

Internal debate needed in traditional cultures

Paulin J. Hountondji

In examining a given tradition, two temptations should be resisted: The temptation of contempt and rejection, and the temptation to justify and idealise. Paulin Hountondji, a philosopher from Benin, emphasises the need for internal debate within traditional cultures, in order to develop new alternatives.

It was the fate of some cultures in the world to be considered inferior during centuries of Western domination. As far as Africa is concerned, this included the long years of the slave trade as well as colonialism. This experience led to the internalised, to various degrees, of a sense of inferiority in the cultures themselves. There were other voices, however, both within these cultures themselves and from the dominant, especially the European cultures that rejected these claims to superiority and put Western civilisation back in a far more modest place. African voices have been part of this new concert. A danger here, however, could be that non-

Western cultures are over idealised and romanticised.

Two temptations

The first temptation is that of cultural imperialism based on what might be called ethnocentrism. Historically its most visible form during the last four centuries has been the collective sense of superiority that has emerged within Western civilisation. A wide range of scholars have put their intelligence and learning to the service of this prejudice, such as Gobineau, the author of *Essay on the inequality of the human races*, for example.

The second temptation is that of an excessive and uncritical reaction to the former one: romanticising and idealising the so-called primitive cultures. It usually takes the form of an identification with one's own tradition, as a result of self-defence and justification. We are still facing this danger today. As an African, it is tempting to develop a kind of relation with our own culture which is not so pure and straightforward as it would have been, if we did not feel compelled to answer the challenge of other cultures. People from dominated cultures are not the only ones, however, who react this way. They may be supported by dissident voices from within the dominant cultures themselves. I called attention to this point many years ago: the rejection of ethnocentrism, or in this case Eurocentrism, came first from European intellectuals themselves, especially the anthropologists and ethno-philosophers. Some of them went as far as simply inverting

the imperialistic scale of cultural norms.

One of the most serious issues, therefore, is to get rid today of this obsession and to develop a free and critical relationship to our own cultures. In other words: how to revive the internal debate in places or circumstances where it has been slowed down or stifled by external influence? How to minimise the negative impact of racism and colonial contempt on the way people behave towards their own culture? How to get mentally liberated from the views other cultures held of our own culture, so we can prioritise our own debate?

The wives of King Ghezo

Let me give an example. In his overview *African religion, spirituality and thought* published 30 years ago, Dominique Zahan, a French anthropologist, mentions a sacred custom in some parts of Africa in the nineteenth century. At the burial of King Ghezo of Abomey, now part of the Republic of Benin, several of his wives were sacrificed in the belief that they would accompany him in the Beyond. Moreover, most of them were said to consider it a great honour to be chosen. Colonial ideologists would have simply presented this practice as another proof of the savage or primitive African cultures. The modern anthropologist, on the contrary, tried to identify the *philosophy* behind this custom. To Dominique Zahan, this ritual only meant that for the Africans, there is no real discontinuity between life and death: life flows from death, and death is but the continuation of life.

This is a good example of how ethno-philosophy works: it refers to a collective worldview as a possible justification for the most unjustifiable customs. Cultural nationalism has the same objective: it seeks to justify all inherited practices, including unjustifiable ones. This is the appeal of ethno-philosophy to so many Third World intellectuals, especially African philosophers. Yet, no woman today, even from the Fon culture in present-day Benin, would like to be buried alive with her husband, however prestigious he may be.



Photo: Beckwith/Fisher

It is important to resist both romanticizing and rejecting traditional practices. Hamar woman, Ethiopia, preparing ritual coffee for jumping-the-bull ceremonies

Internal debate

What is needed in the present circumstances, therefore, is to get rid of this need for self-justification before the tribunal of other cultures. This must be done if we are to develop the internal debate we need about our own cultures, within our own cultures. We need to understand how such a ritual came into being, why so many princesses not only accepted it but went so far as to offer themselves as voluntary victims. Zahan's reference to a certain conception of life and death is probably correct, but we need more. We need to appreciate how strong the social pressure on these princesses was, and understand the overall social atmosphere in the context of absolute monarchy in a small size country. We need to understand how this very philosophy of life and death came to develop and why it does no longer work today.

I wrote some time ago about brainstorming as a way to favour, from within a society, a new awareness of values. Instead of trying to impose norms imported from other cultures, it would be more effective to draw upon the inner dynamism of every culture for self-criticism and self-improvement. All cultures have developed social practices in the past that are no longer accepted. Clear examples are the inquisition in Western Europe, the slave trade and in our own time the anti-black racism in Western Europe and North America.

Cultures are not only dynamic and bound to change over time, more importantly no culture has just one system of norms at any one time. Instead, there are always several systems mutually competing in any given culture. Therefore, in any given culture one should always carefully look for the wide range of secondary models, beyond the dominant social model.

African cultural pluralism

In order to do this we need, first, to develop new paradigms in the social sciences. Whatever the discipline, the tendency in the social sciences in Africa has been to frame out just *one* way of living or thinking that appears to express the specificity of African cultures. By calling attention exclusively to what might be considered as the African difference, social scientists have overlooked the internal pluralism that exist within African cultures. They have not focused on the inner tensions that make them living cultures, just as unbalanced and therefore, just as dynamic and bound to change as any other culture in the world. Greater attention should be paid, therefore, to the wide range of marginal practices and norms beyond the norms and social practices usually held as characteristic of a given culture.

The next problem, then, is a methodological one: by what methods, through what theoretical and practical tools is it

possible for the social scientist to identify these hidden models? How can we best recognise the voices that tell another story? To stick to our example, how can we identify the stifled protest which was presumably uttered or eventually suppressed during King Ghezo's burial, by the princesses' mothers, sisters, relatives, secret lovers, or even by the princesses themselves, if they had been given the opportunity to speak off the record? Such questions are based on the assumption that, beyond the unity and specificity of a culture, it is important to explore its internal diversity and pluralism. They invite new approaches and an important shift in the current scientific paradigms.

Breaking walls of prejudice

It is not enough to develop a new reading of the past, a new comprehension of tradition, however. Once it has been recognised that tradition is plural, the practical question is how to promote the internal debate inside our own cultures in such a way that it may itself develop the best possible new alternatives?

Here I have not elaborated on how difficult it can be to organise brainstorming in a context where some people are used to manipulate the masses and for that reason do not want the truth to come out at all. A favourite method used by these manipulators is to pour torrents of lies on their followers. Walls of prejudice are erected around them, making them inclined to avoid listening to any other information or explanation. Despite this, some people sometimes come across facts that were supposed to have remained hidden. The charm is then neutralised and people are prepared, once again, to face reality.

The question thus arises: how can these walls of prejudice be broken? How can people, unwilling to discuss any questioning of the established order, be progressively brought to face reality and accept discussion? How can such people be brought into the brainstorming exercise which is the condition for collective invention and renewal? Specific actions are needed to deconstruct the walls of prejudice erected by manipulators to prevent fair discussion and dialogue. We need to rebuild the traditional cultures with elements provided by internal debate.

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Note: this article is based on a speech delivered for the Prins Claus Fund entitled:

Tradition: hindrance or inspiration? during the conference on The Role of the Intellectual in the Public Sphere .

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Strengthening traditional cultures implies supporting the internal dialogue. Baganda woman, Uganda, combines traditional and modern element in her clothing

Photo: Beckwith/Fisher

Word of the wind

Building bridges between health education and culture

Hernán García Ramírez



The NGO Education Culture and Ecology (EDUCE) has twenty years of experience with development and education projects with the Mayan population in Mexico. Its activities centre on sustainable agriculture, health, gender, communication and child welfare. This article describes how the methodology followed in health-care projects has been based on Mayan concepts. It is supporting the dynamics of local cultures so that they find their place in the modern world.

At the end of the 1980s, EDUCE had the chance to implement two projects in Campeche and Quintana Roo among the indigenous Mayan population. Our first step was to get to know the population and their needs. We used a participatory approach to find ways of bringing the population into the political and economic arena. In 1992, when EDUCE was legally formalized, we broadened this concept of development to include fundamental aspects of culture, gender and environment. Through an intercultural dialogue we tried to reach a common understanding of the different world views of all those involved in the educational process, and the different ways in which these realities could be interpreted.

Mayan concepts of health

Unlike many of the anthropologists we met, our interest has never been to pursue

knowledge simply for the sake of knowledge. We have always been trying to comprehend the depth of Mayan cosmovision and way of thought, to guide us in formulating our educational and development proposals. In health-care, for example, we believe that understanding the concepts of traditional Mayan medicine is central to being able to understand the whole cosmovision of the Mayan population.

The Mayan concept of health is much broader than in that of the West, for it includes the body, the mind and the spirit. The Mayans see these as parts of a whole that must be harmonized with other natural elements. As our contacts with the local communities intensified, we came to understand that in their vision a disease is a state of imbalance between hot and cold forces. We also learned about the way medicinal plants are used to influence hot and cold, as well as humidity, dryness,

and wind. These elements are influenced by spiritual forces, the relations with other human beings and with the *milpa*, the agricultural plot.

Similarities with Chinese concepts

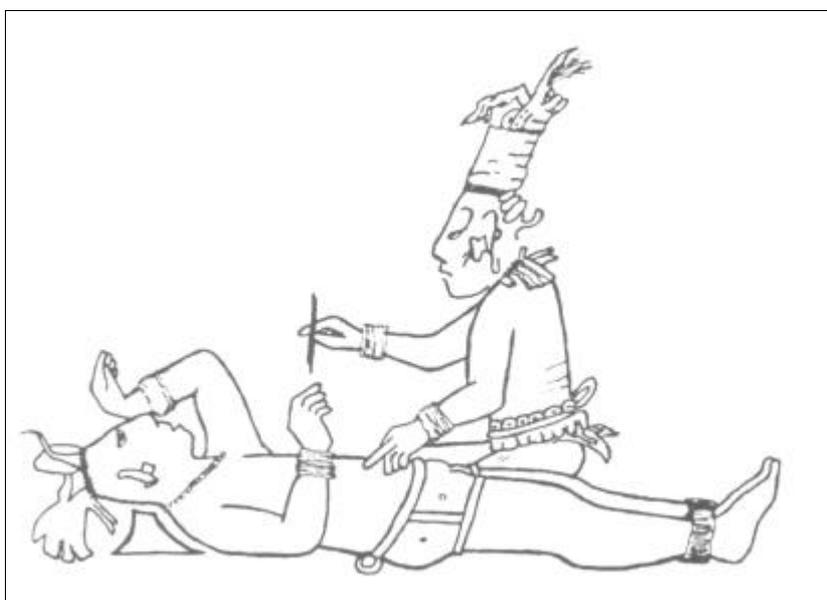
In our work in Campeche, we were surprised by the similarities we found between local Mayan health concepts and Chinese traditional medicine. First we learned that the Mayan healers use two forms of acupuncture called, *Jup* to sting, and *Tok* to bleed. When an acupuncturist partner came back from a visit to China, the Mayan healers we worked with rapidly identified themselves with similar Chinese therapies such as acupuncture and massage.

Over time we came to work with more healers: some 40 Mayan priests, herbalists, massagers, bonesetters, and midwives. Over a period of 4 years we developed a series of collective activities with this group. They were more prepared to share their knowledge and abilities with us than we had foreseen. Our work together included collective discussions, participation in Mayan rites and celebrations, as well as holding workshops to systematize indigenous health practices and knowledge. The local Mayan language formed the basis of all our activities and learning it was our first priority.

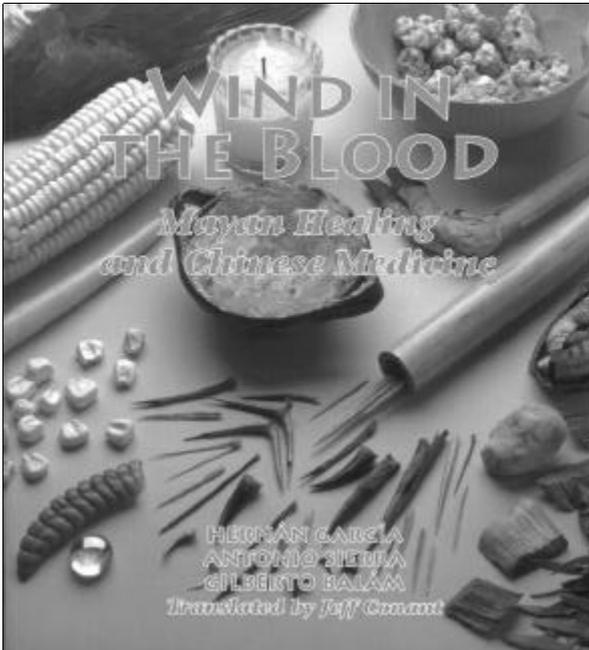
The resulting systematisation of Maya medicine was published in a book called *Medicina Maya Tradicional: Confrontación con el sistema conceptual Chino*. This book was later published in English, under the title *Wind in the Blood: Mayan Healing and Chinese Medicine*. The 40 traditional Mayan healers who participated in this process were the first to receive a copy of this book.

Intercultural bridges

Over time we developed another educational strategy: building intercultural



Ancient drawing showing acupuncture techniques that are still widespread among Mayan communities on the Yucatán peninsula, Mexico



The book *Wind in the Blood* compares the Mayan traditional health practices with Chinese Medicine

germs. The Mayan process of abstraction is very different and there are no parameters that make it possible to understand the microscopic dimension. However, in most health education activities sanitary measures are imposed without trying to make the people understand what they are about. The program workers simply suppose that everybody understands the concept of germs. Many educational campaigns are therefore quite absurd and the population is blamed for not practicing hygiene. This argument contributes to an image that can be used to degrade the indigenous population and leads people to despise them.

By working with the healers, we learned to understand the importance of introducing the bridging concept wind, since this can be used to explain the transmission of many illnesses within Mayan health concepts. Explanations based on bad wind are in line with the Mayan concept of health, in which considerable attention is given to maintaining the inner balance between hot and cold. This includes numerous preventive norms, like not washing the hands when they are hot. We incorporated these elements into the design of health education programmes.

Educational project

In the late 1980s these bridging concepts, as well as knowledge about Mayan cos-

movision obtained from working with healers, were included in the educational process undertaken by EDUCE. Since 1980 we have focussed our educational health work on schooling representatives of indigenous communities as health promoters, to carry out health work and stimulate community organization. Prior to 1989 this schooling, based upon the socialization of Western knowledge, was carried out in a very formal way. In Campeche, we came to realize that, even though this formation was valuable in itself, we were on the wrong track. If we did not explicitly take into account the local culture, we were in fact excluding it and diminishing its value. This meant that we were losing very valuable elements for the schooling of the health promoters.

In 1989, we started to design training sessions for male and female indigenous health promoters, in which traditional healers participated. The Mayan concept of bad wind was used to explain the meaning of microbes. We used microscopes so that the concept of the microscopic dimension became a real and concrete experience. These educational practices were also carried on amongst healers and the general population. In some cases a healer would adopt health promoters, thus introducing them further into their knowledge and practices.

The outcome of this intercultural education process, in which the health promoter based his or her work on both Mayan and Western concepts and practices, was that the most important values within indigenous culture and people's identity were maintained. The Mayan health concepts were enriched with knowledge from conventional as well as alternative Western medical practices.

bridges, by using so called bridging concepts. The bridging concepts we have been able to find and use so far are bad wind, air as life, balance, and nature as a living element. We came to understand these concepts during the process of learning the native Mayan language. This opened up not only new concepts but also other ways of looking at things.

When I personally explored the concepts wind and bad wind, I was profoundly moved. For the Mayan people these concepts have a very different meaning to that implied in the dominating culture of Spanish origin in Mexico. For the Mayan people wind is a complex and rich concept, directly related to natural and supernatural elements. It serves as a bridge between the spiritual and physical world, between the sacred and profane, between external and internal spheres. It includes the Eastern winds - which are loaded with negative influences - the toxic airs from caves or wells, and the illnesses passing from one person, plant, animal of object to another.

In this way we came to understand that the concept of wind encompasses the idea that diseases can be transmitted if, in our terms, they are infectious. For this reason we can use this concept to draw a parallel with Western knowledge and in the process enrich the original Mayan insight. The fact that in China traditional medicine was not damaged by incorporating Western concepts, such as germs, into the concept of wind, shed light on this process. In China placing the modern concepts within the framework of their own traditional system has reinforced their knowledge and practices.

Germs and winds

In the Mayan worldview it is very hard to understand the concept of microbes or



In Mayan medicine it is understood that asthma is caused by a wind, which can expelled from the body by working the point above the breast bone with acupuncture. In Chinese traditional medicine, the same acupuncture point is used in cases of asthma and other lung disorders

Photo: EDUCE

Winds and cholera

The second way in which our experiences with Mayan cosmivision were used was in the design of a large-scale campaign to address the cholera epidemic that struck the region in 1991. This campaign was carried out with the help of government agencies in the affected region. By working together with a youth theatre group, EDUCE designed a play in Mayan language entitled *Winds and Cholera*. In this play cholera was related to the concept of bad wind, in order to stimulate the peoples understanding of the sanitary precautions necessary if infection was to be avoided. For this production and for another theatre script we were awarded a national prize by the Secretariat of Education and Culture.

The activities to eradicate cholera in the region included basic hygiene measures as well as disinfecting wells, and the construction of dry manure sanitary pits in peoples homes. We investigated the use of these sanitary pits in the Mayan communities and found that they were only used when the people had no other place to defecate without being seen. They were also perceived as a way to show that their owners had modern ideas and for the benefit of outside visitors. However, they were not used consciously to avoid disease.

Our thesis was that, if the concept of germs and the way they spread was not understood by the population, introducing measure like the dry sanitary pits and general hygiene would not halt the epidemic. Therefore, more emphasis was placed on community education using the concept of wind. We used a video made from the theatre play *Winds and Cholera*. Moreover, the dry manure sanitary pits were adapted to the local cultural needs using a



Local healer applies a cup in the treatment of back pain brought on by wind

smaller design that included a ceramic toilet to separate urine from excrement, which could be produced locally. Gradually the cholera epidemic receded from the region. In other parts of the same state it remained much longer.

Reinforcing Mayan medicine

In the process described above traditional Mayan medicine was reinforced. In the four years of working with the 40 traditional healers their knowledge and basic concepts were systematised and compared with other medical traditions. We used tools from the Chinese conceptual system to understand and complete traditional medicine. At the end of the process we worked through what we had done with the healers once again in order to validate the proposals and hypotheses for the book *Wind in the Blood*. The traditional healers expressed satisfaction with the fact that their concepts could now be better understood.

Thanks to this book on the systematisation of traditional Mayan medicine, these experiences could be shared with other healers in Campeche, Yucatan and Quintana Roo. It has also been shared with Mayan healer associations, traditional healers and health promoters from many other parts of the country, many of who came from non-Mayan ethnic groups. This resulted in a reaffirmation of Mayan ethnic identity and customs, as well as strengthening their capacity to face external influences. The knowledge and practices of other medical traditions, both of Western and Chinese origin, served to enrich their own medical practices and techniques.

Dynamising local cultures

For us, it is very important to increase the dynamics of local cul-

tures, so they can find their own place in the modern world. This is increasingly important in the context of a globalising world, where indigenous cultures may well disappear unless they find ways to revitalize themselves. At the same time we are convinced that traditional cultures possess rich elements that can help other cultures to find alternative ways forward.

In the activities and methodology described here, EDUCE facilitated the process, while the indigenous actors gave direction to and constructed the road towards the dynamisation of their own culture. The inter-cultural dialogue carried out without impositions has helped us to incorporate the concepts and techniques of Mayan traditional medicine within our other educational activities. Not only because this largely enhanced the efficiency of the education we were able to provide, but also because we came to have great faith in, and respect for, the logic and concepts of traditional Mayan medicine.

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Traditional Mayan herbalists are familiar with the application of over 200 plants



Photo: FRLHT

Participatory rapid assessment of local health traditions

Abdul Hafeel, Suma Tagadur, Unnikrishnan Payyappapallimana and Darshan Shankar

In a great majority of the rural communities of India illness is treated with home remedies and specialised folk healers. FRLHT, the Foundation for the Revitalisation of Local Health Traditions, has initiated a project to document and assess these health practices in four states in Southern India. The selected practices are promoted to improve primary health care. Presently the FRLHT-Compas programme is preparing an action plan to promote selected medicinal plants in one million kitchen home gardens.

Local health traditions are practices, beliefs and customs related to health, that are specific to each locality and community. Diverse and informal health care systems are passed on from generation to generation by word of mouth. These time-tested local health traditions are an integral part of community life and focus on prevention and cures for humans and animals. Knowledge of specific plants and health-related customs are living expressions of these traditions. Thousands of specialised folk healers are versed in diagnostic methods, such as pulse diagnosis, the examination of urine, specific methods for treating poisoning, and *varma kalai*, a diagnosis and treatment using vital points in the body.

In India local health traditions can be found throughout the country and parallel to other Indian systems of medicine, such as Ayurveda, Siddha and Unani. Western biomedicine dominates the public health system. Local health traditions depend on the natural resources of the area and make use of a surprisingly wide array of species. Some 8000 plant species and 200 animal and mineral sources are used in

treating health problems in India's 4,639 ethnic communities.

Threats to local health systems

The increase in demand for new medicines based on natural products has boosted the interest of pharmaceutical companies to research and patent the natural resources used by local communities. An example of this bio-piracy is the recently developed and patented drug for hepatitis from the plant *Phyllanthus amarus*. This is based on the knowledge of the Kaani tribes in Kerala. There are many other potential candidates awaiting patents.

The present public health care system in India is based on Western capital-intensive and technology-centered medicine, which depends heavily on external resources. It has been estimated that one-third of the population is covered by this system. In rural areas the coverage is much lower, sometimes as low as 3%. While the local health traditions are viewed as a treasure house for bio-prospecting, the present attitude at the political level and among the general public is discouraging. Moreover there is a

lack of self-confidence amongst the users and practitioners of these practices. All these factors contribute to its erosion at an alarming pace. This in spite of their efficacy in preventing and curing common ailments, and the possibilities they offer for encouraging self-reliance in the primary health care.

The documentation process

In this situation there is a need for a movement that incorporates effective traditional health practices, based on local resources and local knowledge, into the existing public health care system. Identifying effective practices through elaborate pharmacological and clinical trials is a time consuming task. To validate a single practice may involve several years of laboratory research and huge capital investments. FRLHT has started to validate health practices in an alternative way, by developing a methodology for documentation and participatory assessment, which does not involve detailed laboratory and clinical studies.



Participatory rural appraisal was used to prioritise the prevailing health conditions

Selection of field collaborators

To start the documentation and assessment of the local health traditions in the states of Maharashtra, Karnataka, Tamil Nadu and Kerala, a meeting of 13 local NGOs was organised. These agencies had already been involved in activities on the conservation of medicinal plants and traditional health care, and had established good relationships with the local communities. Operational details and responsibilities were agreed upon. NGO staff would be trained and community level support committees established. Local communities would be fully involved in the revitalisation activities.

Training field staff

A series of training workshops were held to orient the field staff in documenting local health traditions. A number of training modules were developed on the following subjects: the splendours of cultural diversity and cosmovisions; the documentation of local health traditions and the world view in which these practices are embedded; finding the effective health practices through participatory rural appraisal; and rapid assessment of local health traditions. Appropriate tools for documenting these practices as well as describing prevalent health conditions were discussed.

Data collection

A pilot study was carried out in four field locations prior to the actual documentation process. Questionnaires to record the knowledge, resources and socio-cultural aspects of health traditions were field-tested. In order to record different levels of knowledge and practice, five subsets of questionnaires for folk healers were designed: for veterinary practitioners, for healers treating poisonous bites, for traditional birth attendants, for traditional bonesetters and for those healers who treat more general health conditions. These questionnaires included the concepts of health and disease, disease management, the availability of natural resources for the remedies, and what people thought about traditional health practices.

The household questionnaires focused on home remedies as well as food practices and the health related aspects of the daily routine.

Data collection and processing

In total 1048 healers, around 80% of the folk healers in the area, were interviewed between 1998 and 1999. Moreover, the practices of 1800 knowledgeable households, 6-8 in each hamlet of 100-200 families, were collected and documented. In three survey areas in Tamil Nadu a total of 106 health conditions that were commonly treated at household level were documented. The resources used in the household health care practices range from between 84 and 127 items. The materials used in these remedies were from plant origin in 44% of the cases, the rest of the cases were animal and mineral in nature. Based on these data 96 health practices were selected for further analysis in the assessment workshops in the second phase of the project. The resources used in the practices selected were subjected to literature research for further evidence of their use.

Prioritising health conditions

In five selected areas the prevailing health conditions were prioritised by means of participatory rural appraisals with groups of 35 community members. This exercise had four steps: listing the health conditions prevalent in the community; establishing the criteria to prioritise the health conditions; developing a matrix with criteria and health conditions; and ranking, or scoring, the conditions based on each criterion. Twenty health conditions with the highest scores were selected for the assessment procedures.

The communities understanding of these health conditions, like causes, symptoms and stages, was also discussed and documented during the exercise. The selected health conditions were screened to see what home remedies were available to prevent or cure them, and if the health condition or remedies were repeatedly mentioned during the interviews. The accessibility of the natural resources, their affordability and the effort required to prepare the remedies were also documented.

Rapid Assessment

In the second phase of the FRLHT-Compas project the objective was to develop a Rapid Assessment of Local Health Traditions (RALHT) protocol to assess the selected home remedies for subsequent promotion

in the primary health care system. This exercise was named Rapid, as it did not involve detailed laboratory or clinical studies.

Planning Meeting

A workshop was organised to determine the methodology of the assessment process and design formats. It was decided to base the assessment on the practical experience of the local communities and the health care experts, as well as on the experiences from Ayurveda, Siddha, Unani and modern pharmacology. Five areas in Tamil Nadu were selected for assessment workshops on the basis of the quality of data and the diversity of practices identified.

Rapid Assessment workshops

The assessment workshops included community members, folk healers practitioners, practitioners of Western biomedicine and of the Indian system of medicine (Ayurveda, Siddha and Unani), field botanists, pharmacologists, researchers, facilitators, NGO staff, reporters and FRLHT staff. These community-based workshops aimed at selecting the best home remedies for their promotion in primary health care by means of a rapid assessment exercise. The references for the selected plants, animal parts or minerals collected from literature of Ayurveda, Siddha, Unani and modern pharmacology helped the participants to comment on the local health practices under view.

During the workshop groups were formed to comment on a specific health condition and its remedies. The NGO staff assisted to facilitate and report on the process. The natural resources used in the remedies were identified by the community through demonstrations and documented in a voucher specimen collection. Missing data were added and cross-checked. The discussions and individual comments were also documented. In the plenary sessions each group presented its conclusions on the remedies, and commented on efficacy. Any differences of opinion were clarified and a common un-



Community members discuss a traditional remedy with experts of other medical systems during an assessment workshop

derstanding was developed. In five workshops about 50 remedies were assessed for 20 health conditions.

Identification of remedies for promotion

Remedies with strong empirical evidence from the community and the folk healers will now be promoted, irrespective whether they receive support of other medical systems. Distorted practices are discouraged. Remedies with strong positive empirical evidence from the communities, but negative assessment from the other medical systems, will be subjected to further research among the communities. This category is called data-deficient. The remedies which are selected positively are subjected to rapid pre-clinical trials in the rural locality, with the active involvement of folk healers, community and representatives from different medical traditions.

Some learning points

This entire process has only looked at curative practices. Many important preventive traditional practices, such as breast-milk enhancing practices, or certain porridges used to prevent rheumatic complaints, are equally relevant. This will be included in future activities.

We also found that rural people's understanding of health conditions does not always coincide with the symptoms, stages and causes mentioned by the other medical systems. For instance, the community from Virudhunagar understood that leprosy was caused by the bite of a snake. This exercise gave the local community an opportunity to seek clarification on the causes and symptoms of leprosy and its transmission.

During the workshops valuable lessons were learned which lead to the improvement of the methodology of rapid assessment of local health practices. We learnt that great emphasis should be given to selecting and orienting local healers and medical experts of different backgrounds before the actual assessing exercise. Moreover their experience in health care in the area and familiarity with the local language should be considered. This maximises the interaction with the community members.

During the process of prioritising health conditions and remedies to be discussed during the assessment workshop, more detailed data should be collected. This could be done through pre-workshop exercises, in which the prioritised conditions are discussed with folk healers. This helps to ensure that both literature research and assessment workshops are carried out as effectively as possible. Moreover the number of health conditions and remedies to be assessed per day should be limited, in order to facilitate a complete and comprehensive discussion and understanding of each local health practice. We found it

difficult to manage more than six health conditions in a one-day workshop.

Two databases

Two databases are emerging from this work. The first database systematises the local health traditions of the Southern states of India, based on the documentation process mentioned above. This will be a centralised, dynamic database in English in the FRLHT office in Bangalore. Data correction of this database is taken up at present to facilitate its use by other organisations. As this is the intellectual property of the local people, the data will be returned to the respective communities in the form of People's Biodiversity Registers. This is part of an extensive programme to protect the local knowledge being pirated for commercial purposes without proper consent of the local communities or equitable benefit sharing. The second database is on reference literature with the aim to serve evidence for clinical studies based on the local health traditions. Firms and NGOs that operate in line with the Convention on Biodiversity will benefit from this database. Both databases are in the construction stage.

Mainstreaming the findings

As a third step in the methodology followed by FRLHT, ways are sought to introduce the positively assessed practices into the mainstream public health system. In January 2001 the methodology and findings of the documentation and assessment process were presented to a forum of scientists, policy makers and developmental NGOs. During this workshop, which received considerable attention from the press, an action plan and strategy for the revitalisation of community based local health traditions in one million rural and urban households in Tamil Nadu was prepared.

The Kitchen Herbal Garden (KHG) is one of the programs that FRLHT has initiated to promote the positive assessed practices. At the household level a package of selected medicinal plants for several health conditions is promoted. The programme targets rural women and the local community organisations, the *sanghas*. This process has already started. Last year 16,000 kitchen herbal gardens were established in Tamil Nadu, Karnataka and Kerala. Besides constituting a valuable aid in the household health situation, the possibility of growing some herbals for commercial purposes has been taken into account. At the local level the Women Federation has taken the responsibility for executing the project, while the NGOs play the more technical role of arranging training and growing the medicinal plants



Photo: COMPAS

In the Bio-Resource Center in Auroville, one of the participants in FRLHT's assessment programme, different medical systems are listed

in nurseries. Monitoring is carried out by both the NGOs and the Federation.

Another part of the project for the revitalisation of local health traditions is to lower the incidence of water-borne diseases in the household, by reviving the South Indian tradition of *choodo thaneer*. This practice implies boiling water with specific herbs before it is used for human consumption. Another aim of the project is to seek citizens' support for saving critically endangered species from extinction, by encouraging individuals, community centres, schools and other organisations to grow them in small numbers.

The way forward

The method of rapid assessment is a platform for cross-cultural dialogue. Additions to incompleteness, the removal of distorted practices and the encouragement of positive local health traditions are the result. These elements are essential for the growth of a culture. The same platform gives an opportunity to the community to assess their own practices and experiences in all its aspects. This methodology can now be replicated in other areas and in other fields. This pluralistic promotional strategy, which recognises and incorporates all local expertise, is an urgent need to provide health for all.



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Religions, traditions and biodiversity

Religious development initiatives

Jeffrey A. McNeely

Sacred Gifts for a Living Planet is a joint initiative of the Alliance of Religions and Conservation (ARC) and the World Wildlife Fund (WWF). Eleven faiths are committed to conservation projects on every continent. They express their environmental concern in language and action appropriate to their tradition and social situation. This programme, a living example of the possibilities of formal religions in conserving natural resources, builds on indigenous cultures in the local communities. IUCN contributes through its work on sacred protected areas.

Virtually all religions are sensitive to biodiversity concerns, essentially asserting the need to treat all life with respect. But this religious perspective has not always been sufficient to conserve biodiversity. Christianity has often promoted over-exploitation of natural resources, while the Hindu recognition of the Ganges as sacred river has not prevented its pollution. The balance advocated by Islam is in many cases replaced by environmental pressures, and the Tao non-interventionist philosophy did not prevent the ancient Chinese from making profound changes to their land and water.

But religions constantly evolve, and it is possible that a stronger religious response to a decline in biodiversity will emerge as the concerns about such loss begin to affect people more profoundly. The faiths have a unique role to play here because of their histories, networks, perspectives on time and, perhaps most important, their core beliefs.

Recent initiatives

The World Wide Fund for Nature first invited the faiths to become partners in environmental work at Assisi, Italy, in 1986, after the Alliance of Religions and Conservation was set up in 1985. Today ARC includes eleven religious faith members, who have undertaken thousands of projects and reached countless communities with their environmental message.

WWF and ARC launched a new programme in November 2000 in Kathmandu, Nepal, entitled *Sacred Gifts for a Living Planet*. This programme is based on two principles that characterise the major religions: to celebrate and respect the gift of life and to promote the concept of giving. The idea is to create new, significant and environmentally important projects addressing a wide range of issues affecting biodiversity, like climate change,

marine conservation, sustainable forest management, and environmental advocacy.

Numerous Sacred Gifts

The Sacred Gifts are practical, concrete and active expressions of concern of religious traditions about the natural world. The Gifts include: the restoration of sacred forests in India; the reinstatement of a Buddhist hunting ban that will help protect Mongolia's endangered snow leopard; support to Muslim fishermen to save turtle nesting sites in Zanzibar; and the initiative of the Islamic government of Saudi Arabia to establish the country's first biosphere reserve. Japan's Shinto community is vowing to purchase only sustainably grown wood for their thousands of shrines, and Catholic Benedictine Sisters are doubling their school programmes geared toward reducing the toxic waste in Lake Erie in North America.

Other initiatives: the Methodist Church world-wide is developing an ethical framework to support environmental and social justice, the leaders of the United Synagogue of Conservative Judaism and the Union of American Hebrew Congregations - together representing some 80% of the Jews in the US - are launching an environmental conservation programme to counter climate change, and stimulate consumer preference for sustainably-managed forests. The China Taoist Association, the umbrella organisation for 40 million Taoists in China, is calling on its members to stop using endangered wildlife for traditional medicines.

Catalysts for action

The Gifts are an important way of linking formal religions with the conservation movement. *Through these Gifts we are reaching out to huge new constituencies - the 3 to 4 billion people that these faiths*

represent - to work with them for the conservation of our living world, said Dr. Claude Martin, Director General of WWF International. *Sacred Gifts are catalysts for action. They are conservation templates for religious followers around the world: a community that is capable of having an incredible impact on efforts to save the natural world.*

Martin Palmer, General Secretary of ARC, said: *In devising new ways of protecting nature, religious diversity may be the secret to how to live more caringly with nature. All faiths have environmental teachings. What we see in these Sacred Gifts are these teachings becoming real, changing lives and our relationship with nature.*

Religions and biodiversity

All of the world's major religions are today sensitive to the importance of biodiversity, though of course their historical writings do not use today's conservation vocabulary. Each of the faiths represented in the Alliance of Religions and Conservation has distinctive beliefs on the role of nature and humanity, which shape their lives as faith communities and their relationship to the environment. In various degrees religious beliefs have been able to prevent the excessive human demands on the environmental resources on which they depend. More fundamentally, religions provide a holistic view of how to use natural resources, based on an ethical perspective. Therefore, approaches to conserving biodiversity based on cultural and religious values are often more sustainable than those based on mere legislation or regulation.

The next page shows a brief summary of major religious traditions and the way they relate to modern biodiversity concerns, including a few quotes from religious leaders represented in the ARC.

Overview of the informal and formal religions

Animism is a diverse set of beliefs held by traditional peoples who believe in the spiritual connection between humans and nature. Animism can be considered as one of the oldest religions in the world. It is widespread on all continents and is often combined with a formal religion. Many animistic belief systems are accompanied by specific taboos. Breaking a taboo can result in sanctions from the spiritual world, such as illness, loss of crops or drought. The taboos often apply to particularly vulnerable sets of natural resources. Animism often includes totemism: the belief in a mystical relationship between individuals and certain animals or plants. Totems are normally associated with taboos: for example, an Amazonian hunter within a social group that has the peccary - a wild pig species - as a totem may be forbidden from hunting these animals. Thus totemism helps to restrict the exploitation of certain natural resources.

The Baha i Faith is a modern religion founded in the mid-19th century. The Baha i Scriptures teach that, as trustees of the planet's vast resources and biological diversity, humanity must seek to protect the heritage of future generations. The Baha i faith sees in nature a reflection of the divine, and approaches the earth - the source of material bounties - with humility. The Baha i are guided by the fundamental spiritual truth of our age: the oneness of humanity.

Buddhism has a total of about 300 million practitioners found in many Asian countries. It teaches that a behaviour has a natural relationship to its resulting consequences in the physical world. Right actions lead toward *nirvana*, the liberation from desire and ignorance, while negative actions, such as killing animals, lead away from that goal. Buddhism is a religion of love, understanding and compassion, and is committed towards the ideal of non-violence. As such, it also attaches great importance to wild life and the protection of the environment.

Christianity, with some 1.6 billion members, is the dominant religion in Europe, parts of sub-Saharan Africa, the Pacific, and the western hemisphere. Christians believe that all of creation is the action of God, who continues to care for all aspects of existence. The very nature of biodiversity is seen as giving glory to the Christian God. Christianity teaches that humanity may not disorder biodiversity and destroy God's creations. If it does so it risks destroying itself.

Hinduism, the dominant religion in India with about 700 million followers, teaches the all-encompassing sovereignty of the divine, manifesting itself in a graded scale of evolution. While the human race is currently at the top of the evolutionary pyramid, it is not seen as something apart from the earth and its biodiversity. Hinduism is permeated by a reverence for life and an awareness that the great forces of nature - earth, sky, air, water, and fire - as well as various orders of life, including plants, trees, forests and animals, are all bound together within the great rhythms of nature. Hindus believe that all plants and animals have souls, and that people must do penance even for killing plants and animals for food.

Islam, with about a billion adherents, is the dominant religion in North Africa, the Middle East, and many Asian countries. The entire universe is God's creation; Allah makes the waters flow, upholds the heaven, makes the rain fall, keeps the boundaries between day and night, creates all biodiversity and gives it the means to multiply. *We are God's stewards and agents on Earth. We are not masters of this Earth, it does not belong to us to do what we wish. It belongs to God and He has entrusted us with its safekeeping.* *)

Jainism is one of the oldest living religions, beginning in India at least 2800 years ago. The ten million Jains believe that all living beings have an individual soul which occupies the body until it dies, then leaving the body and immediately taking birth in another. Jainism is based on the principle of non-violence towards human beings and all of nature. Jain cosmology recognizes the fundamental natural phenomenon of symbiosis, or mutual dependence, with all aspects of nature belonging together and bound in a physical as well as a metaphysical relationship. This ancient perspective is reflected in their modern ideas about biodiversity.

Judaism originated in the Middle East. The 18 million Jewish practitioners today are thinly spread around the world. Judaism teaches that God created the world, making order out of primal chaos. The sun, the moon, the stars, plants, animals, and ultimately humanity were each created with a rightful and necessary place in the universe. Judaism teaches that the earth is the arena that God created for man. Man was commanded to behave toward the rest of biodiversity with justice and compassion. But humanity inevitably lives in tension between its power and the limits set by conscience.

Sikhism began in India the late 15th century and now has about 16 million followers. Sikhism builds on the message of the oneness of the universe created by an Almighty God, who is master of all forms and the source of the birth, life and death of all beings. Sikhism teaches conspicuous consumption, emphasizing mastery over the self rather than mastery over nature. Sikh religion aims for harmony with the Earth and all creation. Sikhs believe that the current instability of the natural system is a reflection of the instability and pain within humans.

Shinto is the system of indigenous religious beliefs and practices of Japan, first appearing in written form some 1400 years ago. Shinto is based on beliefs concerning the nature and attributes of *Kami*, the sacred power, which is found in all individual things. Shinto temples are often established on sites that have particular spiritual integrity and force, often with large groves of trees (totalling nearly 120,000 ha). Shinto is strongly based in rural agricultural practices, involving various ceremonies and festivals that guide the relationship between people and nature.

Taoism has a history of over 2500 years, and is one of the main components of Chinese traditional culture. It has at least 40 million active followers with many more passive followers. Tao means simply the way. According to Taoism, everything is composed of two opposite forces known as Yin and Yang. When the two forces reach harmony, the energy of life is created. Taoism judges the affluence of a society by the number of different species; thus a society with high levels of biodiversity is affluent, while societies with declining biodiversity are themselves in decline.

Zoroastrianism is the ancient, pre-Islamic religion of Iran, that now is most prosperous in India. Founded in the 6th century BC, it contains both monotheistic and dualistic elements of good and evil. *Our role in this world is to serve and honour not just the Wise Lord, but the seven bounteous Creations - the sky, water, earth, plant, animals, humans and fire - which are the gifts of God on High to humanity.* *)

*) Quote from religious leader represented in ARC.
This overview does not pretend to be complete.



Spirit medium in Iganga, Uganda, explains how the flora and fauna influence healing and farming practices

Building on indigenous traditions

Most indigenous approaches foster respect for their environment, plants and animals, which play an important role in their spiritual traditions. In many parts of Asia, Africa, and Latin America local people have established sacred sites on the basis of inherent spiritual or religious significance. Such sacred sites are often sanctuaries for biodiversity as well as locations for spiritual practices. These sacred sites have often survived substantial cultural changes. Many traditional cultures also consider certain species as sacred, with elaborate myths, folktales and magical powers related to them. In this way the traditional societies promote conservation, though the original motivation may not be directly related to this purpose.

Establishing a connection between traditional cultures and the conservation of biological diversity is by no means a simple matter, however. The traditional conservation practices remain viable only as long as the local communities depend on the natural resources in their immediate vicinity, and have full control over them. Another precondition is that local communities retain a sufficiently high level of internal cohesion. In most cases these conditions are undermined when outside state or corporate bodies establish control over the natural resources.

Moreover, traditional resource-use patterns may be sustainable only under conditions of low population density, abundant land, simple technology and limited involvement with a market economy. Unfortunately many traditional societies today are confronted with market pres-

ures, higher population densities, and new technologies, making it more difficult to maintain the integrity of their traditional methods and organisation, even when these are reinforced by religious beliefs. Even so, many indigenous peoples are seeking new ways of adapting their traditional beliefs to modern realities, often using a combination of animism and a formal religion as their spiritual basis. In this process they may draw on support from conservation organizations to protect their interests.

Encouraging developments

The fundamental beliefs that underlie each faith provide a basis upon which new ethics of conservation, respect and responsibility for the sacred natural world

can be developed. Formal religions and indigenous traditions can stimulate each other in the process of finding new ways to promote nature conservation. It is encouraging to note that many of the major formal religions are now seriously addressing the challenge to build a renewed sense of practical responsibility among their adherents, and look for ways of putting this responsibility into practice. The combined efforts of ARC and WWF in the form of the Sacred Gifts for a Living Planet programme, are a living example of this concept. In a similar way the IUCN encourages the protection of sacred sites as part of biodiversity conservation.

The experiences from Compas partner organisations such as IDEA and GREEN Foundation in India, ECO in Sri Lanka, TIRD-P in Indonesia, AZTREC in Zimbabwe and ADICI in Guatemala, are also examples of efforts to reinforce the linkage between people and nature.

All these initiatives together have considerable potential to enable a more positive relation between people and the rest of nature.

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Tribal cosmovision and agro-ecological practices are often combined with formal religions. Tribals in Orissa, India

World Faiths Development Dialogue

Wendy Tyndale



Photo: World Bank

The World Faiths Development Dialogue was set up in 1998 as the result of an Inter-faith Conference on Poverty and Development. This conference was chaired jointly by the Archbishop of Canterbury and the president of the World Bank. The aim of the World Faiths Development Dialogue (WFDD) is to enhance dialogue and action on development policies, both within the religious communities themselves and between the communities and multilateral development institutions.

The main focus of the World Faiths Development Dialogue up to now has been the nature of poverty itself and on the need to adopt a more holistic approach to development processes. All religious traditions agree that, in order to be sustainable and meet people's needs, these must include not only the economic, but also the cultural, social, environmental and spiritual aspects of life.

In order for this to be achieved, a purely scientific and technological approach to knowledge is insufficient. We also need to turn to an understanding of reality beyond what is immediately perceptible and measurable. The WFDD is at present discussing the draft of a paper on Cultures, Spirituality and Development. This paper aims to demonstrate that if people's culture and spirituality are ignored, any development activity may lead to processes that will shatter their very identity.

In three countries World Faith Development Dialogue initiatives have been initiated. In Ethiopia an inter-faith group has been set up with a focus on food security. In Tanzania, religious institutions are working on health policies. In Guatemala representatives of Evangelicals, Catholics, Jews and Muslims together with indigenous spiritual leaders, are discussing a paper on the values that should underlie the process of rebuilding the country after 36 years of armed conflict.

World Peace Summit

In order to try and draw nearer to the United Nations, the WFDD agreed to organise three workshops on poverty at the Millennium World Peace Summit for Religious and Spiritual leaders, which took place in New York at the end of August 2000. Despite the participation of people from the World Bank and the UN Development Programme in one of the sessions, the discussion touched little on the theme

of co-operation with these bodies. This would seem to indicate that the religious communities still felt quite removed from them.

There were, however, many general calls to improve global and national policies, above all related to the distribution of the world's wealth in favour of the poor. The suggestions included taxing transnational corporations, cancelling the debts of the poorest countries, and reviewing the way through which the UN and other bodies channel their money. The present injustices and growing gap between rich and poor is unacceptable to all religious communities, whether understood from the point of view of the inter-relationship between all human beings, or from that of all people being the children of the Creator.

Governments and international development agencies were urged to be more respectful of local cultures and the rights of indigenous people, to adopt policies which do not destroy either social structures nor the natural environment, and to make the poorest children the top priority of their agenda. Moreover, there were calls to both North and South to stop the arms trade.

Priorities

Predictably, education emerged as a high priority for the religious leaders. Educational courses need to be embedded in the values shared by all the faith traditions, such as peace, justice, and a spirit of service and honesty. There was also considerable discussion about the need to bridge the gap between religion and science.

However, it was on the need for personal transformation as a prerequisite for any social change that all religious and spiritual leaders

were most united during the World Peace Summit. Only through achieving a state of internal equilibrium and/or by drawing nearer to God, can sound judgements be reached and wise actions taken. The promotion of values, based on the vision of the world as one family, is the basis of the joint actions of religious traditions with the development agencies. The next step of the WFDD is to see how some of these aspirations can be defined more closely, so they can form the basis of specific actions that will lead to social change.

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Photo: World Bank

Participants of the World Peace Summit, celebrated in New York, August 2000

Eco-cultural villages in Zimbabwe

Cosmas Gonese and Raymond Tivafiri

In Zimbabwe environmental degradation is rampant and threatens the livelihoods of the most marginalised groups of society. In this article the experiences of the Association of Zimbabwe Traditional Environmental Conservationists (AZTREC) is described. This indigenous organisation has been involved in the process of healing the land and its elements guided by traditional leaders and spirit mediums. AZTREC's activities are centred around 12 eco-cultural villages, where many income generating activities are taking place.



Photo: AZTREC

Building the Zimuto eco-cultural village

The Zimuto area in Southern Zimbabwe is situated near one of the Colonial Agricultural Institutions, which for decades has promoted conventional, market oriented agriculture. Hence, the communities in the Zimuto area were stimulated to adopt the conventional system of modern agriculture. This was done without looking at traditional farming methods; their cost effectiveness, productiveness and sustainability under local circumstances were not taken into account.

In the process many farmers made an abrupt shift from organic manuring of the soil to the utilisation of chemical fertilisers. Over the years this led to soil degradation. Many development agencies that subsequently came into Zimuto also cast aside indigenous knowledge and put in its place modern scientific methodologies. They did not try to understand the culture of the Zimuto community. Despite this external pressure several traditional methods of farming, that are combined with expressions of spirituality, have remained alive in the rural communities.

How did AZTREC begin

AZTREC is an indigenous organisation that started in a small way in the Zimuto area during the armed liberation struggle in the 1970s. During this struggle there were concerted efforts to improve environmental conservation for livelihood self-sustenance. The communication and interaction between chiefs, spirit mediums and the freedom fighters were frequent, and especially significant when it came to caring for nature.

In 1980, the new revolutionary government was installed. Initially, this government did not address the most pressing issues that the people had been struggling for, such as land ownership and the posi-

tion of the traditional leaders. In fact, in the early 1980s laws were passed which withdrew the power of the local chiefs, and failed to recognise the role of the spirit mediums. Instead, the government appointed local councillors in the communities and this led to a dramatic loss in the quality of woodlands, wetlands and other natural resources. The traditional rules and regulations that had protected them were no longer enforced by local leaders. Population pressure and land scarcity, due to the lack of land reforms, worsened the problem.

The authors of this article were freedom fighters who operated in the Zimuto area during the armed struggle. In this position we frequently discussed these issues and concerns with traditional leaders, like chiefs, spirit mediums, influential elders and war veterans in the Zimuto area. There was a general feeling of unrest, because the development agenda of the new government failed to take indigenous practices and institutions into account. In 1984, a group of traditional leaders, spirit mediums and war veterans decided to start a process that would try to heal the land and its elements.

AZTREC's methodology

During the first year, local consultative meetings were held in 7 provinces, where local authorities, like traditional chiefs, village heads, spirit mediums, who were also farmers, met to discuss the issue of natural degradation, lack of land and food security. They discussed a new strategy for Zimbabwe, which would take into account indigenous practices in natural resource and land use management.

After a year a general gathering was held in Masvingo, and the chiefs, spirit mediums and war veterans from 7 districts

decided to form AZTREC. Their major objective was the conservation of the environment, taking woodland management, wetlands management, agricultural land use, reforestation and cultural survival as the basic elements of their strategy. The influential spirit medium Mrs Ambuya Nehanda, was appointed as the patron of the new organisation. Since 1985 these general meetings of the traditional leaders are held twice a year, to guide and advise the organisation.

Start with woodlands

It was decided to take woodlands management as the starting point for activities. This was because of the obvious importance of the woodlands for the farming families. In traditional culture, the woodlands are considered to be the habitats of the spirits, and they provide a place where rituals can be performed. In economic terms, the woodlands are important in the provision of meat from game and birds, materials for construction and crafts, and natural medicines. This is important in a situation where fees for hospitals are too expensive for most people, and where adequate western medicine is unavailable.

In order to start woodland management improvement, the chiefs talked to the local leaders or kraalheads, in their respective areas. They discussed traditional rules and regulations, and stressed the importance of re-installing and enforcing these again. Together they started to identify the woodlands, springs and vleis, as well as the sacred sites in their area, and the rules and regulations that used to be there to protect them. Each chief held meetings with the communities to discuss these issues. The village chiefs began to take over responsibility for the natural

resource management, though officially this task was still in the hands of the government appointed councillors, who did not have the full backing of the population. In addition, under the guidance of the spirit mediums, nurseries with indigenous tree species were started in the 7 districts.

Initial government resistance

As had been expected, this process was met by considerable government resistance at different levels, like for example the Forest Commission officials. Matters reached a head when, in 1989, AZTREC decided to become an officially registered organisation and therefore required government approval. At first this request was rejected. Then AZTREC offered indigenous tree seedlings from their nurseries for the national tree planting day. Forest Commission officials, who had initially refused recognition to AZTREC, went to see the nurseries of indigenous tree species. They were very impressed, because they had considered it impossible to grow indigenous tree seedlings in a relatively short period.

The indigenous seedlings were used during the national tree planting day on condition that the local chiefs would perform all the necessary rituals in the communities during the planting activities. The ceremonies were conducted and the activity was highly successful. This was the start of the formal recognition of AZTREC by the government.

Indigenous tree nurseries

In this way tree planting became a central element in AZTREC's activities, and the tree nurseries the centre of local activities. Once AZTREC was officially recognised and donors could be approached for financial support, extension staff was based in the nurseries. The villages around

the nurseries brought in seeds; each community would analyse their situation and bring the seeds they considered necessary for the next season. Schoolchildren would come to dug soil, fill pots and prune roots. When the time came to plant the trees, the community would take the seedlings to their homes, or to use them in community orchards and wood lots.

This work developed over the years. AZTREC now manages 12 central tree nurseries, and planting was no longer limited to the national tree planting day. The nurseries together still provide some 50,000 seedlings each year, with 75% indigenous species, and 25% exotic fruit trees, like mango, for example. Since 1985 a total of 500,000 seedlings have been planted of the wood lots in some 40 communities in each of the 7 districts. Moreover, AZTREC has gradually taken over all the government run tree nurseries from the forest commission. Many of the wood lots established in the early days have now matured, and are providing fruits, medicine, honey, and construction materials. These products are used for home consumption and for marketing. The central tree nurseries now have become the commercial centres where these products are processed, stored and sold.

Eco-cultural villages

Over the past 6 years the tree nurseries have gradually been transformed into eco-cultural villages.

These centres do not only act as commercial centres for forest produce; they also play a role in bio-diversity management, like the rehabilitation of sacred woodlands, wetlands, vleis and springs. In the ecocultural villages activities such as training and experiments with organic farming, a clinic for traditional health care for humans and animals, cultural promotion activities, and eco-cultural tourism

also take place. All these activities have created jobs for young people in the area.

The transformation of the nurseries into eco-cultural centres has been, and still is, a process guided by a committee of local leaders, called the Traditional Assembly. Chiefs, spiritual mediums, as well as representatives of farmers, women and youth groups are involved in this organisation. Each Assembly formulates policies and an annual strategic plan for its eco-cultural village. It also presides over cultural events, like rain-making ceremonies and the management of sacred woodlands in the area.

In the surrounding areas the kraalheads are responsible for translating the policies into action. They have formed implementation committees, and in each zone these are divided into project committees and project subcommittees headed by local farmer innovators and practitioners. These subcommittees are active in organic agriculture, traditional health care, natural resources management, and income generating projects.

Organic agriculture

Other activities in the eco-cultural centres include experiments and training activities in organic agriculture. The concept of organic agriculture is now filtering into the community. Farmer innovators, who have specialised in new ways of applying indigenous knowledge and organic agriculture, are demonstrating these techniques in their own farms. Now some 40 farmers around each of the 12 eco-cultural villages have established organic agriculture in their own fields.

The farmer innovators have divided themselves into two groups: one group works with vegetable gardens using organic manure as fertilisation, the second group focuses on organic dry land crop production. In the 13 vegetable gardens traditional pest control measures are used, like growing colourful and aromatic flowers to attract the predators that feed on the pests that infest the vegetable plants. Non toxic herbicides are sprayed and some farmers use solutions from specific flowers for this purpose. The vegetable gardens have generated considerable income for the families and have led to improvements in their nutritional status. The incidence of protein-shortage related diseases has declined in the communities.

A group of innovator farmers working on dry land farming has carried out experiments with finger millet, bulrush millet and maize based on organic manure, non toxic herbicides and inter-cropping techniques. Traditional ceremonies were held to ask the ancestors to protect crops from pests and diseases. It was found that organically produced crops could withstand drought better than chemically produced crops. There was a good harvest. On half an acre of each crop, farmer innovators harvested between 2.5 and 3 tons, where



Photo: AZTREC

A workshop with spirit mediums (center) on indigenous agricultural techniques

earlier harvests had been minimal.

First there was a lot of resistance from neighbouring farmers as well as extension staff from the Ministry of Agriculture. This started to change when the results became visible, both in yields and pest management. Local farmers were invited to see these results for themselves. Slowly extension staff from the government also became convinced of the value of organic agriculture. In fact, they are now being trained by AZTREC.

Health and culture

Apart from their role in natural resource management, agriculture and marketing, the eco-cultural centres have several other functions. In the field of health, demonstrations, exchange activities and a clinic on traditional human and animal medicine have been organised. The terrible HIV/AIDS epidemic that has affected a great number of young and middle-aged people makes activities in the health sector an urgent necessity. Many people cannot afford to pay for the conventional health services. The eco-cultural villages actively function as a health clinic and traditional pharmacy for the majority of the communities in the area; patients receive treatment based on plant medicine and payments can take the form of field work or the gift of a chicken or goat.

Another major objective of the eco-cultural centres is cultural promotion. A wide array of activities are take place at the centres. These are decided by the committee of traditional leaders, spirit mediums and representatives of youth, women and farmers groups. In the centre communities can also organise specific meetings to discuss specific problems. A community with a problem like, for example, an increased incidence of rape, can discuss the situation and analyse how it can be improved. This process is guided by

a spirit medium.

In the eco-cultural centres many communal activities and festivities are taking place, including music, songs, folk tales, the use of traditional instruments, as well as an analysis of specific proverbs. In several centres small libraries are also being installed in which information from students, who have done research on local indigenous knowledge systems, is systematised.

Educational tourism

A recently developed concept is the promotion of tourism to the eco-cultural centres. On the one hand national and international researchers come to carry out research on the cultures of people. The Zimuto eco-cultural village is regarded today as a centre of excellence of African indigenous knowledge systems, culture and cosmovision. Groups of tourists also come to visit the centres to experience African culture. To encourage this a relationship was established with a tourism organisation in the Netherlands, who send small groups of 18-20 tourists to stay for one week. They are received and guided by the community and the traditional leaders, and have to abide by the traditional rules set by the spirit mediums. They also contribute ideas, that are selected and fused with local knowledge and experience. Some tourists offer managerial and administrative skills and sometimes these have been adopted in the cultural village.

Basis of methodology

The eco-cultural centres have been the basis of the AZTREC methodology in the Zimuto area. Over time the centres have helped to reduce the problems amongst youth in the area, because jobs were created. Forest and agricultural products, like honey, vegetables and sunflowers, are

brought to the centres for processing and commercialisation. The tourism activities are another source of income generation for both local groups of dancers and musicians, and the youngsters who work as tourist guides. As a result migration to the towns has been considerably reduced.

In spite of former problems with the government, AZTREC is now officially recognised and backed both at the national and international level. As a non-political organisation, AZTREC has not

Results achieved by AZTREC

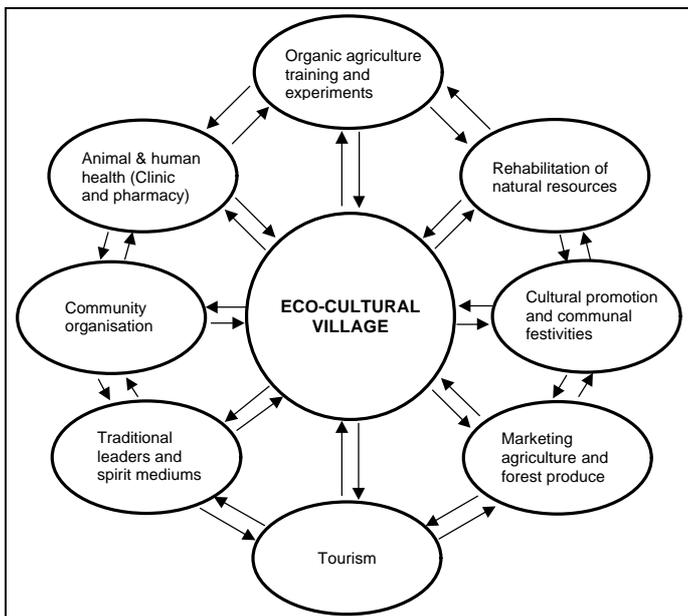
- 12 Regional tree nurseries
- 500,000 Seedlings planted in 280 communities over 16 years
- Traditional practices on natural resources and organic farming documented
- 12 Eco-cultural villages established
- 40 Farmer innovators involved in organic farming
- Experiments on vegetables and organic dry land farming
- Clinic and pharmacy for traditional health practices in humans and animals
- Reduced migration to cities due to increased income-generating activities
- Improved nutritional status due to vegetable growing and organic farming
- Community organisation and the role of traditional and spiritual leaders strengthened
- Eco-tourism activities generate work and income
- ENIAKA PanAfrican meeting in Zimbabwe, December 1999

taken sides in the recent political unrest in which land-hungry Zimbabweans forcibly took back the land that had been confiscated by white settlers during the colonial era. AZTREC was appointed by the government Community Based Resettlement Approaches and Technologies programme, however, to assist in land resettlement activities. More than 50 farms have been designated, and AZTREC is involved in structuring resettlement schemes in conjunction with the Ministries of Agriculture and Local Government.

No more borrowed concepts

AZTREC has a strong network with other like-minded non-governmental organisations. Churches strongly oppose AZTREC's work, however. They shun initiatives that consider the traditional leaders and spirit mediums as the authentic custodians of the natural resources. Church leaders consider that the approach taken by AZTREC is not holy, and contradicts with the bible philosophy. Communities in Zimbabwe and other African countries have reacted positively, however, to the work of AZTREC. Some organisations in Zambia, Malawi, South Africa and Swaziland have started to establish similar eco-cultural villages to address environmental problems, based on their own cultures and indigenous knowledge systems.

The methodology described here is based on a very sustainable form of agriculture and natural resource management, in which indigenous knowledge and external concepts are combined. We are convinced of the importance of this strategy. You cannot develop based on borrowed concepts - you need cross-fertilisation.



The linkages between Zimuto eco-cultural village and the community activities

Enhancing Indigenous Agricultural Knowledge in Africa - the ENIAKA initiative

The African organisations involved in Compas, CECIK and AZTREC, have several years of experience with endogenous development based on African culture. The partners agreed that in large parts of the African continent the picture of is quite consistent: despite decades of development activities, food shortage and poverty are still widespread and in some cases have even increased. The majority of the rural people are still loyal their own knowledge, belief and value systems. Though often hidden from the eyes of outsiders, the decisions on farming, health care and use of natural resources are, to a large extent, based on traditions, and traditional leaders play an important role.

For decades schools, extension services, development programmes and churches have attempted to introduce new concepts that would be a substitute rather than build on these traditions. This development approach has often ridiculed and rejected traditional values, and development workers seem to have acquired modern attitudes. The rural people have developed skills to speak the language of the officials, while maintaining their traditions. Most development professionals live in a dual reality: the African and the Modern.

In order to enhance the effectiveness of development interventions, the African Compas partners have emphasised the need to bridge the communication gap between the rural people and development workers. They have decided to up-

scale the Compas initiative in Africa in order to introduce the approach to other countries and to influence agencies into taking indigenous knowledge and values serious. This was the start of the project called Enhancing Agricultural Indigenous Knowledge in Africa, ENIAKA.

Where is the information?

During the initial phase of this project country studies were carried out in Ghana and Zimbabwe. Small teams of local researchers reviewed and analysed the existing information on indigenous knowledge. In both countries less than 100 documents could be found on indigenous knowledge and practices related to soil and water management, crops, animal husbandry and food processing. Meanwhile, during a national workshop development experts were able to identify more than 50 practices of rural people about which no written information is locally available.

At the same a literature search on the same subject was carried out in the major English language databases in Europe. The result was 1663 titles, most of them quite recent. These studies are only available in Western based databases; African national-based development workers have very limited access to these resources. During national workshops in Ghana and Zimbabwe plans were made to fill these gaps. Teams were formed to visit farm families and to document existing indigenous knowledge and practices. The implementation of these plans, however, was delayed by an initial lack of funding.

A pan-African initiative

In December 1999 a pan-African meeting, with representatives of 12 African countries, was organised in Mazvingo, Zimbabwe. It was decided to form three regional clusters for the further enhancement of the initiative: East Africa, Southern Africa and West Africa. For each region a regional coordinator was appointed. Plans were made for national and regional follow-up activities.

In May 2000 a national workshop was organised in Uganda. On the basis of a checklist some 20 NGOs carried out case studies on indigenous knowledge. During the workshop they discussed the outcome and the implications of this for development strategy.

They reached the general conclusion that endogenous development has great potential. It is necessary to address a number of national policy issues, however. Proposals for country workshops in Kenya and Tanzania have also been made. At the moment, however, lack of funding has inhibited these workshops and other follow-up activities in Uganda.

Proposal for five years

A five year plan has been formulated for the Southern Africa region. The activities include in-depth research on the agricultural and environmental knowledge of the rural people, improvement of capacities of NGO staff, establishment of a network for the exchange of information on indigenous knowledge, interregional and international exchange between farmers and rural leaders, and efforts to address national policies on technology development and the role of traditional institutions. Raising funds is the next step in the initiative for the Enhancement of Indigenous Agricultural Knowledge in Africa. AZTREC in Zimbabwe is co-ordinating the ENIAKA activities for Southern Africa, CECIK in Ghana for West Africa and CIOF in Uganda for East Africa.



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Photo: AZTREC

Traditional beer at rain making ceremonies in Zimuto, Zimbabwe

The Yunnan Initiative strengthens cultures and biodiversity

While there is growing evidence of deteriorating biodiversity and a decrease in cultural diversity, there is also an increasing number of people engaged in developing alternatives. These include local and indigenous peoples, grassroots organisations, NGO workers, activists, scientists, and policy makers, who all aim to strengthen local cultures and enhance biodiversity. The recent Congress on Cultures and Biodiversity, held in July 2000 in Yunnan, China, resulted in the Yunnan Initiative, an important synthesis of principles and strategic actions.

The Yunnan Initiative calls attention to the uncertainties that local and indigenous peoples face in their quest to use, nurture and sustain the ecosystems in which they live and on which they depend. The congress was an excellent opportunity to bring together representatives of local communities, researchers, policy makers and other stakeholders to exchange ideas and experiences about the conservation of biological resources and cultural diversity in China and other parts of the world. Approaches were developed which, if adopted, would make it possible for government and non-government organisations to act in ways that would strengthen the ability of local communities to govern their natural resources and secure their livelihoods.

The congress was organised by the Centre for Biodiversity and Indigenous Knowledge (CBIK), the Kunming Institute of Botany, and the Yunnan provincial government. Financial support came from the Ford Foundation (Beijing), with supplementary grants from other institutions, including the Yunnan provincial government, GTZ, WWF, the Nature Conservancy, and Compas. In total 200 people participated, 80 from China and 120 from 27 countries

in Asia, Australia, North America, South America, Africa and Europe. Compas representatives from Agruco (Bolivia), AZ-TREC (Zimbabwe), IDEA (India), ECO (Sri Lanka) and the Netherlands also took part and prepared a workshop to share their experiences.

Culture and biodiversity

The outcome of the Congress, the Yunnan Initiative, provides a vision, principles and actions to enhance the ability of local groups to strengthen their culture while finding innovative ways to improve their livelihood and enhance biodiversity. It concluded that, though some local groups may be more resilient than others, the activities of many of them can be strengthened if they are assisted in their partnerships with the government, non-governmental organisations, and the commercial sector. These partnerships must be based on participatory processes and intercultural dialogue, and aim for an interaction between local knowledge and aspects of Western knowledge, and an equitable and sustainable stream of benefits.

The Yunnan Initiative supports earlier declarations about the importance of local

communities in conserving biodiversity, like the Code of Ethics of the International Society of Ethnobiology and the Convention on Biological Diversity (1992). This convention has also stressed the necessity of respecting cultural and spiritual values in making efforts to achieve the sustainable development of local communities and the ecosystems on which they depend.

Working group recommendations

The final document on the Yunnan Initiative includes sections on general principles and actions, as well as plans for regional actions as agreed upon by the participating organisations. Specific recommendations were developed by eight working groups on the following topics: nature reserves and local communities; cosmology; agro-biodiversity; community-based resource management; globalisation, markets and biodiversity; eco-cultural tourism; intercultural dialogue and participation; indigenous resource rights; and traditional architecture. Here we will give a short overview of the recommendations developed on each of these topics.

Nature reserves and local communities

Development of protected area systems areas regulated and managed to achieve specific conservation objectives is a challenge currently faced by all countries of the world. Integrated and comprehensive plans are needed and this planning process should be part of a regional strategy to develop a green, sustainable economy. The working group recommended that this process should be open to all stakeholders, especially local communities. Such protected areas should be managed in respectful ways taking the cultural values and needs of local peoples into consideration, while protecting the natural resources.

Traditional values embedded in cultural practices, such as sacred sites, often provide conservation strategies for the management of natural resources. These local practices contribute to biodiversity conservation and must therefore be better understood and respected. Successful strategies also depend on the degree of



Photo: COMPAS

Participants of the Congress on Cultures and Biodiversity during a field trip in Xishuangbanna, enjoying a local meal with a great diversity of rice varieties and local vegetables

women's participation, conflict management in the communities, and traditional knowledge transfer between generations.

Cosmovision

Development proposals are frequently in conflict with community values, practices and belief systems. Research and development initiatives should respect prevailing indigenous knowledge systems and respond to the needs and future visions identified by local communities. To achieve this, a dialogue between community members and outsiders should be created and information exchanged on important. Development agencies should be sensitised to the interaction between local cosmovisions, agricultural practices and biodiversity. Spiritual leaders should be given the opportunity to meet, and their roles should be enhanced. Local spiritual leaders, community members and scientists should engage in collaborative action research. Moreover, women's access to benefits and participation in decision-making should be promoted.

Agro-biodiversity

Farmers in traditional farming communities use and maintain very diverse genetic resources, which are often closely related to their culture. Actions to preserve agro-biodiversity are recommended, such as promoting the balance between marketed and subsistence crops; enhancing farmers access to critical information on policies that affect their culture and biodiversity; strengthening farmers and their institutions in agro-biodiversity management; and creating awareness about the interaction between traditional local foods and rare crop varieties.

Community-based resource management

Everywhere, communities have learnt how to manage their resources in their own local context. This learning can be strengthened with good facilitation. Meanwhile, there are significant differences between the interests and understanding of different stakeholders regarding natural resource management. The perceptions within communities are neither homogeneous nor static, and conflicts within communities as well as between communities and outside agents are all too common. Actions recommended include: facilitating communities to develop indigenous indicators of environment and resource change; to support the establishment of local resource management associations to improve control over natural resources; and to use modern media to ensure access to information about available resources, commodity prices and changes in environmental laws.

Globalisation, markets and biodiversity

Global and regional markets have both positive and negative impact on biodiversity and local cultures. Issues that should

be considered include ensuring that local communities share in the benefits of their own products and knowledge; improving access to markets and shorten trade links; promoting sustainable harvesting to counter over-collection of forest products; creating green markets and informing consumers about issues related to local cultures and biological resources. Local sustainable production systems must be connected to the growing green products market. In order to achieve a green economy, research centres should focus on developing technologies, market institutions and policy mechanisms to optimise the use of ecological and cultural resources.

Eco-cultural tourism

The planning of tourism activities should actively involve all stakeholders - governments, tour-operators, NGOs and local communities - to improve mutual understanding, cooperation and intercultural dialogue. Eco-tourism should be community-based and the communities should share in the benefits. Therefore, the tourism master plans should reflect the positive and negative impact of tourism. Certification programmes should include the hiring and training of local people, as well as environmental and cultural sensitivity; tour-operators should make direct contributions to biodiversity conservation and cultural protection. Local NGOs can assist by educating local communities about the impact and possibilities of developing tourism services. This can lead to creating guidelines that can stimulate culturally and environmentally appropriate activities for tourists.

Intercultural dialogue and participation

Indigenous knowledge and innovation in natural resource management are closely related to spiritual concepts and practices. Understanding this indigenous cosmovision can only be achieved by engaging in intercultural dialogue, which includes encounters between groups from different backgrounds. Support programmes for cultural self-education and intercultural dialogue should be established. Indigenous communities should strengthen their capacity to test and adapt external knowledge in ways that complements local knowledge and practices.

Indigenous resource rights

Indigenous resource rights refer to the right of indigenous peoples to maintain control over their cultural institutions, territories, language and knowledge systems. This control should be enhanced, and mechanisms established for adequate benefit sharing of the wider application of indigenous knowledge and practices. This includes, in connection with the recommendations from the World Trade Organi-



Photo: COMPAS

Local markets are important trading places of local varieties and products, Valle Alto, Bolivia

sation and the Convention of Biological Diversity, the establishment of a time-frame for the creation of a system that regulates all aspects of the indigenous intellectual property rights. Until this has been established, the access to indigenous knowledge systems should be limited.

Meanwhile, networks and partnerships between local peoples, government, NGOs and universities should be established or strengthened. Priorities for research and documentation include: assessment of changes in indigenous knowledge and practices; development of criteria for monitoring and evaluating social and environmental change; policies, legislation and ethical guidelines to ensure the protection of traditional resource rights.

Traditional architecture

Traditional architecture is the cultural and technological heritage of ancient construction techniques, which make use of renewable and ecologically friendly resources such as clay, timber and bamboo. The buildings constructed with these materials and techniques bear witness to a living and contemporary heritage. Academic, social and political action is needed to raise awareness about this heritage. An endogenous conservation-development approach is needed to ensure the continuity of using these techniques.

For further information:

Go to <http://cbik.org> or read the proceedings of the congress:

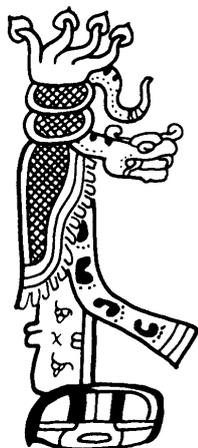
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The Qeqchi Cross

Cosmovision as a basis for development

Inge Hatse, Patrick De Ceuster, Manuel Paau,
Ricardo Chamam, Leonzo Chub, Juan Choc,
Francisco Paau, Alberto Choc, Estela Leal, Carlos Caal*



Supporting the revival of the Qeqchi Cross has proved to be a meaningful methodology to enhance endogenous development.

For the Qeqchi a Maya ethnic in Guatemala, the cross is not just a symbol of the Christian religion, but also a fundamental element in their worldview. It has significance at the agrarian, ecological, social, and spiritual level.



The Qeqchi are one of the 22 different Maya people and are the largest population group in the forested areas of north-eastern Guatemala. Traditionally, they live in small, often isolated rural communities. Their sense of community and mutual help is very strong. As a rule, Qeqchi farming is an intensive diversified subsistence activity in which corn plays a major role. This small scale, non-mechanised agriculture is adapted to the needs of man and nature. It is characterised by a great respect for the earth and this is demonstrated by spiritual and ritual activities that centre on the *Tzuultaqa*, or the sacred hill-valley.

Nowadays both the character of traditional agriculture and social relations within the communities are changing. Agricultural diversity and communality are in decline. There is a strong relationship between this process and the effects of 36 years of civil war. Another factor has been the conflict with the modern forms of production and the economic principles of competition and economic efficiency they embody.

ADICI-Wakliiqo is the Association for the Integrated Development of Indigenous Communities, located in Coban, Guatemala. This Compas partner works with 25 communities with the aim of strengthening community organisation based on the Qeqchi cultural identity. ADICI works with the communities focussing on land rights, agro-ecology, health, gender, community organisation, culture and spirituality.

The milpa

In the Qeqchi worldview, the *milpa* is much more than just the plot where corn is grown; it can contain up to 40 different crops besides corn. The Qeqchi people have a strong sense of identification with their *milpa*. In agrarian activities, such as

burning, sowing, weeding, and harvesting, the people express their cosmivision in rituals that emphasise their relationship with the *milpa* and the sacred hill-valley.

For the Qeqchi the cross is a way of visualising the sacred hill-valley. The cross is not only the symbol of the Christian religion; in the Qeqchi cosmivision it symbolises the first tree, the origin of all creation and is also the symbol of fertility. In the words of Mr. Manuel Paau, a Qeqchi spiritual leader and staff member of ADICI: *The holy cross shows me the way. It is the place where our Lord Jesus Christ died, and it also shows us the heart of the sacred green tree. Its colour is green, the signal that it is alive. The cross shows us the love we must have for the sacred forest.*

After the invasion of the Spanish, it was therefore not difficult for the Maya people to integrate and comprehend the Christian symbol of the cross within their own religion. The visual expression of this assimilation is present in the numerous crosses in the chapels of Catholic churches and along the road sides. Many of these crosses maintain the symbols of Maya cosmivision, like the colour green, the leaves, and the chair the piece of wood on which the cross sits - that symbolizes the physical body of the hill, the roots and the earth.

The cross and agriculture

For the Qeqchi people the cross represents God, but at the same time it stands for the sacred hill and valley. The Qeqchi may bring food and ritual offerings to the cross, asking permission to clean the *milpa*, to burn, to sow, and to harvest. The farmer may ask for rain or sun, for the blessing or healing of his animals, and pray for the health and vitality of his family. As Mr. Francisco Paau said: *The Lord Cross is very great. His origin dates back many,*

many years. It is our life. When we sow and weed the milpa, in front of the Lord Cross we ask forgiveness from all of God's creatures, as well as from the sacred hill-valley.

Before cultivating the *milpa* the Qeqchi farmers place a symbolic cross made of sticks in the centre of the field, with the following prayer:

O Lord Cross, here I place you, here I sow you to be permitted to clear the field. Do not make me encounter anything, do not let anything appear to me, no snake, no rock, no thorns nor wounds Do not let me get any cuts, do not let me get any bruises...

The process of revival

Analysing the importance of the cross for the Qeqchi, ADICI-Wakliiqo encouraged a process of revival within a programme called revitalisation and strengthening of traditional Qeqchi agriculture. With the support of the local church, the regional indigenous organisation of traditional leaders - the Council of 13 elders - was revived. Each sub-region of 15 to 50 communities has a council guided by the first elder. In some regions, there are two first elders.

No large crosses have been built in the Qeqchi region for at least two generations. The chapels and crosses, symbols of indigenous social unity and identity, were the targets of repression during in the 1980s. The traditional crosses have become scarce, while the elders have forgotten some of the prayers and secrets necessary to build them. A series of meetings was started with a group of elders and young people from different communities. The objective was to motivate and to bring together the knowledge relating to the construction of the traditional cross.

The meetings were carried out at

night. The sessions began with a *tz aamaank*, a request to God and the hill-valley, offering candles and incense because of the sacred subject matter and its relation to nature, the ancestors and the production of corn. To stimulate work on the symbolic function of the cross, old Mayan drawings, photographs of Q eqchi crosses, and experiences from every day life were analysed. In spite of pressure from some young people who wanted to see quick results, the group opted not to rush the work and to follow the traditional rules.

A single tree

In a mountain forest, at one-hour walking distance from one of the communities, 39 crosses were built from a single mahogany tree. The crosses were to be placed on chapels, sacred sites in the hills, and in the houses of those elders who were taking part. The elders carried out all the work themselves with help from a foreign painter. During this work, Mr. Alberto Choc explained: *With the help of God we are making progress in our work. We began about six months ago. Today too we have come here to the forest to build the crosses. We are gathered here and working, not just for ourselves but for future generations as well.*

The whole construction process included several spiritual and ritual practices, such as *k'ajb'ak*, a ritual fast lasting

40 days, before and after cutting of the tree. During this period the Q eqchi who build the cross vow to live in harmony with their surroundings. This means not getting angry, hitting children, killing animals, eating meat, and abstaining from sex. Other rituals include feeding the tree and all the instruments they use in their work, as well as tying up the spirit of the tree so it will not escape and prevent the wood from splintering.

On the 2 and 3 May 2000, the day of the holy cross, the crosses were brought down from the mountain, and blessed in the community. On the night of the 1 May the celebration was prepared. Visitors and other interested people came from many communities in the region. Some elders guided about 50 unmarried young people to the place in the forest where the crosses were made, to carry them to the community. Halfway there they were met by six elderly women. On the second night of the festivities, food was shared and a catholic catechist came to read the Bible. The next day the representatives of other communities took their crosses with them because of their importance for the coming *milpa* crop activities. Once they were in place, the crosses were greeted with another celebration.

Some difficulties

During the process some difficulties were encountered. For example, it was not easy

to find an appropriate tree and a community that was willing to cut it down for this purpose. In the actual context, most of the population consider this high quality wood mainly as a source of income.

Later, the elders decided to cut the tree down with an axe and to cut all the wood in the traditional way with a hand saw. At the critical moment, however, the person in charge of sawing the wood did not show up. After a moment of analysis, the elders found another solution. A non-traditional element, an electric chainsaw, was introduced and the work continued without further ado. Though it was not the most appropriate thing to do, since the noise of the motor might frighten the tree's spirit away, the elders considered that the tree's spirit was well tied up. The chainsaw was ritually fed to prepare it for its sacred work. This experience shows that both traditional instruments as well as elements of modern technology can be used in ritual functions, as long as they are given due respect and used conscientiously. The chainsaw was prepared the same way as the other instruments for a well-defined ritual job.

Another problem we came across was the reserved attitude of the local Catholic priest. In spite of many invitations and visits, the priest abstained from participating in and celebrating mass during the festivities to consecrate the crosses. He felt that the crosses symbolised a devia-



Photo:ADCI

The ritual tying up the spirit of the tree performed by the elders on the mahogany tree that will be used for the construction of the Q eqchi Crosses



The elders constructing the crosses in the forest

tion from the Catholic faith. In fact, for the Q eqchi , the crosses were an expression of the integration and harmony between the elements of their own cosmovision, which include Catholic beliefs. Even though the people were disappointed by the parish's narrow-minded attitude, they continued their activities. In fact, they became even more motivated to present the crosses on their own terms. When the priests saw the firm position taken by the elders and some catechists, they realised the importance of the crosses and proceeded to bless them in each community.

Symbol of unification

The cross has a very important role in unification. The revival of this traditional practice implied considerable progress for the communities, especially in social, cultural, agrarian and ecological terms. We saw the good results of the work reflected in the positive relationship between young people and elders, between women and men, between different communities, between traditional religion and Catholicism, and between man and the sacred hill and valley.

Don Carlos Caal, catechist, motivated the community during the celebration with the following words: *We were all told -the youngsters, the elders- to work together. Everybody has his or her own task. It is not possible for the young person to do the work of an elderly man or woman. Sometimes we do not assume our responsibility. Why? Because there is hardly any community where this kind of work is done. It is urgent that we understand the responsibility all of us have: the elders, the young and the choir in the Catholic mass. Let everybody participate.*

The work was also a good exercise at the organisational level. The celebration to receive the crosses was not directed by a single person. Everyone decided to organise it together which required much

more co-ordination and solidarity among the members of the community. Other communities also participated, an unusual event considering that recent conflicts had generated mistrust and resentment and had disarticulated the social structure of these communities. As an example of this new-found solidarity, one of the crosses was made especially to be used during visits to other communities.

The effect of this work was also reflected in the revival of the role of the elders, both men and women. Traditionally, elders are the leaders who provide orientation and counsel the communities. The elders know the sacred hills and communicate with them, preside over the rites, know the medicinal plants and animals, and sometimes act as a healer or midwife. Due to the military conflict, however, many elders have died and the

rituals in the mountains were forbidden. As a result the transmission of knowledge to new generations was blocked. Moreover, the influence of modernity and the power bestowed upon young people as catechists, further affected the elders position in the communities.

The work done with the cross has contributed to increased self-esteem and confidence of the older men and women and the community leaders. It has also stimulated the rituals related to agriculture in the communities. During the celebration of receiving the crosses, the elders spoke to the community to raise consciousness on many subjects, such as their identity, the unity of the community and respect for the sacred hill-valley.

The role of women

In the traditional Q eqchi society, the distribution of labour between men and women is characterised by a quest for balance. Men and women have specific tasks that are mutually complementary. Many important tasks - inside the house, in agriculture or during ceremonies- are carried out by two people, man and wife. This situation has changed considerably, however, and nowadays male dominance and consumerism are important features. Therefore the participation of women in community activities is no longer as pronounced as before, and their specific tasks do not receive due credit.

The work with the cross has been very motivating, as women from different communities organised themselves to prepare food for the crosses and the visitors. Together they went to greet the crosses on the road halfway down to the community, to bind them with incense. As the tree used to make the crosses was masculine, they had to be greeted by women in order



The newly constructed Crosses were painted with symbols that the Q eqchi population associates with the Cross: Jesus, Guadalupe, snake, flowers, sun, moon, maize and birds



Photo: ADICI

The women of the community went to greet the Crosses with incense and candles

to ensure harmony.

Mrs. Estela Leal was proud and satisfied after the celebration: *We prepared ourselves to greet the holy cross. We carried incense and candles to greet the Cross and to bind it by walking around it three times. We were very happy to greet the crosses together with women from the other communities.*

Respecting the environment

In the communities that participated the people regained an instrument to express their faith and to ask for protection and fertility for their animals and milpa. It also gave them an opportunity to tell stories about creation, the Lord Father and Holy Mother, the sacred hill-valley, the wood and its spirits, and the clearing of

the milpa fields.

The building of the crosses implied the revival of many secrets as well as the knowledge related to the traditional ecological views. Many spiritual and ritual practices related to the cross are an expression of the respect the people feel towards the forest and the sacred hill-valley. The cross shed light on the importance of the forest as a source of rain, soil and fertility. Projects aiming at the sustainable management of the environment can build on this vision. The image of the cross can form a basis for working with Mayan communities.

Young and old together

Methodologically speaking, the work with the crosses was an experiment for both ADICI and the communities. In the recent history of Guatemala it is not logical to gather the people together to exchange their knowledge. There is a long history of courses and ideological lectures in which community members participate simply as receptors of information. Moreover, due to the recent military conflict, there is much mistrust and social imbalance in and between the communities. In this context it is not logical to encourage the elders to rescue their role in the community. For these activities ADICI built on the relationship of trust that was the result of many years of work and sharing with the communities. It was able to gather many elders together and identify the subjects that interested them.

In the process described here the elders were able to encourage many young people in the communities to participate

in the festivity of greeting the holy cross. Now the elders are seeking ways to maintain this space with the younger people. One possibility is the video that has documented the work and words of the elders and catechists working with the Q eqchi crosses in different communities. This does not only attract young people, but also encourages other communities that might have the same interest.

Other topics related to indigenous knowledge that might be of interest to young people are also being incorporated such as the Mayan calendar and an intercultural encounter with the Lacandones, an ethnic group in Chiapas, México. In this way the young and the old in the communities can continue to act together on their way to social integration and agricultural development after the long period of military, social and cultural repression.

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Results achieved by ADICI

- Improved relations between communities, between women and men, and between generations
- Traditional Q eqchi beliefs, myths and knowledge about agriculture and medicine documented
- Organisation and position of elders re-enforced
- Cultural identity re-enforced
- Mutual acceptance between traditional religion and Catholicism strengthened
- Young people now interested to revitalised Q eqchi culture
- Intercultural exchange with Lacandones in Chiapas, México
- Maya calendar on cosmovision and Q eqchi culture published



Vrkshayurveda experiments

Linking ancient texts and farmers practices

A.V. Balasubramanian, K. Vijayalakshmi, Subhashini Sridhar and S. Arumugasamy

The unique feature of traditional knowledge in India is that it is manifested in different ways. There are many living folk practices related to agriculture and health. Knowledge on these subjects can also be found in millions of ancient manuscripts. The traditional plant science is known as *Vrkshayurveda*. The Centre of Indian Knowledge Systems (CIKS) has worked for several years with ancient manuscripts relating to agriculture. They have come to the conclusion that strengthening the links between farming practices and ancient texts can revitalise present day agriculture.

In India there is a rich and diverse folk tradition that includes age-old agricultural practices, home health remedies, and advice about the dos and don'ts of everyday life. Folk health practitioners as well as traditional health specialists also take care of serious conditions, such as bone injury and poisoning. There are formal traditional medical practitioners of the Ayurveda, Unani and Siddha systems who receive their training and qualifications at special colleges. The influence of modernisation and changes in lifestyle, however, has resulted in a decline in traditional health and agricultural practices. Moreover many modern practitioners show indifference or negative attitudes towards traditional practices.

Meanwhile, India has one of the largest collections of ancient manuscripts in the world. While there has never been a precise count, estimates suggest there may be as many as 300 million texts. These old Indian scripts pay considerable attention to philosophy, religion, health care, agriculture, livestock, rains and harvests. They include hymns, prayers, *mantras* - specific symbolic figures - and ancient

prescriptions. The classical Indian health (*Ayurveda*) and plant (*Vrkshayurveda*) science is highly advanced. Scripts are written in many languages including Sanskrit, Tamil and Telugu.

Ayurveda as a science

In India, the validation of knowledge and experience has been going on since ancient times: it is nothing new in our tradition. If we turn to the ancient texts of the *Nyaya Sastra*, the rules for what constitutes valid knowledge are laid out quite clearly. *Nyaya Sastra* says there are three sources of valid knowledge. The first is based on direct observation and experience. The second source is the accumulated wisdom found in texts. The third source of valid knowledge is drawing valid conclusions from observations and experience.

The science of Ayurveda is based on the above concepts, applied in the context of maintaining health. It is based on rational principles, and is sceptical of any knowledge that has not been acquired according to these scientific rules. Using this method Ayurveda has put together an

enormous body of data and developed methodologies and categories that are equally valid for the past, the present and the future.

Literature on Vrkshayurveda

Three types of Vrkshayurveda literature can be distinguished. The first category consists of general texts with only specific sections devoted to traditional plant science. The second category involves more general texts and here Vrkshayurveda is an essential part of the content. These texts are important since they provide the basic theoretical framework that allows us to understand the Vrkshayurveda literature. Thirdly, there are those manuscripts that are devoted entirely to plant science. These are of great interest and direct relevance to our work.

The subject matter of Vrkshayurveda is vast, detailed and varied. It includes subjects such as the collection and selection of seeds, germination, cultivation, sowing, planting, nursery techniques, soil, manuring, cultivation under favourable meteorological conditions, pest and disease management, as well as the traditional names

and description of plants. Some of the prescriptions of Vrکشayurveda are of a general nature; other prescriptions define a particular species precisely. Quite often the prescriptions list a set of ingredients without specifying the proportions to be used.

How it began

The Centre for Indian Knowledge Systems (CIKS) is a non-governmental research and development centre. Our interest in Vrکشayurveda dates back to the 1980s when A.V. Balasubramanian was involved in a movement known as Patriotic and People Oriented Science and Technology. The objective of this movement was to explore various aspects of traditional Indian science and technology. This was done against the backdrop of the Green Revolution, which introduced radical changes into Indian agriculture and which, despite its short-term effectiveness, also created certain imbalances.

Since 1986, CIKS has been studying agriculture by looking at traditional agrarian knowledge as this is reflected in proverbs and folk sayings. We have compared this knowledge with some classical agricultural texts. We soon found that, while there are many specialised and active practitioners of traditional medicine, similar scholars in the area of traditional agriculture were difficult to find.

From 1990 onwards we started collecting literature and material on Vrکشayurveda and decided that we wanted to test the practices described in these texts. At first we did not give this high priority. This situation changed in the early nineties when we started growing crops on our own land. In 1997 a new phase began when we started our experiments on paddy, the main staple crop in the area.

Starting actions

At our centre, we want to understand farmers' practices in the context of classical Indian plant science and its agricultural cosmology. Our activity is prompted by the concern that, in general, rural peoples' activities are hardly ever analysed in their own context. They are often dissected using the tools of western science and technology. As a result, bits and pieces of traditional practices have been isolated and incorporated into the modern scheme of things. This process does not strengthen traditional practices, which are usually ignored until they have been declared valid by conventional Western science. We feel that it is important to understand these agricultural practices as more than a collection of technologies, and try to reach their theoretical foundations. Vrکشayurveda is important in this process.

We started by scanning texts and literature in Sanskrit, and went on to develop a strategy for selecting those descriptions that seemed to offer the most promise to test in the field. We started the experiments in 1994 with various recipes and prescriptions of Vrکشayurveda in our garden and in our neighbour's field.

Testing ancient recipes

Broadly speaking, we can classify our experiments into 5 categories. First, experiments in the CIKS office premises and garden; second, experiments in response to specific request for help; third, experiments carried out by schools and college students; fourth, experiments carried out by those who have read CIKS books on the subject, and finally experiments with paddy on the CIKS farm and in farmers' fields. These experiments greatly varied in terms of the problem concerned, prescriptions and rigor, and were carried out over seven years.

The initial experiments in the CIKS office garden in 1993 and 1994 included the rejuvenation of mango trees and the healing of a broken trunk in a guava tree. These experiments gave us a feeling for how treatment along Vrکشayurveda lines could be practically applied.

Botany students at a local college conducted other experiments, testing the effects of soaking seeds in milk before sowing. This is suggested in Vrکشayurveda to stimulate germination and growth. In some cases this led to an excellent improvement in the rate of germination, in other cases the effect was moderate or minimal. We found that many questions on details were generated by the experiments. For example, when milk was prescribed, which animal's milk was required, how long should the seeds be soaked and how frequently should the milk be diluted or used?

During this period we also published some introductory monographs on Vrکشayurveda. These publications attracted considerable attention and encouraged others to try out the prescriptions and approaches of Vrکشayurveda or ask our help. In turn some of these requests provided interesting lessons for us.

A request for help

In 1994, the mango grove attached to the headquarters of the Theosophical Society suffered a major attack by the mango leaf webber. The Theosophical Society was reluctant to use chemicals and the garden superintendent approached us for help. We suggested removing the heavily affected parts of the trees, spraying the less affected parts with a mixture of neem oil and pongam oil in a soap solution, and then fumigating with a herbal mixture consisting of *Embelia ribes* and a herb known as Daruharidra. There was a dramatic reversal in the disease. The trees put forth new leaves and provided a very good harvest that year. This gave us considerable confidence, not only because our effort had succeeded, but also because we had been able to develop a detailed recipe along Vrکشayurveda lines.

Others started carrying out experiments after reading the CIKS materials. For example, Sri K.K. Somani experimented by applying Vrکشayurveda remedies to custard apple trees that had not yielded fruit for 15 years. The fruit would form and drop off just after starting to grow despite applications of fertilizers and full irrigation. After reading Vrکشayurveda, he applied about 1 litre of milk together with various pulses, ghee - clarified butter - and honey as prescribed in the ancient recipes. Altogether this



Cover of a publication of the Asian Agri-History Foundation (Andhra Pradesh, India, 1996): the original Sanskrit text and its English translation of Surapala's Vrکشayurveda, the classical science of plant life

Vrkshayurveda treatment costs less than Rs.50/-. Within three months, he had a record crop of custard apples with a particularly delicious taste. He concluded that the cost of these Vrkshayurveda treatments was not high, which make them a valuable option when trying to strengthen today's agricultural practices.

Experiments on paddy

After 1997, we started experimenting with rice to see what effect the Vrkshayurveda recipes had on improving germination, pest and disease resistance, and the effect of plant growth stimulators. The recipes available in the ancient texts were screened and selected on the bases of considerations such as the cost of ingredients, ease of preparation, possibility of replication, and the amount of effort involved in carrying out the treatment. The experiments were conducted on Kullakar, a traditional rice variety.

In the germination experiments, seeds were subjected to four different treatments: soaked in water for 24 hours; soaked in a mixture of cow's urine and powdered vacha (*Acorus calamus*) for 24 hours; soaked in milk for 24 hours, then rinsed with water and coated and rubbed with cowdung, then dried in the shade for 6 hours, smeared with honey, and fumigated with powdered vidanga (*Embelia ribes*); and soaked in cow dung mixed with water for 24 hours. The control seeds were given no treatment. The percentage of germination as well as plant height was measured after seven days.

Experiments were also conducted with

plant growth regulators. Here plants were transplanted into pots that contained a mixture of soil, farmyard manure and wood ash. Before transplanting, the plants were dipped into either a solution of cow's urine diluted with water or a modified *Panchagavya* solution - a mixture of cow's urine, milk, water and *ghee*. Forty-five days after transplantation a plant growth regulator was sprayed in all pots. This regulator consisted of goat flesh extract, black gram powder and sesame seeds.

Plant height and number of tillers were measured 7 days after spraying with the growth regulator. The weight of the grains obtained after harvest and the incidence of disease was also monitored. These experiments indicated that soaking the seeds in water seemed to be the best option when it comes to enhancing germination. The yield of paddy nearly doubled when the growth regulator was applied.

Some difficulties

These experiments on germination and the effect of growth regulator were also expected to have an impact on disease resistance. Unfortunately, during the first crop season when the experiments were performed in pots, all pots became heavily infested with the pest known as brown plant hopper. There was stagnant water and many weeds in a neighbouring garden near our pots; as a result our experiments were quickly swamped by the hoppers. We were able to control the infection by using wood ash, but in the process we lost the chance of observing the finer distinc-

tions between experimental and control plants in terms of their susceptibility to disease.

In drawing conclusions from our experiments we also encountered the problem that treatments involve several steps and components. Because of the way the recipes are described in the ancient texts, we did not know exactly how to apply the prescriptions, or at what level we should look for results. For example, when we soaked the paddy seeds in milk, they curdled it. Later, when we washed the germinated seeds and transplanted them, the level of germination was quite low. We felt that this might be because the tips of the germinating seeds were injured when we washed them to remove the curdled milk. However, an anthropologist who had observed similar practices in a tribal area suggested that the objective of this exercise may be to ensure that the most robust seeds were selected, those that can survive this washing. We had to admit that this was an interesting possibility, but to test this would be quite a laborious process.

We discussed the results of the experiments with a wide cross section of people and decided that in our next phase we would decrease the number of variables as well as the number of pots. We continued the experiments, both in farmers' fields and in our own fields, for two more crop seasons. During this period we could confirm positive results, especially with the use of plant growth regulators.



Photo: CIKS

Seedlings paddy are dipped in different solutions according to recipes of Vrkshayurveda



Assessing the results of the experiments in traditional rice varieties

Increased resistance

Subsequently, we carried out several other experiments. When paddy is soaked in diluted cow's urine before sowing, it considerably reduces the incidence of two diseases known as leaf spot and rice blast. For this experiment paddy seeds were allowed to germinate for two days by soaking them in a special cloth bag that was kept continually moist. The seeds were then soaked in cow's urine diluted with water. This was filtered off and the seeds were dried in the shade before being sown. We had to ensure that the concentration of cow's urine was not too high, because this can suppress paddy germination.

We also found that soaking paddy seeds in milk stimulated resistance to certain viruses, especially the tungro virus and stunt virus. For this experiment paddy seeds were again allowed to germinate in a moist bag for two days. They were then soaked in milk mixed with water and sown immediately. We observed that seeds subjected to this treatment showed resistance to both the tungro and the stunt virus, even when plants in neighbouring fields were affected.

Farmers and Vrکشayurveda

We have tried to include a number of farmers in our experiments with the use of plant growth regulators and transplanting solutions. There has not been extensive farmer participation either in our fields or in their own, however. We are particularly cautious before we recommend something to farmers - even at the level of small-scale experiments - because we want to avoid any problem or loss. We have learnt that the process of reconstructing practices from ancient texts requires many

initial trials, before experiments can be started with farmers. For example, in testing the effect of a plant growth regulator, we had to experiment for 18 months before it was possible to start the farmer participation stage.

Meanwhile, it is important to note that in several instances farmers' practice coincide with the prescriptions found in Vrکشayurveda. Perhaps the appropriate way to describe this phenomenon is to state that the texts on Vrکشayurveda are systematisations of the practices the farmers follow at field level, placed in a theoretical framework. For example, farmers use the leaves and latex produced by the plant *Calotropis gigantea* to control pests. While the ancient texts may mention this in general terms, farmers have a wide variety of practical ways of making use of this plant's insecticidal properties. Green leaves of *Calotropis* are put in a cloth bag and placed at the entrance of an irrigation channel. This is used to control the weeds and aphids. The leaves are also used to control termites. They are soaked in water for a day and after the liquid is filtered off it is poured on the termite-infested soil.

Important lessons

Our experience so far indicates that there are two major lines of work we can follow in the future. On the one hand, we need to continue controlled experiments to enhance the use of ancient texts for present day agriculture. The texts include many recipes for improving crop production that can be tested under farmers' conditions. There are many questions that need to be answered, such as how can experiments based on ancient techniques be designed and interpreted, which parameters should be used, how can we incorporate the hymns or symbolic figures mentioned in

the texts into our work? Studying the difference between the ancient and the modern texts in terms of theoretical concepts and research methods is another major component of this activity.

On the other hand, we need to look carefully at the living folk practices of farmers in order to understand and analyse them. The ancient Vrکشayurveda texts offer us many possibilities, especially in providing us a theoretical and practical basis for analysing and understanding farmers' practices. Strengthening these practices can go hand in hand with what we derive from the ancient Vrکشayurveda texts. We are convinced that combining the farmers' practices and the wisdom available in the ancient texts can revitalise present day agriculture.

Results achieved by CIKS

- CIKS works with 250 farmers, including 50 women farmers, in 15 villages
- Over 1500 farmers have benefited from training programmes
- Material inputs, like seeds, biofertilisers and pest control materials, provided to farmers
- Organic certification and marketing supported
- Traditional farming practices revived: 93 traditional paddy varieties and 24 varieties of 10 vegetables conserved and shared with farmers
- 30 Vrکشayurveda texts in Sanskrit screened and topics short-listed for experimentation
- Experiments based on recipes from ancient texts carried out with paddy and vegetables
- Various documents on Vrکشayurveda published
- Networking on national and international level



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Using the footpath analogy

David Millar

For the past three years CECIK has been working in Northern Ghana with an approach based on the Empathic Learning and Action (ELA) framework. This framework has been developed and tested to support development from a cosmivision perspective. The worldview of the communities plays a role in the way the people describe their own environment and the changes they would like to see. CECIK found that describing the footpath to the village is a good tool to design and evaluate agricultural experiments together with the farmers.

It is now widely accepted that in improving traditional farming technologies both the knowledge of the rural people and the knowledge of outsiders is important. The specific way of relating the two sources of knowledge requires a delicate process of formulating, comparing, merging, dialoguing and negotiating between rural communities and outside experts. Participatory technology development (PTD) consists of various phases: getting started, looking for things to try, designing the experiment, execution, sharing the experiences, and sustaining the process. In my experience the phase of farmers designing the experiment has been the most problematic. It is relatively easy if the researcher is in the driving seat, dictating the pace and direction of the experiments. This position is also reflected in other literature on farmers experimentation (Haverkort and Millar 1992, van Veldhuizen et al 1998).

Design in the office

In my ten years experience with participatory technology development, I have frequently resorted to executing various portions of the design phase in my office, or only with my field staff, far removed from the farmers environment and active influence. This is because I have been unable to get farmers to define important aspects, such as criteria for pursuing the investigative process, the indicators for choice-making, the critical stages for data collection, the replications, as well as the issue of sustainability.

My own work (Millar, 1996) in Northern Ghana, has demonstrated however, that farmers are researchers, and conduct their experiments based on their own research agenda and experimental models. In these research agendas all the protocols are catered for, or are included in the outcomes at different critical stages of their experimentation. My problem is therefore: how to access this model in such a way that we can include these pieces of information? What vocabulary should we use, how to establish an intellectual dialogue with the rural people, and what techniques are available to enable us to access and support this rich experience?

It is my view that when such issues are discussed prior to or during the experimental design, the outcome will be greatly enhanced. One needs to establish with the farmers what data to gather, how to gather it, when it should be gathered, and above all, to base the experiment on the farmers way of simultaneous data

gathering and analysis. The ELA framework is an attempt to establish farmer driven experimental designs (see figure).

The ELA framework

The Empathic Learning and Action framework is based on more than 20 years of

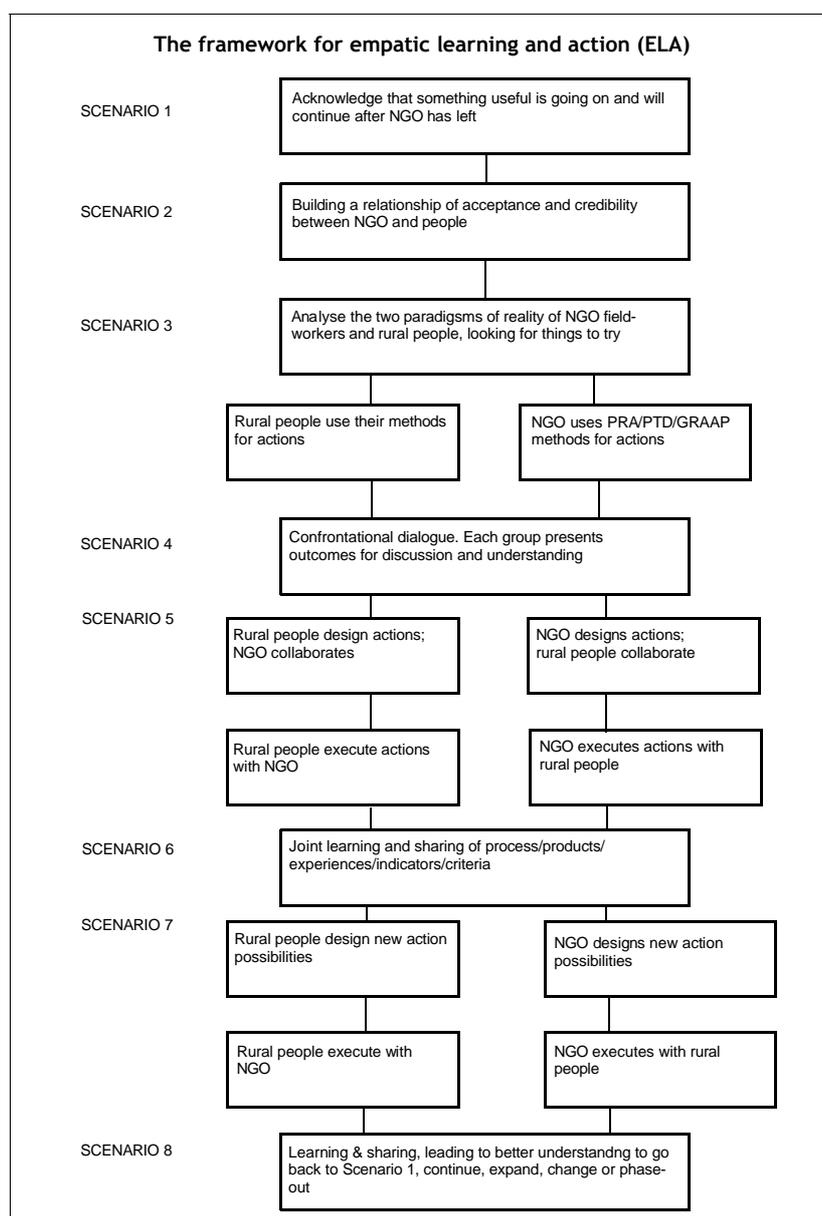




Photo: CECIK

Women have limited access to farm land and inputs, and can only grow certain crops

experience in agricultural development. It makes explicit and addresses two different perceptions of the reality: those of the rural people and those of outsiders who want to work with a rural community. In our case the outsider was an NGO - the Centre for Cosmovision and Indigenous Knowledge (CECIK). In addressing these two perceptions mutual learning processes can be designed and leading to an improvement of rural peoples knowledge and more appropriate interventions by outsiders.

Scenario 1 and 2

It is CECIK's experience that entering the village in the perspective of cosmovision influences the effect and outcome of the project activities to a large extent. My field work for Compas started early 1998 in the village of Bongo, in Northern Ghana, where the people belong to the Boosi tribe. In their culture, religious practices play an important role in farmers' experiments. During the first meeting in Bongo I introduced myself and tried to find out whether I was welcome. A *tendana* - the traditional earth priest and spiritual leader - as well as a soothsayer and an elder consulted their ancestral spirits and the Gods to find out what to do with me. While a *libation* - a sacrifice for the ancestral spirits - was performed, the *tendana* asked for the guidance of his ancestors. He also asked if both his ancestors and mine would clear the path and guide our actions. During our second meeting I was told that the response of the Gods and the ancestors had been positive. I was welcome to work with the community especially on farming matters.

Entering the community in this cos-

movision perspective was a new experience for me. As a former government extension worker I had learned that you need to ask permission from the village chief when entering a new village. Now I learned that entering a community implies much more than this. Before people will accept you, clearance from the ancestral spirits is sought. Only by accepting and respecting these rules can a relationship of confidence be built with a community.

Comments on commitments

In seeking clearance one of the issues of protocol that we had to deal with was the aspect of transparency in our commitments as far as our relationships were concerned. The elders decided to have a village meeting to discuss a programme of co-operation between us. During this inception workshop I wanted to be very honest about my intentions, my doubts and our commitments. On this occasion the elders had this to share with me:

It is true that we play games with you the Karachis (government workers). Every farmer is guilty of this. Just imagine the difficulty of paying back the loans. Parting with a substantial amount of the harvest that is to sustain you till the next one is not easy, and when we can avoid it we will do so. We are sure you would do the same if you were in our shoes. But let us tell you this. With Nyaba-itgo, our ancestors way of doing, it is not child's play; we cannot cheat you. We know of cases where people have cheated with the name of the ancestors and have lost all their crops. We assure you that the activities we are about to take will not suffer. We will support and share the plight of one another - provided it is in line with Nyaba-itgo.

Devil weed

The Bongo area is considered to be one of the most degraded regions of the upper East region of Ghana. Increasing land degradation goes hand in hand with high population pressure and limited access to lands. As a result very little land is left fallow for shifting cultivation, or for land rotation. With few other opportunities for earning a livelihood apart from farming, the whole area has become engulfed in a vicious circle of poverty. The wide spread invasion of striga (*Striga hermonthica*), or the devil weed as it is popularly known, which thrives best on poorer soils, is one sign of the poor soil conditions in the Bongo area.

Women in particular have limited access to land and farm inputs, while restrictive social attitudes towards women's independent participation in crop production are common. Crops

such as maize, sorghum, millet, yam, cassava and pigeon peas, are branded male crops. Though women venture into the production of these crops, the practice is an exception rather than a rule. Women mainly cultivate cash crops like legumes, groundnut and rice. This restriction denies the women the advantages of mixed cropping (Millar, 1992).

Looking for things to try

After our consultations with the ancestral spirits, the different groups in the community analysed which project activity they would like to work on. The CECIK field staff and the rural people analysed the situation of decreasing productivity together, its causes and effects, and actions that might be taken to mitigate the situation. We discussed experiences from other organisations on the same issues and compared these with the situation in Bongo. This discussion led to ideas about things that could be tried in order to increase food productivity and ultimately improve livelihoods.

The way the people classified the activities that emerged in this way reflected their social status: the elders took to rearing small livestock - poultry and goats; the youth choose to cultivate millet, sorghum, and rice combining this with fishing. The women opted for groundnut and soybean cultivation, and income generating crafts, particularly weaving. The community as a whole decided to start activities to reforest the shrines and groves in the area. The low soil fertility and devil weed were identified as general problems by all members of the community, irrespective of their social position. It was agreed that experiments would be carried out to overcome this problem.



Photo: CECIK

Elders discussing the footpath analogy

Footpath analysis

The experiments took place in the Gowrie-Kunkua community and involved 10 farmers. After the possibilities of the use of using organic matter to control striga was analysed with the farmers, I realised that they had lead the design of this experiment. For this I had to deal with my own inclination - described earlier - to put myself in the driving seat. My determination and conviction to act differently, based on the cosmovision perspective, led me to evolve the sor-le analysis. Sor-le in Dagaare, a northern Ghanaian language, means footpath or bush-path. The methodology was based on the analogy between the footpath and the experimental design.

Among rural communities in Northern Ghana the footpath is of great socio-cultural significance. It brings both strangers and locals into the community, and takes them out again. It brings evil and it brings good. To guide a stranger into their communities, people describe the entry path in careful detail, indicating every significant feature or landmark. I thought that by asking the farmers to describe the path from the town to their community, and then asking them to equate this with how they investigate a new idea, I might arrive at ways to make farmers lead the experimental design.

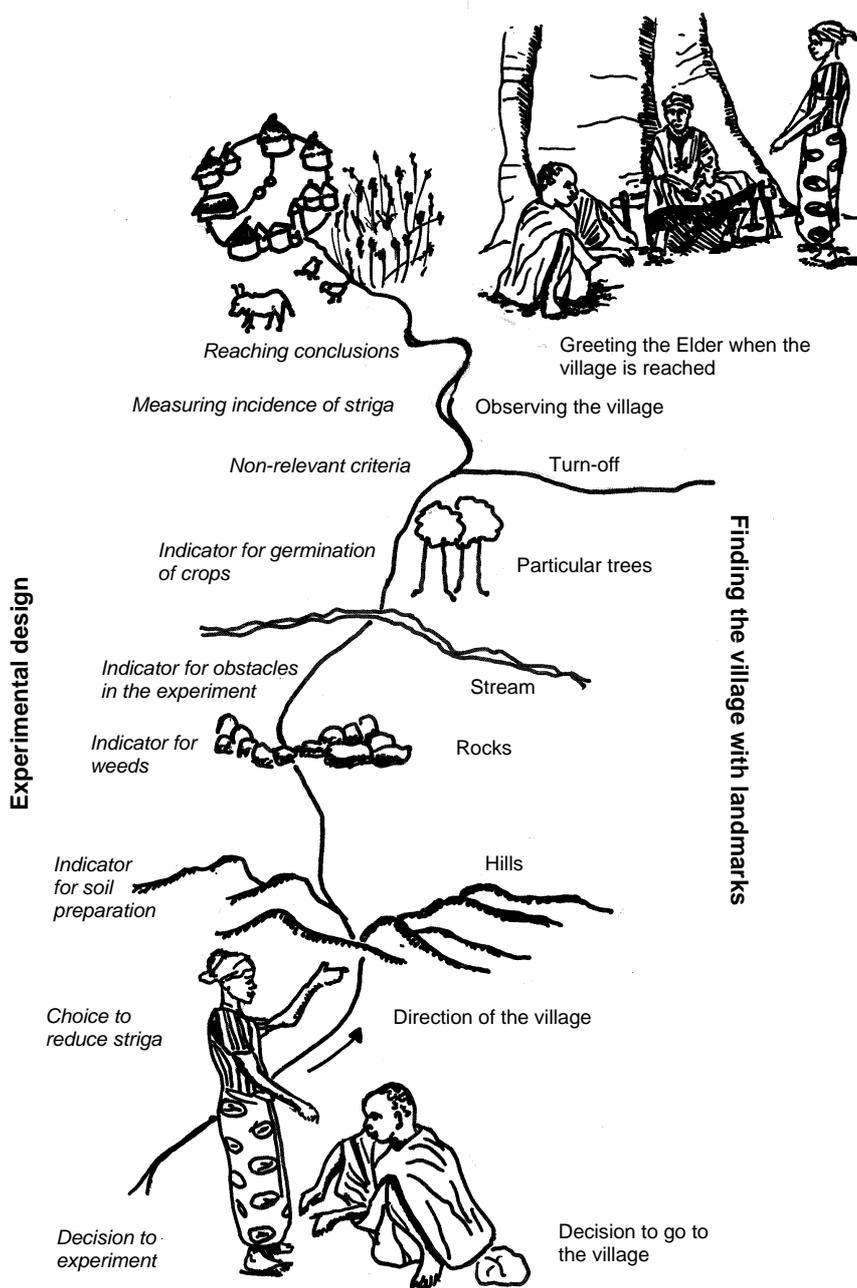
Diagramming sor-le

We formed two separate groups and I asked them if they would describe in detail - on the ground - how to get to their village from the town. They were charged with bringing out as many details of the landscape as they possibly could. Obstacles like streams, rocks, bushes, bends in the path, and trees were identified. Also easy parts like gentle slopes, clear areas, hard ground, and straight stretches of road were pointed out using objects on the ground. It was fascinating to witness the amount and intensity of the discussion that took place in the different groups.

The two designs were then brought together. The challenge now was to build them into one. It was interesting to note the similarities, differences, and complementarities. Discussions became increasingly intense, and there was plenty of fun and mockery when inaccuracies and omissions were discovered. I took this opportunity to facilitate relevant outcomes like starting point, ending point, the choices and the judgements that the stranger has to make, to be able to come to the village.

Designing the experiment

Using this exercise as an entry point, the different groups were now challenged to draft their research paths showing the equivalent critical features of the striga experiment, using their sor-le diagrams as a guide. It was easier, this time, for them to follow the same process with this



The analogy between farmers experimental design and the footpath to the village

new idea. I was suddenly exposed to a revelation of an intricate research path, and could make a preliminary enumeration of their investigation criteria, such as indicators for choice, critical stages for data collection, and some issues of sustainability.

The decision to go to the village was comparable to determining the experimental objective. In the striga experiment the objective was to rejuvenate the soil, put life back into the soil so that incidence of striga would be reduced and productivity would increase. The direction of the village was analogous to the direction to be taken in the strategy to reduce striga. After analysing various methods to combat striga, the farmers decided that they wanted to use mechanical means,

such as pulling, and chemical means, using phosphorous combined with organic matter. In this design the mechanical aspects were based on indigenous practices and the use of phosphorus was an external input.

Analogy of two pathways

In a similar way the analogy of the footpath and the experimental design was used to highlight other indicators. The perception of narrow or broad paths, and bare or grassy paths, were symbolic for the progress indicators; streams or other obstacles were comparable to the obstacles encountered in the experiment. Farms and livestock that appear when nearing human habitats were equated with the criteria used for judging whether the

desired outcome was being achieved.

There was an analogy between the distribution of crop fields, grazing lands and fallow, and the lay out of the experiment. The comparison made here was whether the experimental plot was located, for example, near the home or in the bush, on the hill or in the valley, or on an old farm plot or on a new one. Reaching or missing the village symbolises whether or not the experiment outcomes have been achieved.

The progress indicators

The community also used the footpath analogy to further identify progress indicators. Landmarks such as particular trees, rocks, and hills became analogies for indicators like soil preparation, germination of crops, weeds, and yields. The indicators related to the quality of the soil included: soil colour, the capacity to retain water, soil strength in terms of texture and structure, the types and amount of vegetation, and the ability of the soil to perform in future years. The farmers also defined the indicators to assess changes in the weed status: the striga population before and after the experiment and the time needed to weed the farm. The farmers' indicators to monitor crop development included: crop growth rate, structure of the crops - strong or weak, short or long, big or small - how soon the crop matured, what happened during the seasonal moisture stress period, the size and colour of the grain heads, and the fullness of seed.

The harvest was evaluated by the farmers in terms of harvesting time, quantity and quality of harvest, taste of the food, grinding quality, flour colour and smell, quality for making local dishes the storage qualities and its qualities in relation to other local uses, for example making local beer. Some of these experimental indicators could be measured during the experiment but others could only be measured off-farm.

The outcome

In the experimental design two main outcomes were anticipated: yield increases of cereals by about 25% and a decline in the incidence of striga from 100 plants to 50 plants per test plot of ¼ acre. When measuring the results after the first year we concluded that yields did not change despite the applications of an organic matter/phosphorous mix. Striga weeds averaged around 80 plants. After consulting my colleagues at the SARI research station, we realised that we had been ambitious in anticipating the possible outcome: it is impossible to demonstrate any significant change with this experiment after only one year. Three years would be necessary on the same piece of land. Hence we intend to repeat this experiment three times. The community has acquired the knowledge that, when weeding is combined with the application of or-

ganic matter and chemical fertilisation, the weed pressure can be reduced, costs lessened and benefits optimised.

Failure or satisfaction?

Impatient outsiders might call this result a failure because we were unable to demonstrate more significant positive change. But during the learning and sharing workshop, the community had this to say: *The problems we encountered now should not be counted as failures. Outsiders may call them failures, but in the Gowrie community we call them steps towards success. This is because in the process we have achieved several things. We have become united both in religion and in knowledge. It has facilitated the organisational work in the community. Moreover, more knowledge, both indigenous and external, has been acquired and our community has been recognised by surrounding villages for its work with CECIK. Our ancestors have been satisfied by the procedures followed and the sacrifices we have made to them. We would like to repeat this experience all over again because our ancestors say so.*

This is the first year for testing out the sor-le framework as the basis of experiments lead by farmers themselves. The intention is to re-run it for one more year, with very close monitoring, before it can be consolidated as an option for farmers experimental design in the Gowrie community.

Heterogeneity of designs

It must be said that the final outcome of working with the sor-le analysis and the ELA framework is not a uniform procedure



Community participating in the discussions

Photo: CECIK

for designing experiments, but a rich heterogeneity of designs with detailed modifications. Such an outcome is problematic for our conventional concept of uniformity and up-scaling of experiments. In my work (Millar, 1992), I mentioned similar problems when I discussed farmers' notions of multi-locations, replications, and layouts. If the objective is to have a uniform design, then negotiations are necessary within this framework.

The ELA approach in the Gowrie-Kunkwa community has done two major things. On the one hand this experience has strengthened the farmers' capacity to experiment. The sor-le approach has motivated the community to experiment within their own cultural context and, in this way, has moved participation a step forward. On the other hand it has built in CECIK an institutional capacity to go beyond conventional experimentation with farmers, and even beyond NGO experimentation. It has provided us with new ideas about the process of farmer experimentation. In our quest for endogenous development this process can be adapted and the basic principles be replicated beyond the Gowrie community.

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Results achieved by CECIK

- Innovative farmer-oriented methodologies and approaches developed
- Improvement of small ruminants and poultry husbandry
- Credit programmes for women groups to stimulate traditional income generating activities
- Less migrations due to increased income generating activities, like fishing
- Successful competitions in 6 schools on indigenous tree species
- Environmental activities, such as tree growing around shrines
- Women more confident to speak out during meetings
- Successful networking at NGO and policy level
- Publication of local magazine The Horn

Towards a methodology to test indigenous knowledge

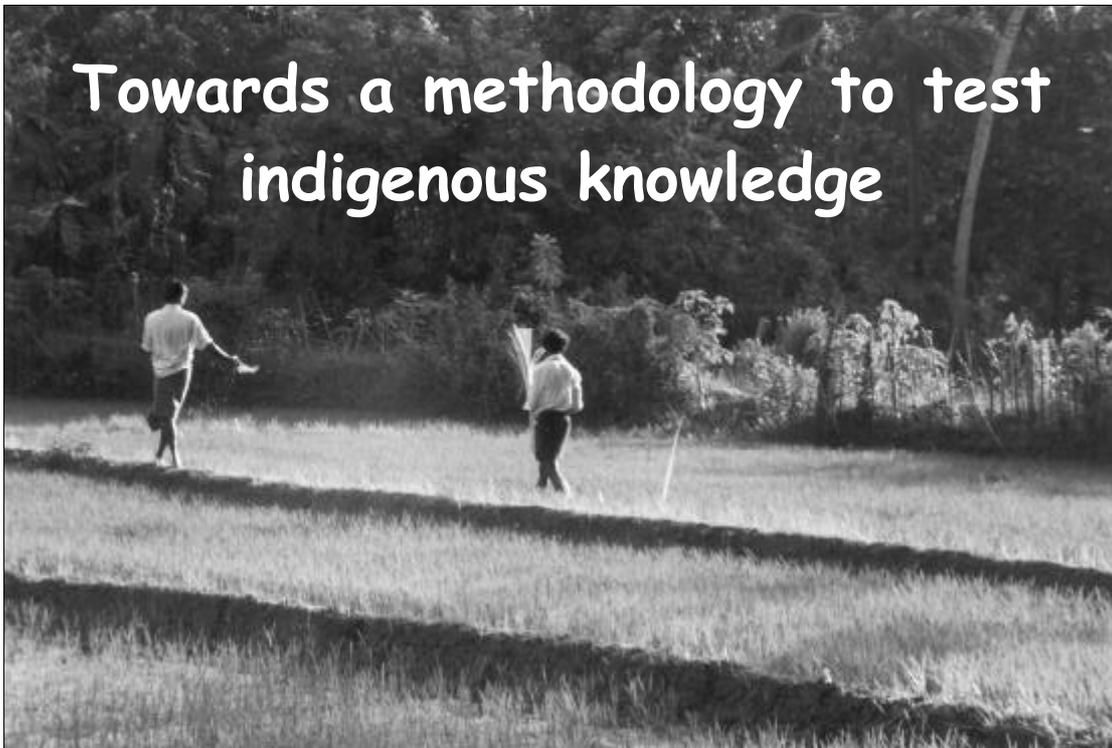


Photo: COMPAS

James Handawela

The Compas network in Sri Lanka includes 4 non-governmental organisations that have been promoting organic farming for many years. Documenting and testing indigenous knowledge together with farmers was a new idea for them, which required the development of a methodology and the training of field staff. The first steps in this learning experience are presented here.

The Compas approach was adopted by a network of 4 NGOs in Sri Lanka: Negampaha Agro-producers Society, Dambulla Community Resources Development Centre, Janodaya, and Future in Our Hands. The activities of the network are coordinated by ETC Lanka. The objective is to increase the effectiveness of the activities with the farmers. In 1999 considerable efforts were put into understanding the concepts of endogenous development and indigenous knowledge. In this the partner organisations' experience with organic farming proved helpful. The network decided to pursue endogenous development by promoting the authority, responsibility, and initiative of rural people to develop themselves.

During the initial network discussions it became clear that endogenous development was more than a way of escaping from the economic crisis caused by passively submitting to market forces. The challenge was not just to resist these external forces, but to enhance development from within. This implied giving due recognition to indigenous knowledge as a development option. In the process it would not be romanticised or proclaimed as the ultimate truth, neither would it be rejected as primitive or inefficient. In their discussions the fieldworkers of the participating organisations also explored the myth that

modern science is opposed to indigenous knowledge. They concluded that forerunners of modern science, such as alchemy, herbal medicine and traditional organic farming, have much in common with indigenous knowledge present in Sri Lanka today.

Documenting indigenous knowledge

After clarifying the concept endogenous development, and how indigenous knowledge could be employed in realizing it, the network decided to document the indigenous knowledge and practices found in their different areas. First the few custodians of indigenous knowledge, who had been holding on to it despite powerful external pressure, had to be recognised. Subsequently a methodology was needed to identify the indigenous knowledge available and create opportunities for testing, revitalising, and improving it.

The indigenous knowledge and practices were documented during numerous meetings with interested and experienced farmers. The objectives of endogenous development were presented to the farmers and the field workers expressed their desire to learn about farmers' indigenous technical knowledge, the concepts behind them, and the cultural and spiritual aspects involved. After this discussion the process of sharing, discussing and analys-

ing the indigenous practices and knowledge could start. The findings were documented with the farmers' consent, and later clarified during follow-up meetings. This information was used to draw up a baseline document on indigenous knowledge in Sri Lanka, which is still open to elaboration, expansion, and further clarification.

Outcome of the study

This study indicated the extent of indigenous knowledge and practice in Sri Lanka. It includes many ecological aspects, such as water management, landscape, climate, and seasonal differences. Traditional agricultural practices included mixed cropping, the association between trees and crops, soil identification practices, game management, and the use of plants for crop protection, medicines and natural fertiliser.

The findings also indicated that indigenous knowledge systems in Sri Lanka have three main components: the ecological/agricultural, the spiritual, and the astrological. Spiritual knowledge includes knowledge associated with spiritual beings such as the gods, benevolent and evil spirits, and demons. There are gods with specific responsibilities such as caring for the well-being of cattle and guarding crops and harvests. Some trees, hills, rocks, for-

ests, and rivers are thought to be inhabited by gods. The Bo (*Ficus religiosa*) and Nuga (*Ficus bengalensis*) trees are considered sacred and to be the home of deities. Ceremonies and sacrifices are held where they grow. Many traditional concepts have merged with Hindu and Buddhist beliefs and practices.

To obtain the protection of the gods it is necessary to have a good moral character, refrain from evil acts and make offerings, or *pojas*, and vows. A favour granted by a god has to be honoured with a vow, otherwise the gods may show their wrath in the form of disease, crop failure, drought, or flood. Some villagers reserve coconut trees for the gods, or tie tender coconut leaves to the trunk of a palm tree. Nuts from these trees are used to make food for the spirits, for lighting lamps at religious functions, and to feed the poor.

In agriculture, spiritual practices are designed to protect crops from pests and post-harvest problems. Practices vary from quite simple to very elaborate, and are generally combined with other indigenous activities, such as astrology and special consideration for the environment. Traditional spiritual practices are often performed by a professional spiritual healer or shaman. They may include Buddhist elements, such as the repeated sounds, or *mantras*, chanted to get rid of pests and diseases in paddy. While simple practices are freely transferred, the more complicated and powerful practices are kept secret and passed only to certain family members.

Astrology

Astrology is a major element in Sri Lanka indigenous knowledge systems. Astrology assumes that the arrangement of the planets has a direct influence on earthly be-



Photo: COMPAS

The indigenous practice of sprinkling chanted water to prevent wild animals to take more than their fair share

ings and processes. Therefore people prefer certain days of the week for planting root and tuber crops or some types of trees, while other days are considered good for planting cereals, for harvesting, or for working with cattle. During full moon the farmers prefer to take the first meal from a crop, while other types of field activities are generally not undertaken at this time. Before deciding on a certain agricultural activity, or before a journey, people in Sri Lanka often consult an astrologer.

Testing indigenous knowledge

As a result of the meetings with the farmers it became clear that it would be impossible to select individual practices for testing. Most practices consisted of a mixture of indigenous knowledge (IK) elements that were seemingly inseparable, and that had varying degrees of interaction and synergy. One practice, for example, could include ecological concepts and materials, astrological timing, spiritual influences, and social norms. Moreover, farmers often apply a variety of indigenous practices and these too are interrelated and complementary. Testing indigenous practices at field level with so many variables, some of which are unquantifiable, would produce results that would be extremely difficult to interpret and justify.

Rather than focus on testing individual indigenous practices, it was decided to compare farmers who were using indigenous practices with those following modern (non-IK) methods. Every network partner agreed to select 12 IK farmers and 12 non-IK farmers who were comparable as far as crops grown, social status, and economic standing were concerned. Arrangements were made to record their base-line status and to monitor their farming operations, costs, yields, and income. However at an early stage in the monitoring process it became clear that it was impossible to differentiate farmers into IK and non-IK categories. All farmers practiced a mixture of IK and non-IK applications, though in different proportions.

Indigenouness

After this observation it was decided to assess the level and intensity of IK application, and to express this in terms of the degree of indigenouness of the individual farmer. Farm performance could then be compared to the degree of indigenouness of their farming practices. This idea was also discussed with agronomists at the Peradeniya University, who agreed that it might be a sound way of expressing the effect of indigenous practices on farming performance.

After this endorsement each partner organisation chose about 24 farmers and assessed the degree to which they employed IK practices. In this assessment the number and type of the IK practices

Indigenous practices used to determine 'degree of indigenouness'

1. Mixed cropping
2. Crop rotation including fallowing for long periods
3. Indigenous methods of crop processing and storage.
4. Enterprise diversity and the degree of integration of crops, livestock and trees
5. Adherence to auspicious times for performing farming operations
6. Adherence to accepted seasons
7. Minimum tillage, avoiding inversion of surface soil, preferably by cattle
8. Application of organic manure
9. Labour sharing and village/community level cooperation
10. Farm-level breeding and seed improvement
11. Weed management by indigenous means
12. Measures for rain harvesting or for improving rainfall efficiency
13. Making vows to spirits at the beginning of the season, and honouring the vows at the end of the season
14. Repetitive chanting of *Pirith* (poetic Buddhist texts) against pests and evil forces
15. Application of *Yantra/Mantra* to ward off pests, disease, evil effects, and to invite spiritual blessings
16. Application of *Kem* (customary action) to prevent or remedy field problems
17. Application of *Vrukshayurveda* (traditional treatments) against plant pests and diseases

adopted by each farmer were determined. This was based on the farmers' own assessment, then comparing this to the opinion of neighbouring farmers and the field worker's impressions. During later discussions the partner organizations and the farmers developed a more fact-based method for assessing degrees of indigenouness. In this evaluation the amount of IK practices raised the level of indigenouness, while the use of non-IK elements, like chemical fertilizers, lowered the degree of indigenouness.

Refining the method

As the season progressed, the farmers and partner organizations became increasingly concerned to find better ways of assessing the level of indigenouness of individual farmers. It was suggested that instead of giving negative marks when a farmer used modern farming methods, assessment could be based solely on the extent to which specific IK practices were followed. A provisional checklist of IK practices for this assessment was proposed (see Box). Clustering these different IK practices into spiritual practices, astrological practices and agricultural technologies can be interesting, but has not yet been attempted.

In the assessment all 17 practices had equal importance. Marks were allotted as follows: on a scale of zero to six the highest score - 6 - was awarded for maximum use; 4 signified moderate use; 2 low use and 0 no IK used at all. Each farmer's degree of indigenouness was assessed by adding up the number of marks he or she had scored. After this more refined

method was accepted, the field workers of the partner organisations were able to assess the level of indigenouness. They did this in consultation with the farmer while drawing on the results of their own field observations, and the farmer's own data.

Measuring the effect

Initially the idea was to collect accurate information on costs, labour, yields, and farm income in relation to the level of indigenouness. This task proved difficult, however, because it was the first time the field workers and the farmers tried to monitor farming operations at some level of clarity and detail. Activities were also affected by a lack of literature on this subject.

The following general conclusions emerged, however, after qualitative data was combined with the ideas and judgements provided by farmers and field workers. First of all, farmers with a high level of indigenouness with high IK rating - spend less cash on inputs. At the same time their returns per unit of cash invested were higher than those of farmers with low IK ratings. Also, according to the farmers, the quality and taste of the produce tended to be better with increasing level of indigenouness.

Another striking difference was the hardiness of crops under circumstances of environmental constraint. When there are no constraints, the low-*IK* (modern) farmers obtained higher yields and higher monetary incomes than the farmers with higher *IK* levels. This did not always result in higher profits, however, because of the high cost of external inputs. Where the external environment was unstable, however, crops on high *IK* plots proved hardier. For example, these crops were better able to withstand water scarcity than crops in low *IK* fields. This might be due to their deeper root system and the lower moisture content in body tissue. These elements can be studied and measured.

The higher risk of the low *IK* farmers is not only due to the decreased hardiness of the crops they use, however. It is also due to poor input management, as they tend to concentrate on nitrogen fertilizer at the expense of other fertilizers. Also they often apply insecticides after the damage has already been done.

Case-studies

The Janodaya field workers collected information from two chilli pepper farmers. Chilli was planted instead of paddy because of limited water supplies. Water constraints affected the chilli crops, though the chilli plants in the high *IK* field

withstood moisture stress better than the chilli planted by the low *IK* farmer. The chilli pods from the high *IK* plot were of better quality and were selected for display at an agricultural exhibition. Moreover, there was another interesting difference that has implications for sustainability: more honeybees were present in the high *IK* field than in the low *IK* field. Other farmers with high *IK* rating have had similar experiences. Most observations concern friendly insects like the honeybee, and birds.

We must state here, though, that in this stage the results of the experiments are still preliminary and incomplete. During the next cropping season more accurate information on costs, labour, yields and farm income will be collected, and the results between different degrees of indigenouness will be compared. Field

considerably. They have established good relationships with the *IK* resource persons and have been able to bring these otherwise isolated individuals closer to each other, so they are better able to interact, share and improve their knowledge and practices. In this way an informal forum for endogenous development has been established at all four locations.

Reassessment of the degree of indigenouness of local farmers, and how this correlates with farm performance, appears to be a useful method for testing the relevance of indigenous practices. For this assessment farmers and field workers have to continually collect accurate data and make observations in the field. By involving farmers with a wide range of *IK* levels, and by keeping proper records on them, it may be possible to compare their performance and the effects of certain spiritual and astrological practices as well.

In terms of institutional development, the four NGOs have made considerable progress. They now keep better accounts, communicate more, and have realised the value of taking field notes. Network coordination has improved so much that the individual NGOs now take turns to host the half-yearly network meetings.

In all four locations more and more farmers have expressed the desire to join the network and improve their farming operations. They are keen to test and become active partners with the network NGOs. Interest in astrology and spiritual practices is increasing and government extension workers, who are now considering this methodology as a serious alternative, are keen to see further results.

Perspectives for the future

So far we have only taken one step. Much remains to be done in the field of methodology development as far as indigenous knowledge and practices are concerned. We have several things we would like to do in the near future. We want to find ways of increasing the involvement of farmers in assessing indigenouness and the impact of *IK* practices. We want to co-operate more closely with astrologers, shamans, and Buddhist leaders in the process of testing and improving indigenous knowledge. This may shed more light on the possibilities of measuring the effectiveness of the indigenous practices on today's Sri Lanka agriculture.

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Photo: COMPAS

Different age groups take part in the ritual to prevent or remedy field problems

staff and farmers will also receive more training in collecting accurate quantitative data.

Successful first steps

When they started on this study of *IK*, fieldworkers were unfamiliar with the concepts of endogenous development and indigenous knowledge, and lacked field experience in testing agricultural practices, keeping field records, and making reliable comparisons. During the first year of network operations they have grown to understand the concept of endogenous development and to grasp the relevance of indigenous knowledge. The field workers' capacity to make field observations and record them, and their ability to explore the effects of indigenous practices together with the farmers, have improved

Reactions from readers

To Compas Newsletter,

When reviewing the Compas Magazine no. 3 July 2000, I felt that the issue of gender in endogenous development is not dealt with in an adequate way. The position of women in Africa, as in the rest of the world, has to be part of the analysis of the political, cultural, socio-economical and ecological context. In most social structures in Africa, where I come from, women and men have a different status and control over their lives. This demands a critical analysis of the issues featured in the Compas Magazine from a gender perspective.

With a stronger gender perspective, I argue, more criticism would have been included in the articles on the role of traditional leaders in Africa. For example, throughout the African continent traditional leaders are being criticised for their role in spreading AIDS and victimising young girls and women. Traditional leaders in various countries advocate sex with virgins as a cure for AIDS, or are proponents of the cleansing rituals of widows through sexual intercourse with a male relative of the deceased. These kind of traditional practices need to be critically looked at in a magazine that advocates endogenous development. Only after including gender relations in the analysis of the practices and attitudes of society will the real issues regarding indigenous knowledge be revealed.

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Sir/Madam,

Greetings of peace and solidarity from the Lumad peoples of Mindanao! I'm Alim M. Bandara, one of the chieftains of the Teduray tribal denomination of the Lumads peoples, who are among the victims of the present conflict in Southern Philippines, I received a copy of your July 2000 issue of the Compas Newsletter.

Your articles on traditional healing 'healing hand of Shimoga' by A.Hafeel and Suma T.S. are very similar to that of our Bliyan or healer. But unluckily their practices are never recorded like those of Narayan Murthy in your article. In our villages going to a doctor in the town for Western medication is one hundred times more expensive than going to a bliyan, yet no efforts are made to develop traditional practices and much more to preserve the sources of raw drugs.

Your articles are very encouraging. Good that you have FRLHT working hard to promote the traditional health practices. We wish to do the same especially the codification of traditional healing practices now that our bliyans are being isolated by the expansion of modern and commercialised health practices. Not that we do not want modernisation, but that these affordable to us. The only alternative we have is the promotion and systematisation of the traditional healing powers of our bliyans.

I say THANK YOU (Fiyo Bagi) for sending this very educational reading material. I hope that this will be the beginning of our tribal information-exposure on indigenous peoples' development in other parts of our Mother Earth.

For the Lumads,
Alim (Lumad Development Centre)

We are happy to announce that the Compas secretary in the Netherlands, Marijke Kreikamp, gave birth to healthy son on 1 March 2001. His name is Joost Cornelis. Congratulations!

Call for contributions Compas Magazine Number 5

The last three issues of the Compas Magazine have had a thematic focus (biocultural diversity, vitality, health and diseases and this issue methodologies for endogenous development). Compas Magazine Number 5 will have no special focus. Any contribution with experiences related to endogenous development can be sent in for consideration. Your contribution can be about practices and innovations relating to the management of crops, trees and forests, waters, and animals, but can also include themes like traditional ownership of land, legal systems, local systems of governance and decision making, or describe processes of learning and experimentation. We are interested in experiences from Southern and Northern countries and welcome more theoretical reflections about indigenous knowledge and endogenous development. We are particularly interested in contributions that focus on gender and youth.

Please keep in mind that Compas is not an academic magazine written at an analytical and conceptual level. Instead, we have a development focus which offers space for practical experiences and reflections.

We do not have a rigid format for articles, but generally like a contribution to include the following information: the region

and ecosystem in which the experience takes place; the social and political organisation of the people involved; their worldviews and cosmovisions; gender aspects; traditional practices and their technical, social and spiritual dimensions; the role of traditional leaders; the role and approaches of development agencies; innovations and adaptations generated by the rural people; the consistencies and tensions between the concepts and values of the rural people and those of other agencies; successful or failed interactions; and options for endogenous development.

Contributors will be asked to provide information in texts, but also pictures, cultural expressions in the forms of songs, myths and other symbolic expressions are welcome. Please include comments and quotes from the people involved. The articles published in this magazine are often the result of intensive co-operation and dialogue between the author(s) and the editors, which may imply that you will be asked for further information. Articles will be published in both English and Spanish and will appear on the Compas website in both languages.

The editors

Basic activities to support endogenous development



Photo: COMPAS

1. Learning about indigenous knowledge and values

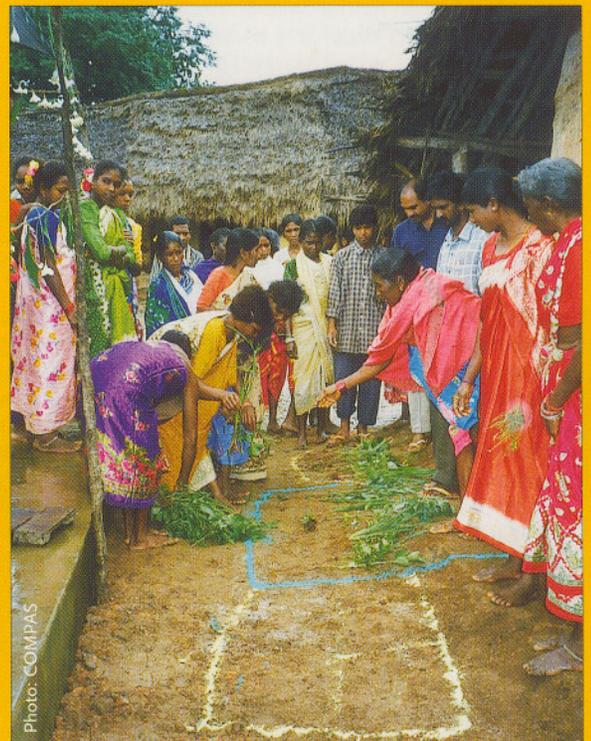


Photo: COMPAS

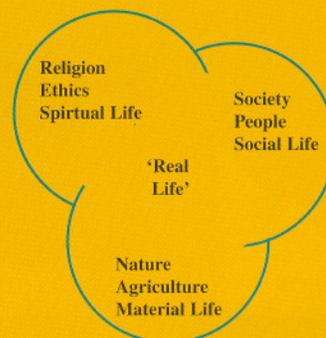
2. Revitalising and improving local knowledge and practices



Photo: COMPAS

3. Skill development and training of field staff

1. Spirit medium in Iganga, Uganda, explains how the flora and fauna influence healing and farming practices. African organisations met in Uganda to discuss ENIACA-Enhancing Indigenous Agricultural Knowledge in Africa, May 2000.
2. Women of the tribal population in Orissa, India, identify the different weeds of their paddy fields to determine and test their use for food, fodder, medicine and soil improvement.
3. Woman farmer in Iscos, Peru, offers coca leaves during the Santiago ritual for livestock health and production. Her husband explains the meaning of the ritual to a staff member of REDES.
4. During the workshop on indigenous cosmovision and biodiversity in the community of Chorojo, Bolivia, representatives of seven countries made plans to enhance indigenous agricultural knowledge through the Latin America Compas network.



Indigenous concept of 'Real Life', the basis of the Compas Symbol



Photo: COMPAS

4. Networking and dialogue