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# TRADITIONAL WISDOM MODERN KNOW-HOW

Report of the Consultation on Fusion of  
Traditional Wisdom and  
Modern Technology in Natural Resource Management  
March 13-19, 1994  
Kiboswa Development Training Center, Kenya



Sponsored by

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475 Riverside Drive, Room 1842  
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Editor  
Nancy G. Wright

with assistance from  
Caroline Njuki, Karen Peters, and Charmaine Tucker

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## THE SECRET TREASURE

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**F**or countless ages many peoples protected the Earth's flora and fauna even as they developed complex human societies. They did this through detailed knowledge about themselves and their environment. This knowledge is traditional wisdom, or indigenous knowledge.

Can this traditional wisdom help African countries improve their socio-economic situation while protecting the environment? Further, what is traditional wisdom? How can it be utilized in changed and changing times, circumstances, and environments? Is there some traditional wisdom that can still be helpful? Is there a difference between wisdom and knowledge? Further, can traditional wisdom be improved upon by modern technologies to meet people's needs today?

To answer these questions, forty development practitioners from three East African countries gathered in Kenya in March, 1994 at a CODEL-sponsored consultation on "Fusion of Traditional Wisdom and Modern Technology in Natural Resource Management." They represented tribal groups, Christian development organizations, the government, appropriate technology agencies, community development organizations, and advocacy groups. At the end of the week they affirmed the following: particularly in Africa, *development will not succeed unless grounded in traditional wisdom.*

Traditional wisdom, we know, can apply to many aspects of human endeavor. There are traditional ways of utilizing forests, soils, fisheries, and animals and of growing and storing food. There are many traditional methods of classifying diseases and treating them.

CODEL's stance is that awareness of the value of traditional wisdom is important to groups that promote community-based sustainable development. Development, like a tree, should grow from the roots of a people's cultures and traditions. This understanding was stressed by consultation participants. The details of development process, then, will differ among societies.

**Development, like a tree, should grow from the roots of a people's cultures and traditions.**

Despite its importance traditional wisdom is being tragically lost. Traditional wisdom has rarely been given enough emphasis and is usually invisible to outsiders, including development workers.

Modern development approaches have often undervalued, if not undermined, traditional wisdom. Some development workers have not had time to learn about traditional wisdom. Even more, to do so might make the meaning of development itself quite ambiguous. Further, recent development approaches utilizing modern capital-driven technologies often destroy local knowledge. Too, the global market system works against diversity and small-scale localized methods of production and development.

**"To the African eye, the universe is not an entity, present once and for all. Rather, it is a world full of meaning, messages and revelations. It is a world that talks; a world that fosters communication and welcomes dialogue."**  
(Missionaries of Africa Report, March-April 1990)

Yet, there is room for optimism.

Among development workers and policy makers there is growing appreciation for indigenous knowledge and the immense contribution it can make to development activities. This trend should be further stimulated by making indigenous knowledge more accessible and thus more effective for the development enterprise.<sup>1</sup>

As the consultation participants stressed, traditional wisdom needs to be applied to today's problems. To meet the needs of people in a changing world, traditional wisdom may need to be improved upon through modern technology. Some aspects of traditional wisdom may not be useful now. But much is useful; it constitutes a vast heritage about ways of living that can sustain people and their natural environments and that can be fruitfully brought to bear on present problems.

## **Purpose and Objectives of Consultation**

The CODEL consultation on "Fusion of Traditional Wisdom and Modern Technology in Natural Resource Management" adopted the following working Purpose and Objectives:

### ***Purpose***

To promote respect for and understanding of utilization of traditional systems of natural resource management in conjunction with appropriate scientific technologies to encourage sustainable ecological and social development with special emphasis on women.

### ***Objectives***

1. To increase understanding of the value of traditional wisdom and its impact on natural resource use and sustainable development;
2. To explore effective ways and means to combine modern technologies with traditional practices;
3. To develop a framework for implementation of four pilot projects from three East African countries that demonstrate successful use of combined technologies;
4. To document and disseminate information about the importance of respecting appropriate traditional systems of resource use and the feasibility of combining these with appropriate scientific technologies.

### ***Program and Process***

The consultation program was designed to move from the general to the particular. To set the stage, three keynote speakers focused on traditional wisdom, improved (or combined) technology, and participatory rural appraisal. Moving to the particular, development practitioners from Kenya, Tanzania, and Uganda then assessed the state of traditional wisdom in their countries. By mid-week, the consultation progressed to working groups where participants planned four pilot projects integrating traditional wisdom and

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<sup>1</sup> *Indigenous Knowledge & Development Monitor* 2 (April 1994):1.

modern technology for natural resource management. Communal planning generated a sense of ownership for the pilots and further refined the goals for these projects. The value of traditional wisdom was affirmed throughout the consultation. Everyone present offered humor, experience, insights, critique, and concern, fostering a rich exchange.



*Participants at CODEL Consultation on Fusion of Traditional Wisdom and Modern Technology in Natural Resource Management*

### *Purpose of this Report*

The purpose of this report is to summarize the proceedings of the consultation for participants and to disseminate results to CODEL members and other partners particularly in Africa. CODEL intends for the report to be part of a world-wide process of learning about those human practices that throughout the ages have fostered human development while respecting the natural environment. It is these practices that bear untold potential today.



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## *"Opening Remarks and Introduction to CODEL"<sup>2</sup>*

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Dr. Caroline Njuki gave the following succinct appraisal of today's Africa. She is a native Ugandan, with extensive development experience in the United States and Africa.



*Dr. Caroline Njuki,  
Projects Director, CODEL.*

All of us who are present here know that Africa faces many problems. In the areas of quality of life, economics, health, and education, Africa is in a worse state than before independence. Since then, we have adopted without question many technologies and ways of life. We now use medicines, pesticides, and fertilizers that are supposed to be better, but what do these advances actually do for us?

Instead of making forward strides, we are moving backward. The people of Africa have been blamed for the chaos in their countries, and donors are experiencing "donor burnout." Unfortunately, it is not all Africa's fault. Cotton, coffee, and other cash crops are now sold for far too little. Yet, African countries that are agriculturally rich are importing food. How in the world did Black Africa end up in a situation like this? One can only ask: Before adapting Western ideas, did we never get sick? Did we never use fertilizers?

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<sup>2</sup> Unless stated otherwise, all the presentations in this report are summaries of those made at the consultation.

Maybe we need to look back into our past to build a better future. People used to get sick and were cured. People did use organic matter as fertilizers. There was enough to eat, and people had traditional ways of storing food and water in preparation for droughts. There were traditional ways of survival that have been abandoned because people came to believe that “new was better.”

After thirty years, we are beginning to realize that the new is not working for us. We must therefore look for ways to take from both the new and old what works well for us in order to save Africa from impending disaster. Why is so much money spent to save forests and gorillas? It is because environmentalists have realized that we need to save the forest in its original state for humankind to survive; and there are many things to learn from the gorillas that live a “traditional life.” There are people who hold ancient wisdom about food and medicines. The wild gorillas teach us how to live close to nature without destroying it, just as women in traditional settings depended on their environment to care for their families for many generations without destroying it.

It is only with the new technologies that the Earth has been brought to the brink of disaster. We Africans need to reexamine the past to find and save ourselves, our forests, and our animals. We then have to evaluate the present and decide what we need to adopt from there.

“We Africans need to reexamine the past to find and save ourselves, our forests, and our animals.”

About a year ago CODEL began seeking funds from the U.S. Agency for International Development (USAID) for projects in Africa focused on traditional wisdom; AID was enthusiastic about this. Thus was born this consultation and the pilot projects that will result from it.

Our goal during the consultation is to learn from each other. We will brainstorm issues that relate to traditional wisdom and modern technology with the hope that we can come to acceptable recommendations on the process of Africa's future direction developmentally and environmentally. It is CODEL's hope that lasting friendships will be made and that these friendships will lead to the betterment of our communities.

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O N R E F L E C T I O N . . .

*Indigenous knowledge or traditional wisdom? At times the phrases were used inter-changeably. Many participants distinguished between the two. In this report the two are used inter-changeably, but this whole area bears more discussion.*

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## *“Program Elements Relevant to Traditional Wisdom and Combined Technologies”*

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To further set the stage, Mrs. Busolo gave an overview of traditional wisdom.



*Mrs. Dolline Busolo,  
Sector Manager  
Indigenous Foods, KENGO*

**I**ndigenous knowledge is the knowledge or skills needed to sustain livelihood. It is passed on from generation to generation, appropriate and unique to a community or area, and always changing. It is basic to development of appropriate technology.

Indigenous knowledge is essential for many aspects of life. Only with traditional wisdom can Africa foster natural resource conservation or cultural understanding. Medicine, science, proper food conservation and nutrition, and economic valuation of natural resources all depend upon it.

While traditional knowledge should be a factor in decisions made by policymakers, it is often neglected and lost. Not usually written down, indigenous knowledge also sometimes involved witchcraft; most people thought to be knowledgeable viewed it with suspicion. Colonialism, international trade, and new agricultural practices all handicapped the use of traditional wisdom, particularly for food production.

Traditionally, African women were custodians of the seeds for the next community planting; they knew how to grow, process, and store food. They passed this on to their girl children. Now TV and school isolate girls from mothers.

Every African state should enforce environmental policies and laws that encourage cultural norms favorable to the environ-

ment. NGOs must promote strategies that include indigenous knowledge in natural resource management, and benefits should flow to communities and families. A gender analysis of work roles is helpful. Development practitioners should ask communities: What are the indigenous plants and trees? Why do you value these? How is the community protecting them?

We at KENGO help a community to protect their seeds and plants and to plan to replace what is being used. We ask ourselves, are we living with the people, developing the technologies with them? Are we using existing community structures? We at KENGO affirm that the fusion of traditional and modern technology should be gradual.



*Consultation tea break*

## **Participants' Expectations for the Consultation**

- to appreciate other countries' successes and problems;
- to understand why Africans so easily "gave up" their outlook and wisdom;
- to determine ways of reviving African self-esteem;
- to document the effects of combining traditional wisdom and modern technology;
- to help conserve traditional wisdom for following generations;
- to develop links between traditional wisdom and Christianity;
- to fuse traditional and modern technology for the benefit of women;
- to preserve and protect indigenous knowledge from intellectual piracy;
- to identify types of traditional wisdom;
- to develop concrete case studies that demonstrate the fusion of traditional and modern knowledge;
- to strategize a comprehensive action plan;
- to promote traditional wisdom for development;
- to help people blend traditional knowledge and science;
- to help CODEL understand and identify the varieties of traditional wisdom, so that results could be disseminated to other practitioners.



# SEEKING TO KNOW MORE ABOUT WOMEN

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## "Research Project: Women in Development"

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Concurrently with the work on combining traditional and modern knowledge, CODEL is supporting a women's development research project, coordinated by Sr. Rachel Kunkler, M.M. She spoke about that project at the consultation.



Sr. Rachel Kunkler,  
Maryknoll Sisters, Tanzania

**W**omen today find themselves in a very strange position. This situation has existed for about 5,000 years, so it is not new, BUT it is strange. What is new is a certain consciousness about where we find ourselves and a deep unconscious knowing that in our memories there was/is something else.

If a woman is in a rural setting in Africa, she manages the household, is the chief laborer in the field, and after a long day there, with aching body, must walk even further in search of firewood. She puts this heavy load on her head, ties the baby securely on her back, picks up his hoe (which was probably laid down several hours ago...) and hers, and starts the long trek home; not to rest, but now to go and carry water, to begin the evening meal, to attend to the many chores awaiting and, of course, to get the hot water ready for the husband's bath.

If she is in an urban setting, the scene only differs from the fields to streets as she thinks up ways to make more *maandazi* (donuts), or chips, or tie-dye, or whatever, in the already over-crowded competitive market. She is desperate to get that little

extra income for her children—their uniforms, books, school fees, medicines, and all the other seemingly endless financial needs of the family. She arises long before the sun and sleeps only very late into the night.

And if I asked women in either of these settings “What work do you do?” more often than not they will answer “*Sina Kazi*,” that is, “I have no work.”

When the Wasukuma describe the *Jembe* [hoe] they say:

*She is our mother.*

*She digs the earth and provides us with sustenance.*

*She is our mother.*

*When we die she again digs the earth and buries us.*

There is a definite merging of the symbols here: the mother, the hoe, the earth into one image: *Gaia* [Greek term for Earth], life producing mother Earth from whom we came, to whom we return, of whom we have our being.

The merged symbol continues in the woman:

*The life producer, the food producer, the nourisher, the healer, the one who anoints and mourns the dead, woman-earth, are one in their awesome creativity.*

So how is it that as women we now find ourselves at the “bottom” or very near bottom? Bottom is a term that has meaning only in patriarchy and hierarchy. We live out of an anthropology and cosmology that is patriarchal. There is the terrible experience of “bottom,” in low self-esteem, in low income, in little ability to take charge of one’s self or even one’s ideas.

It gets tiring pretending to be stupid, to always ask permission, to look for the best moment to ask one’s husband, or father, or brother, or uncle for simplest need, from buying a table with one’s own money to attending a three-hour seminar.

Since we now live in this world that equates power with eco-

nomics, then perhaps it is to economics we must turn in order for women to regain their rightful positions and more importantly for the feminine aspects of community development to flourish: compassion, creativity, communion, and care for the earth.

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After this impassioned speech, Sr. Rachel described her research focusing on a co-op of women's groups engaged in varied types of economic activity. Called the Women's Trust and Development Association, the co-op's aims are to:

- Promote self-esteem, self-reliance, and income of women;
- Form a credit and savings club for women;
- Enable women to develop new projects and or existing projects;
- Give special attention to young women, in particular Standard VII and/or Form IV-leavers who are struggling to survive in the town;
- Conduct educational seminars/workshops for the members and other interested women.

CODEL expects to see improved income, health, nutrition, and housing that will better the lives of the women. There is also the hope for the women to enjoy improved self-esteem and self-determination as well as more free time.



*Members of the Women's Trust and Development Association, Iringa, Tanzania*

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## THINKING WISELY AND DEEPLY ABOUT TRADITIONAL WISDOM: KEYNOTE ADDRESSES

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*"The Role of Indigenous Wisdom in Natural Resource Base  
for Management within East Afrika"<sup>3</sup>*

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Mr. Barasa is a proponent and adherent of the twenty-year old SAGE philosophy and movement. SAGE expects people who have rare "philosophic insights and standpoints on various fundamental questions of existence" to be involved and consulted in important questions for community development.



*Mr. Chaungo Barasa,  
Kenya Finland Western  
Water Supply Programme*

**W**ith increasing technological development, humankind has become more and more conscious of our ephemeral nature and also of the fragility of the planet Earth. Technology has precipitated our problems but at the same time enhanced our perception of the looming dangers. What are these dangers: A depleted and abused environment, deepening moral apathy and individualism, and a population boom that threatens to exceed planet Earth's carrying capacity in less than a hundred years.

How do we best harness the environment for our common survival without depleting it for our common extinction?

There has been much ignorance of ecological systems until the 1970s. We need now to blend traditional and modern ways and insights. Nature to the indigenous Afrikan is not an inert

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<sup>3</sup> Afrika: The spelling of Africa as it would be appropriately pronounced in Kiswahili, the "Lingua Franca" of East Afrika.—[note courtesy of Chaungo Barasa]

existence, but a living colleague in its own right, a being at times superior to humans! But this holistic attitude to nature has been debased by Western philosophy and technology, Christianity, and hierarchical development schemes.

We need to imbibe the beliefs and wisdom inherent in a particular community's repository of myths, legends, living culture, technologies, and historiography. Traditional wisdom or knowledge is that parcel of knowledge, of values, of lifestyles, that we have inherited from preceding generations. Each culture is traditional, if it is a living culture.

Afrikans then need to affirm four values based in Afrikan holism: simplicity, eco-sensibility, communalism, and endurance. Many beliefs and opinions regard children variably as wealth, as an extension of the self into immortality, or as

"We come honestly  
looking for  
alternatives—not for  
intellectual debate but  
to help others from  
the heart"  
—Consultation  
participant

insurance against old age. "Modern" Afrikan presidents will bend knee-deep just to kiss and receive a bouquet of flowers from bewildered toddlers. I have no doubt that in East Afrika we have a deep, nostalgic touch with progeny.

If it be granted that a tradition of service to posterity is already in place among East Afrikans, isn't half the environmental problem potentially solved? Surely, we can favorably align that tradition to the campaign for our (I mean our grandchildren's) resource base. To do this we—the peasant in the village, executive in the city skyscraper, scholar in the tower, artisan in the factory—all have to declare ourselves FOEs—FOEs of extinction, that is, **Friends of the Environment**. Concern for the environment needs to be an everyday personal agenda (even ritual) for every citizen, at all levels. The following are examples:

- The village peasant caring for his cattle track, so that it is not washed away (as so many are) by gully erosion.
- The grandparents at the evening fire narrating and enacting the animals, insects, birds, grasses and tree types that inhabited our present neighborhood years ago. Which stream or spring was where and why/how/when did it disappear?
- The timber merchant planting a tree then and there for every single one sawed down.
- Shopkeepers, butchers, and caterers proving, in order to get a municipal or trade license, how many trees or lawns they have planted within the town park or along its streets. How much garbage do they help to safely dump weekly?
- Hoteliers rearing birds, butterflies, friendly insects, and fish in their courts.
- Plantation companies developing policies to practice agro-forestry.
- Beside the main cash crop, the contract agreement with the farmer including the planting of several acres of staple and other subsistence foods.
- NGOs setting as a precondition for funding a project that it be involved in environmental restoration.
- Every country observing, actively, not just a single tree planting day per year but an “Environment Restoration and Rehabilitation (ERR)” month every year.
- Every primary school child up to university level planting in her/his village or estate twelve trees every year.
- Making the environment a full-fledged subject on school syllabuses from nursery to university.

The turn of the century has always inspired humanity to great feats. The turn of the eighteenth century inspired the Industrial Revolution in Europe. The turn of the nineteenth century spurred humankind into technological perfection. The twentieth century propelled humanity into the space and information ages.

I believe the turn of the twenty-first century, which is just about 2,000 days from today, can thrust humanity into the ENVIRONMENT AGE. Let us adopt as our motto: *Friends of the Environment unite!*

### **The Week's Wisdom**

*(Examples of traditional wisdom given by conference participants and speakers)*

- The compound was always kept clean; sweepings were put into a hole and put into the garden around bananas, sugar cane, cassava root, or arrowroots, any of which could carry the family over during famine. (East Africa)
- One never went indoors without taking something from the garden. (East Africa)
- Women were custodians of the seeds. (East Africa)
- Women maintained the composting process. (East Africa)
- One talks to a tree before cutting it, saying; "I am not devaluing you, but I have the honor to use a part of you." (Masai)
- For flu, herbs are boiled in a pot and covered with banana leaves; the sick person inhales the steam. (East Africa)
- Cure for skin cancer: After skin surgery the fat from an animal is melted and the hot oil applied as a dressing for the wound. (Masai)
- Animal vaccination: The meat from a diseased animal is boiled with herbs and the broth either fed to other animals or injected. (Masai)
- A traditional way of preserving food such as sweet potatoes and bananas is through sun drying. (Uganda)
- Meat can be preserved using honey. (East Africa)
- Water can be rendered safe for drinking by treating it with particular plants. (East Africa)
- Potatoes can be preserved in the late summer by putting them in a pit lined with grass. They are then covered against frost. (East Africa)
- Seeds may be preserved on top of the cooking place. (East Africa)
- People have often planted on terraces to counteract erosion and retain the good soil. (East Africa)

## *"How Can We Combine Traditional Wisdom and Modern Technology?"*

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We can't, said Dr. Kapiyo of KENGO. What follows is a summary of Dr. Kapiyo's keynote address.



*Dr. Raphael Achola Kapiyo,  
Assistant Director Kenya  
Energy Nongovernmental  
Organization (KENGO)*

**M**any people realize that problems facing the world today do not have easy solutions. The very question about combining traditional wisdom and modern technology shows that we have a problem. People have much potential to live sustainably, but they are rarely given a chance to work on this.

The problems we face are "human-made." They have to do with the management of the human being and how human beings react to the environment. Nature seemed until recently to provide everything we needed. Now we discover there are limits to the use of modern techniques. No longer are people concerned to conserve for the future.

All communities had powerful wisdom and technologies that they developed at their own pace to suit their own specific needs. But modern technology dismantles and erodes this traditional wisdom. The continued survival of communities will have to do with how modern society builds on traditional wisdom.

However, the fusion of indigenous wisdom and modern technology is very complicated. Wishful thinking can be generated from this idea of combining traditional and modern technologies. And helping communities develop means becoming a part of their experience and struggle. A ringing challenge to develop-

ment workers is: “If you consider my struggle as part of your survival, then perhaps we can work together.” And a second challenge is borne out by bitter experience: “Development is never good for indigenous people.”

Traditional wisdom and modern technology may be contradictory. For this reason how can we even talk about combining them? The characteristics, starkly described, are:

TRADITIONAL WISDOM	MODERN TECHNOLOGY
• follows nature’s laws	• manipulates resources, leads to resource depletion, controls nature
• studies nature’s pattern	• develops fast-growing, high yield species
• cultivates crops suitable for given area	• promotes what is new
• allows for natural regeneration	• uses artificial fertilizers
• harvests naturally ripened fruits	• grafts plants for fast growth/ripening
• is based on community customs/totems	• focuses on the individual
• produces only what is needed	• fosters mass production and artificial stimulation of consumption
• offers many reasons for use of resources (spiritual, nutritional, social communal, ecological)	• puts monetary value foremost

Traditional wisdom or knowledge can provide a firm basis for development. And modern technology does accomplish some important things. How do we decide what is good and bad?

One of our greatest problems has been society’s development without knowing the principles of nature. Standards should be

developed based on nature's principles. Without such standards we cannot develop. We have not given values to nature's resources. We must revisit nature to develop our standards.

I have attempted to rank the various levels of nature in order to help us establish values.

- Level 1** Highest order of nature: air, light, water, and land. These are indispensable to all life.
- Level 2** Natural vegetation and animal life. The emphasis is on coexistence.
- Level 3** Interaction between human beings and natural resources. The emphasis is on transformation, manipulation, production; here humans become significant.
- Level 4** Utilization of resources for human consumption. The emphasis is on food, cars, buildings, roads, guns, all that humans now use to carry on their life.
- Level 5** Waste and waste management (disposal and regeneration).

We need a different wisdom for different levels. It requires a great deal of wisdom to properly value Levels 1 and 2, because these are shared resources. Traditional wisdom, in the form of customs, totems, and ritual activities respected and recognized the power of nature (Levels 1 and 2). Activities were undertaken in which the various levels of nature were clearly valued. Since the beginning, the first level was considered almost sacrosanct; it was God-given.

However, modern technology rates everything at the same level. Human beings, usually thought of as at the highest level, should in some ways be considered on the lowest level, because they are wantonly destroying the basis of life: air, water, and land.

**Suggestions for the coexistence of traditional wisdom and modern technology are the following:**

- bring out the principles and laws of nature in different regions of the world to guide and protect natural resources;
- strengthen indigenous institutions, such as the *duol* or *gunda* in Luoland, *Njuri Ncheke* in Meru, *Kay* of Miji Kenda, *Laibon* of the Masai;
- develop activity programs and educational curriculums around issue areas (e.g. agriculture/indigenous vegetables, forestry, fishing, wildlife, minerals) with specific guiding principles and laws based on a proper valuation system;
- develop a compendium of guidelines, laws and customs, ethics, rituals and other practices based on the five critical levels of nature for various ecological and cultural regions;
- identify aspects of thought and activity that either erode or foster traditional wisdom, and use these to critique modern development;
- push governments to create policies that foster the use and value of traditional wisdom in all situations;
- develop and adapt guidelines on traditional knowledge and wisdom that lead to practical application;
- encourage the development and adaptation of appropriate and relevant technologies.

It is practically impossible to go forward without traditional wisdom. Traditional wisdom always has practical applications and cannot be abstractly fused with modern technology. The above-listed approaches will help develop a practical approach to traditional wisdom and modern technology in natural resource management.



# PARTICIPATORY RURAL APPRAISAL (PRA)

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## *"Community Wisdom: PRA in Pwani Village"*

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Dr. Ayieko presented a summary of the process of participatory rural appraisal, given below. It resulted in a lively discussion.



*Dr. J. O. Ayieko, PRA  
Project Egerton University*

**W**hat is Participatory Rural Appraisal? PRA builds on earlier approaches to community assessment, such as Rapid Rural Appraisal, and offers a new means to help local communities help themselves. It is a methodology that mobilizes communities. The virtue of PRA is that it provides a way of using information villagers already have. It systematizes this data to mobilize villagers to

solve their own problems. It also attracts external assistance from extension officers, locally-based nongovernmental organizations, and government and international agencies.

In fragile and arid ecosystems, land pressures have been rising, land use changes accelerating, demand for water increasing, and consumption of fuelwood escalating. Given this and other demands on the resources, development efforts to sustain basic support systems in Africa have been falling short of the desired goals in much of the continent.

Part of the dilemma lies in the top-down approach to development. The failures of this approach are well-documented in pub-

lications such as Our Common Future<sup>4</sup>. Development failures have been particularly dramatic in areas of environmental management, where adverse impacts on soil, water, and trees have weakened Africa's long-term ability to feed and clothe itself. Further, rural communities for a long time have played no role in making decisions that affect important aspects of their political, socio-economic, and ecological systems.

The PRA approach assumes that popular participation is a fundamental ingredient in project planning. It fosters locally maintained institutions and technologies as well as sustainable economic, political, and ecological practices. This approach builds on the premise that individual rural communities reside in discrete ecosystems or micro-zones (having to do with rainfall, soil, elevation, vegetation, etc.) that require a unique combination of farm, woodland/grassland, soil, water, and health management. PRA further assumes that community residents have a good working knowledge of their ecological and development needs but not necessarily the means to systematize this information or mobilize the community to take action.

PRA uses multi-sector teams to join with village leaders to assess village needs and priorities and then create village resource management plans. The plans become the basis for action in the communities. They enable local institutions, government units, and NGOs to cooperate. PRA, drawing upon knowledge and skills already known in the village, creates a setting in which local residents exchange information with one another and the local governmental officer; it provides a structure for local aspirations and goals to be expressed and implemented; it provides ranked lists of village project activities that

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<sup>4</sup> World Commission on Environment and Development, *Our Common Future* (New York: Oxford, 1987).

funding agencies can support; and it sets in place a plan that village leaders and institutions can implement and sustain.

PRA normally has eight steps. These are gathering spatial, temporal, social, and technical data; synthesizing and analyzing the data; prioritizing problems; prioritizing opportunities to resolve problems; ranking opportunities; preparing a Village Resource Management Plan (VRMP); adopting a Village Resource Management Plan; and implementing it.

**EXAMPLE:**

*The Participatory Rural Appraisal team from Egerton University in collaboration with local technical and extension officers carried out a PRA village resources assessment for the Pwani Village, Njoro Division, Nakuru District, Kenya. The goal was to enable the community to assess existing resources and their potential for development. The findings from the data collection exercise indicated that Pwani residents knew a great deal about their community. They were, however, generally unaware of quantified information on, for example, the rates of vegetation loss and other aspects of environmental degradation. They were also weak in anticipating the economic and technical feasibility of proposed solutions and uninformed about ways to find technical and financial support.*

*As a result of the appraisal, the community determined that the highest priority problem was water. The group then adopted a Village Resource Management Plan (VRMP) for water and natural resources. They constructed a dam and water tanks and renovated a cattle dip. They used the Participatory Rural Appraisal approach throughout.*

Many consultation participants had experience in PRA. The discussion centered on several themes. One was, "How do we approach/treat/avoid the government during this process?" One consultation participant had a project derailment because a chief became involved. There was a general consensus that "politicians are enemies of development." Politicians want to be signatories of projects and, particularly during election time, to take credit for the project. The wise development worker either obtains their blessing or doesn't do PRA during election time.

Another observation was that PRA is a tool to help a community define what project is suitable for a particular area. As a development worker, one needs to warn the community when doing PRA that it is an assessment process only; it does not necessarily mean that outside funds will be brought in for the project. Another participant, however, stated that PRA is strenuous for the community. A development agency should not do a PRA unless it has something to offer the community. Yet another participant believed that a community can always do something as a result of PRA, even without funding; in other words, having an action plan is better than not.

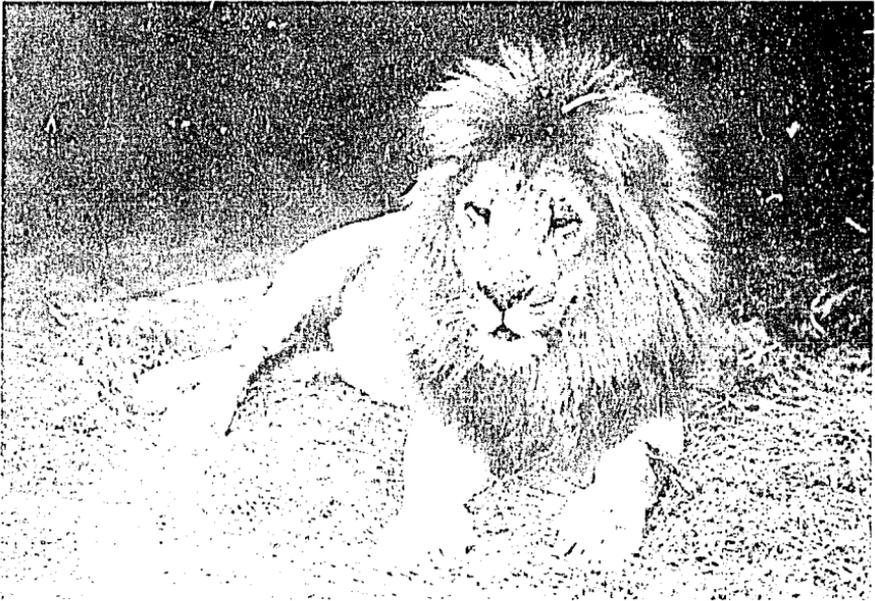


# TRADITIONAL WISDOM IN KENYA, TANZANIA, UGANDA

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CODEL requested three papers to be written on traditional wisdom in Kenya, Tanzania, and Uganda. Because of the importance of these papers in understanding traditional wisdom in each of the three countries, they are reprinted (with only minor editing) in full.

## ~ KENYA ~



Credit: Neg. No. 127971. Photo by Martin Johnson. Courtesy Department Library Services, American Museum of Natural History

“In the Kikuyu tradition (Kenya) the earth constitutes a necessary tie between the living and ancestors, between the living and God. It is a sort of sacred covenant.” (Missionaries of Africa Report, March/April 1990)

# *"The Role of Indigenous Wisdom in Natural Resource Management: An Overview of the Reality in Kenya in Relation to Indigenous Traditions and Natural Resource Management"*

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*Mrs. Phoebe A. Omondi,  
Chako Enterprises  
Development*

## Introduction

God's creation was perfect. Everything was plentiful and ensured. However, humans over the years have trampled the creation to their detriment. They have disturbed the ecosystem through forest destruction, construction of concrete buildings, production of synthetic garbage, and making wild animals tourist attractions and thereby opening up natural resource areas to lodges and motor vehicles. We are crying foul in Africa. We are therefore looking back to our indigenous knowledge and wisdom.

## The Overview

The book of Genesis describes creation. The earth, the seas, plants, animals, light, and darkness came into being. "Let the earth bring forth living creatures according to their kind." Then God created man. Everything God created "was good." Man took control of the earth thereafter, and the earth has over the years changed according to man's whims. Man has lost the moral responsibility of preserving and conserving God's creation. In his quest for development, power, wealth, and artificial beauty, mother earth has been tampered with. The prophet Isaiah said,

“The earth mourns and withers, the world languishes and withers; the heavens languish together with the earth. The earth lies polluted under its inhabitants; for they have transgressed the laws, violated the statutes, broken the everlasting covenant. Therefore, a curse devours the earth, and its inhabitants suffer for their guilt; therefore the inhabitants of the earth are scorched, and few men are left. [24:4-6].”

Kenya, like many countries in this world, has had indigenous traditions that encompass knowledge and wisdom. The traditions played vital roles in different communities in upbringing and social systems, and in the use and management of natural resources. The traditions also helped people depart from this world. The following is an enumeration of some of the beneficial roles of indigenous knowledge generally:

- Spelling-out Do's and Don'ts (taboos);
- Providing checks and balances;
- Sanctifying life, thus ensuring continuity;
- Providing communication channels (folk media, songs, dances, tales, games, proverbs, ceremonies, and theater). Folk media provided fora for communities to listen to each other. Examples are theater and storytelling among the Luo and Pokot. Storytelling went on in *duol*<sup>5</sup> and grandmothers' huts;
- Inspiring the creation of naturally beautiful objects (handicrafts, huts, fences);
- Benefitting communities through the practices of traditional medicine men and women (bone setters, birth attendants, etc);

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<sup>5</sup> *The word duol* means the hut of the male head or owner of a Luo homestead. It is conspicuously built in the homestead, and all the male members of the homestead (sons, grandsons) congregated in it for meals, socialization, storytelling, and important meetings. Very few *duol*, if any, still exist in the community. The Luo are an ethnic community from Nyanza Province in Kenya and the language they speak is called Dholuo. — [Note courtesy of Phoebe A. Omondi]

- Ensuring sustainability;
- Providing a knowledge that is replicable and participatory;
- Invoking beliefs and rituals;
- Ensuring continuity of natural resources;
- Cultivating moral responsibility based on appreciation for natural resources.

Some of this indigenous knowledge and wisdom is now commercialized due to the influence of modern values, including a cash economy and modern technologies. An example is the Kenyan *kiondo* [bag], now patented in Japan. Although the *kiondo* remains a foreign exchange earner for Kenya, its future may be at stake. Made from sisal (a drought resistant crop growing in Machakos, Taita, Kitui, and Muranga), it must compete with *kiondos* made from Japanese synthetic material. Several years ago a lot of sisal grew in Nyanza Province and was used to weave baskets, make table mats and ropes, build hut roofs, and so on. Today we hardly see sisal in Nyanza, not even as demarcations for *shambas* [household fields]. What happened? In Taveta and Kilifi sisal is growing in estates for export and factories.



*Sisal drying in Kenya*

Credit: Neg. No. 312899. Photo by W. J. Morden. Courtesy Department Library Services, American Museum of Natural History

Indigenous knowledge and wisdom is vulnerable in the modern world. It is not documented and is susceptible to many aspects of modernization. The breakdown of social systems, individualism, commercialization, and opening up of communities through roads, dams, and wells all dilute traditional wisdom. Indigenous wisdom competes with modern technology in the media. Commercials announce new innovations in medicines, soaps, detergents, creams, and foods. People are pressured to buy what they don't need and aspire beyond their "current" modern life.

Indigenous knowledge and modern technology are with us. The natural resources are ours. We must therefore take up the challenge of ensuring that harmony and sanctity of life in natural resource use and management is restored in perpetuity. We have no right to destroy what we cannot create.

### Land Use

In Kenya most indigenous and traditional communal land ownership has been replaced by individual ownership. This has been made possible through the government policy of demarcation, purchase, and "giving." This has led to fragmentation and overuse of individual land holdings, and subsequent degradation, poverty, and helplessness.

By contrast, the "strength in numbers" in communal ownership provided the ability to lobby against unwanted encroachment or development. This is no longer so. Trespassing and ethnic clashes have come into play. The recent clashes in the Rift Valley, Nyanza, and Coast and Western provinces may lend authenticity to this school of thought. In urban areas land left for public utilities is now being allocated to individuals at alarming rates. Markets, petrol stations, hotels, and restaurants have been

constructed in these public places. The natural resources that once stood in these areas have been replaced by concrete jungles.

### The Case of Uhuru Park in Nairobi

Nairobi is sufficient in illustrating this state of affairs. For a long time controversy prevailed over the construction of an ultra modern hotel at Uhuru Park, a botanical garden with natural beauty. It took one strong environmentalist, a woman [Wangari Maathai], to bring to the attention of the public the importance of safeguarding Uhuru Park. The current controversy about the parking lot meant for City Market is another case in point. In rural areas natural resources have been destroyed to pave the way for “development” programmes in the name of dams, molasses factories, and export cash crops.

Indigenous knowledge and practice of land use fostered sustainability. Intercropping, mulching, and use of farm/animal manure ensured life and productivity of the land. People grew indigenous crops for foods, medicines, and wood. Some food crops were always available from the *shambas*, for example, *osuga*, cowpeas, *mito*, cassava, sweet potatoes, and *dek*. Medicinal herbs grew in certain areas. These foods and herbs were harvested by plucking and digging out tubers and roots. In this way, the species continued to flourish and to be harvested again and again. Harvesting food crops from other people’s *shambas* was mutually acceptable. Individuals who, for one reason or another, could not provide for themselves benefitted from other community members’ farms. At harvest time, some food crops were left for the hungry and passers-by. Disadvantaged people were enabled to live among other community members in this way. Modern individuals have no room for this.

Encroachment into forest zones and reserves for commercial purposes is devastating. Felling of trees for charcoal and other wood products, as well as cash crop production, and development of tourist lodges and hotels have been a sure way of changing the face of this earth. This has had negative impacts on the land. Forest destruction means the end of medicinal herbs, diminishing of water catchment areas, change of rainfall patterns, exposure of soil, and hence the warming of mother earth. Religious and spiritual activities that had been performed in forests are also interfered with.

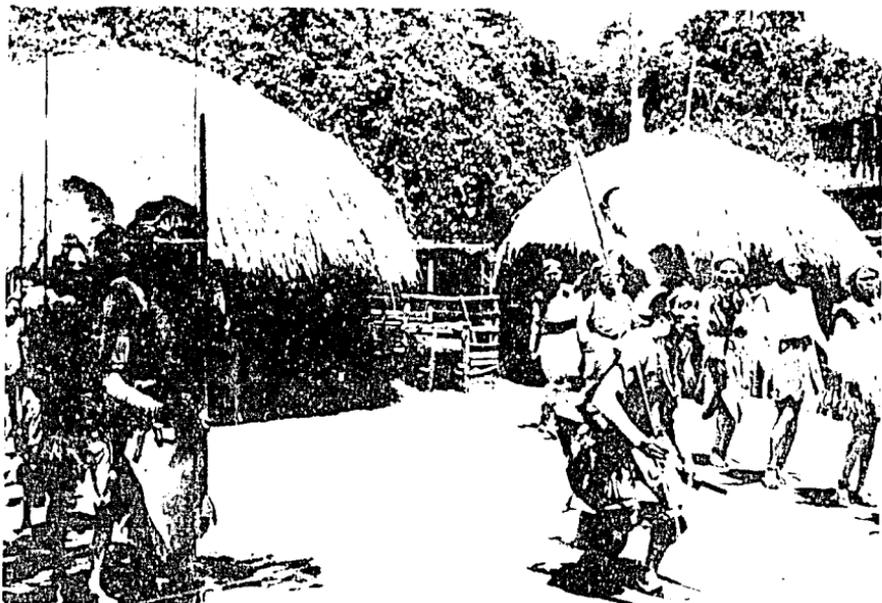
In Kenya the Loita Naimana Enkiyo enclave is an example. Plans are underway to move the Masai from the area to give room for development of modern tourist activities. The life of the indigenous Masai who live here will never be the same again. Their water source and pastoral life will diminish in the long run.

### Suggestions

In conclusion, the following suggestions are given in an effort to sincerely and practically improve the current gaps between indigenous knowledge and its application and modern technology in Kenya.

- Listen to the people and learn their indigenous knowledge and wisdom. The mode of transmission may vary from region to region and at specific knowledge levels. Some of the indigenous media, such as folk media, may be revisited. Folk media is currently being used in other modern development programmes to implement modern technologies, as for example in family planning.
- Document indigenous knowledge by original authors in relevant languages and media. Identify and employ the aged persons in this exercise.

- Encourage people to appreciate, use, and promote indigenous knowledge. Recognize families and individuals who are knowledgeable.



*Traditional Kikuyu dancing*

- Give feedback from research findings on indigenous wisdom and practices.
- Involve people in consultations and proposed plans.

These suggestions are what fusion of traditional and modern knowledge is all about.

# ~ TANZANIA ~



Credit: Neg. No. 127961. Photo by Martin Johnson. Courtesy Department Library Services, American Museum of Natural History

"The Wasafwa of Tanzania and other ethnic groups of East Africa have always planted on terraces to counteract erosion and retain the good soil. These techniques appear more adapted to the nature of the soil than does costly modern equipment that often causes upheavals and is detrimental to the crop-raising quality of the land.

Agricultural economy in Africa was not motivated solely from the criterion of production and gain, so dear to our modern marketing methods."  
(Missionaries of Africa Report, March/April 1990)

## "Overview of the Reality in Tanzania"

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*Mrs. Mackrine N. Rumanyika,  
Arusha Diocesan  
Development Office*

I will give several examples of practices of Tanzanian tribal groups. These are only a few of the one hundred and twenty or more tribes in Tanzania. They all have a wide variety of customs, areas of knowledge, and types of expertise.

### The Masai

The knowledge of the Masai is geared to cattle breeding. However, the Masai suffer from the effects of drought and land reallocation, making it difficult to find sufficient grazing land for their cattle. They have no experience in preparing and growing crops. They practice polygamy, as demonstrated by a certain family in Loswaki. The husband has fifteen wives, the youngest wife is fifteen years old.

The married women still have to be independent; they build their own houses, care for children and cattle. But these women are not allowed to sell a cow so as to feed and clothe their children; the husbands make all decisions. The father decides whom his daughter will marry; even if her mother disagrees, she can do nothing about it. Men have the last say in everything concerning the families.



*Caring for the Cattle, Olgeri River*

Credit: Neg. No. 117834. Photo by James L. Clark. Courtesy Department Library Services, American Museum of Natural History

## The Chagga Tribe

In the Kilimanjaro region the Chagga tribe is very different. Some ancient practices, like polygamy, were abandoned due to Christianity, brought by the missionaries over one hundred years ago. Chaggas are mainly agricultural people but also keep cattle for milk and meat. They depend on bananas for their main food, and their local brew (*Mbege*) is also made from bananas combined with millet (*ulesi*). Work is divided by gender.

During puberty, the men are responsible for training the boys about how to behave as adults, along with the responsibilities they will carry. The women are expected to do the same for girls. Sometimes men and women share work. During planting time a group of about ten families will cooperate, everyone doing the work for one family each day. The women of the family whose *shamba* is being worked on are responsible for providing food and the local brew for everyone that day. Should it be too late for planting when the last family's turn comes, the other families will give them food. Both parents discuss the suitability of a husband or wife for their children. For instance, they will persuade their son that a particular girl is hard-working and will make a good wife. In the past a girl had to be a virgin on her wedding day.

## Traditions of Maize Preparation

An example of traditional maize preparation comes from the Hehe or Bena tribes from the Iringa region in the southwest of the country. The Hehe use a mortar and pestle, pounding until the husks are separated and discarded. The kernels of corn are soaked in water for two or three days, then washed and dried in the sun, then pounded again with pestle and mortar until the resulting powder can be sieved. The sieved powder is used as flour and the remainder cooked for a long time; with the addi-

tion of flour it is made into a grainy *ugali*. The Hehe prepare millet in the same manner as the Chaggas.

The grinding stone varies among different tribes. The useful-



*Traditional corn grinding, Kenya*

Credit: Neg. No. 240958. Photo by Carl E. Akeley. Courtesy Department Library Services, American Museum of Natural History

ness of the modern grinding mills depends on the traditional farming methods used by the local people. For if the crops fail, modern technology is useless.

Within the past fifty years in the Kagera region some tribes have made grinding machines out of wood and thin steel bars and nails.

This has become a modern machine operated by men and powered by either diesel or electricity.

Since time immemorial the Haya tribe in the Kagera region (west Lake Victoria) used grinding stones for flour. Mortars and pestles are commonly used for crushing dried cassava, shelling nuts, and grinding coffee in some areas where it is a cash crop. Mortars and pestles are made from hard stones, mostly found in the rivers. If they cannot be found, sometimes steel but more commonly wood are used.

The request for help in providing grinding mills [the speaker is responsible for a grinding mills project run by the Arusha Diocesan Development Office (ADDO) and supported by CODEL] came originally from the local women themselves.



*Demonstration by Mrs. Rumanyika of use of mortar and pestle*

Women had organized into groups and collectively saved money for building costs. Their representatives then came to ADDO, requesting support of their project through consultations, loans, and advice. The women are involved in all stages of the project from the start. The grinding mills are managed by the women's groups. Initially, the women needed quite a lot of support: seminars on various subjects, in particular maintenance of machinery, accounting, bookkeeping, and banking, as well as encouragement to set money aside for essential running costs and repairs. As the women have become more experienced, their need for ADDO's support lessens.

So far, the results of the project have been very positive. Women's burdens have been eased. (Handgrinding or pounding are very tiring and time consuming.) The project has also raised their self-esteem, giving them confidence to consider new projects. For instance, one group is planning to buy a tractor. The project has improved the nutrition of the families, and the women's status rose as the men saw they are able to run the project successfully and independently.

## One Final Suggestion

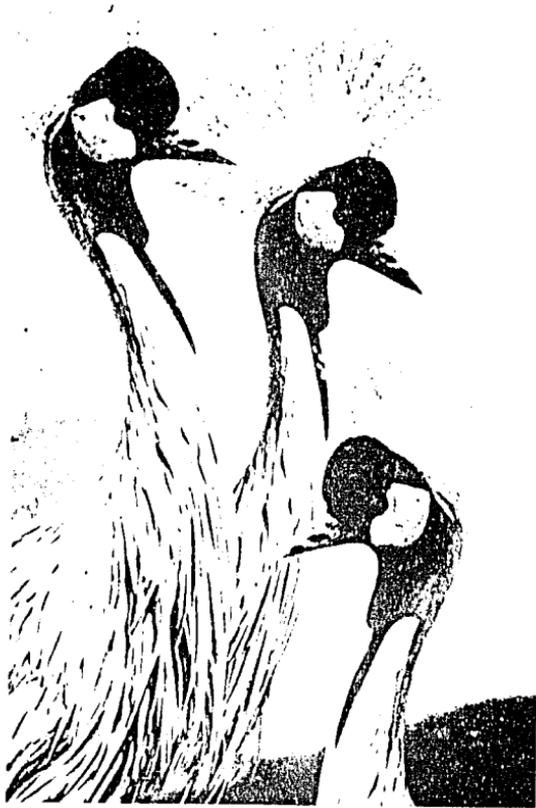
Research could help Africans themselves determine what is negative or positive about traditional wisdom, so as to select the best traditional practices and apply them.



*Women grinding corn*

Credit: Neg. No. 211463. Photo by Carl E. Akeley. Courtesy Department Library Services, American Museum of Natural History

# ~ UGANDA ~



"When the missionaries first arrived in Africa, and for many years afterwards, they were struck by the Africans' respect and veneration for the earth. Married to nature and environment since their childhood, Africans regarded the earth as much more than the good agent that brings forth food and abundance. With the earth they had established a sort of sacred partnership, often strengthened by the bond of sacrifices." (Missionaries of Africa Report, March-April 1990)

*"An Overview of the Reality in Uganda with a Focus on Indigenous Traditions and their Relationship to Natural Resource Use and Management"*

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*Mrs. Helen Gakwaya,  
YWCA of Uganda*

Uganda lies astride the equator, extending from 4 degrees N to 2 degrees S and 31 degrees E to 35 degrees W. It has a typical climate with an annual mean temperature of 22 Centigrade and annual rainfall average of 1180 mm (Kampala figures). It shares borders with Sudan in the North, Kenya in the East, Tanzania and Rwanda in the South, and Zaire in the West. The total area is 241,038

sq. km of which 43,942 km is swamp and water.

The population is about 17 million, of which 50.9 percent are female, with an annual growth rate of 2.5 percent (1991 census figures).

Uganda has about fifty tribes with differing cultures and traditions, and every society has values and beliefs on the basis of which actions are judged. About 90 percent of the population lives in the rural areas and engages in agriculture, both crop and animal production. Agriculture provides 65 percent of the Gross Domestic Production (GDP).

Uganda is endowed with abundant natural resources. These include land with fertile soils, parts of which are covered with forests and other vegetation. Uganda is also blessed with water bodies (lakes, rivers, swamps). There are park reserves inhabited by wild animals, including lions, elephants, and mountain gorillas.

However, all these natural resources are continually being exploited, more so because of the population growth, as well as expansion of the agriculture and livestock raising and commercial exploitation of forest products and wild animals.

Indigenous systems that used to protect natural resources are no longer practiced. Communities avoided over-exploitation of natural resources through their strict adherence to traditional systems, laws, beliefs and taboos.

## **Land**

Traditionally, land was privately owned, and other community members had user rights to it. This sense of communal ownership helped to protect the land from degradation.

Agricultural and pastoral communities lived in virtual isolation. Every community set up its own rules governing access to and usage of natural resources according to the extent of their ecological knowledge. Every head of household was entitled to an area of land suitable for agricultural or livestock farming that would adequately sustain the family.

Game was communally owned and protected. The cultural and economic values of wildlife were highly appreciated. Communal hunting was carefully planned and carried out expeditiously in the appropriate seasons.

According to totemism, a particular plant or animal species is believed to be associated with a specific group of people. This group was supposed to protect the totem as well as the surrounding habitat. Anything could be a totem, a monkey, lion, fish, mushroom, bird, or insect, for example.

## **Labor**

In the beginning labor involved only the family members (husband, wives, and children) and any relatives staying in that

household; later, families hired labor to produce for sale as well as for food.

In some Ugandan communities, certain jobs, such as sowing, harvesting, and cattle herding were done communally. But all communities divided labor according to sex, age, and social status.

### **Land Utilization**

People knew or could forecast weather patterns so that they knew exactly when to prepare land and plant. They held ceremonies before hoeing, sowing, and planting to secure the fertility of the soil. Some agricultural ceremonies included practices that fertilized the soil.

Ugandan farmers practiced crop rotation, multiple cropping, shifting cultivation, and mulching to control pests and diseases, maintain soil fertility, and control soil erosion. Often *Acacia albida* and ficus trees were interplanted with crops such as bananas and coffee to improve soil fertility and provide fodder, fuel, and building materials. Where possible, farmers implemented shifting agriculture, especially in pastoral areas, to allow soils and vegetation to rejuvenate and pests and diseases to die out.

### **Pests and Disease Management**

Traditional methods of combating pests and diseases in the fields included intercropping (e.g., sweet potatoes with beans or with insect-repellant plants), hand picking of pests (e.g., banana weevil and sweet potato caterpillars), and burning of the residual after harvesting and application of ash.

### **Food Utilization, Processing, Preservation, and Storage**

Looking very closely into most traditional meals, and the way

foods were prepared, we see that meals were balanced and nutrients preserved in cooking. Staple foods included *matooke*, millet, sorghum, sweet potatoes, or cassava accompanied by a source of protein and always with a type of green. Certain foods were associated with certain tribes. Sun drying was the method commonly used for produce. People could use papyrus mats spread on the ground to reduce contamination and to facilitate easy handling.

Cooking fires and smoke were also used to dry food such as maize, chilies, meat or fish and also to keep previously dried foods in good condition. The combined effect of heat and smoke not only maintains the product's dryness and acts as an insect repellent but also often improves the taste of the food. Beans were preserved by smearing them with anthill soil before drying.

Packaging and storage methods differed from community to community; some had very well-constructed granaries. Traditional packaging materials relied on locally available materials—leaves and fibers made into



*Sculptured granary, Uganda*

Credit: Neg. No. 211600. Photo by Carl E. Akeley. Courtesy Department Library Services, American Museum of Natural History

items such as baskets, clay pots, wooden jars, and boxes. Calabashes and gourds were also commonly used. It all depended on the suitability for the item to be stored, whether ground nuts, beans, smoked fish, or dry

vegetables. People made basket silos out of elephant grass or reeds and then plastered them with mud or cow dung, making them resistant to insects and more durable.

### **Forests and Trees**

Forests were one of the most important natural resources in Uganda. They now cover 5 percent of the land surface, so communities attach great importance to this natural resource. Traditional systems insured the preservation of the forests. In some communities forests were sacred, while traditional healers used them as their laboratories. In neither case could the forests be exploited.

### **Fuel**

People knew which trees were best for fuel. This meant a knowledge of which trees burnt more slowly, dried faster, imparted aromas into foods, burned more brightly, and grew faster. People understood fuelwood conservation, though they used the traditional fire stove.

### **Medicine**

Certain types of trees were used for medicine and others for construction purposes. In Uganda the ficus tree was a very important tree culturally; it provided clothing both for the living and the dead, and it was not supposed to be felled. Certain trees were sacred and had strange shapes. People feared them and left them as they were. Burial sites were represented by large trees planted by grave sites at the time of burial and always protected thereafter.

### **Wetlands**

In Uganda wetlands include lakes, rivers, swamps, and springs. These provided water for many purposes, including

domestic use, irrigation, rice production, fish (the cheapest protein source in Uganda), materials for craftwork (e.g., papyrus, reeds, and thatch grass for houses), and transport. They support a high concentration of wildlife.

Traditionally, water for domestic use was collected from communally-owned springs. Set rules governed their maintenance and protection. People fetched water with clay pots stored in larger-sized clay pots. During the rainy



*Women carrying water, Uganda*

Credit: Neg. No. 211663. Photo by Carl E. Akeley. Courtesy Department Library Services, American Museum of Natural History

seasons traditional water harvesting techniques were applied, usually catchment systems made from roofs, trees, and banana plants.

Farmers took livestock to isolated drinking areas, set apart from water sources used for domestic purposes, in order to protect water from contamination by animal wastes. Some spring wells were regarded as places where ancestor spirits lived; it was taboo to wash or bathe from these wells. This practice also protected the well from contamination.

In some communities like Buganda, swamps were privately owned. During the dry season the swamps would be put to use. During the rainy seasons they were flooded and abandoned, in the process regaining their fertility.

## **Conclusion**

Some communities in rural areas still maintain their traditional ways of life. The above-mentioned traditional systems, beliefs, and taboos were normative. In strictly adhering to them, Ugandans effectively preserved natural resources.



# CLOSE AT HAND

## *"The Situation of Lake Victoria"*

*Dr. Herick Othieno,  
Appropriate Technology Section  
OSIENALA - Friends of Lake Victoria  
(picture not available)*



*Several consultation participants on the shore of Lake Victoria*

The Conference took place on Lake Victoria. An update on the situation of the lake was provided by Dr. Herick Othieno. Lake Victoria is dying because of a number of environmental factors. The problems are easy to see; what are the solutions? According to Dr. Othieno:

**O**SIENALA (Friends of Lake Victoria) is an NGO based in Kisumu. Its primary aim is to rehabilitate the lake. Lake Victoria is the second largest fresh water lake in the world, with borders shared by Kenya, Tanzania, and Uganda. There is growing concern that the lake might die. Possibly it is no longer going to be the largest fresh water lake but will join the ranks of salty, badly polluted water bodies.

The three major problems affecting the lake are:

(1) **Pollution**—A survey done in the Kenyan area revealed that each shoreline town in Kenya discharges raw waste into the lake. Further, sugar factories in the region dump chemical waste

directly into the rivers that feed the lake; the smell is terrible, and dead fish float on the surface. The areas that surround the lake have a high potential for agriculture. But the growers use chemical fertilizers and pesticides that run off into the lake. Once the fertilizers and waste reach the lake they create an organic “soup” that supports a proliferation of an alien, the South American water hyacinth, and of blue-green algae. This plant growth decreases oxygen in the water needed by the fish. In some cases fish can suffocate.

(2) **Reduction of biodiversity**—There used to be over thirty species of fish in Lake Victoria. They disappeared not only because of the introduction (by British colonists in the 1960s) of exotic species like Nile perch but also because of poor fishing practices and overfishing on the part of villagers living around the lake. For centuries African fishermen relied on the native tilapia. Now the Nile perch has become a cash crop. The Nile perch eats tilapia, so the native tilapia have died out. A further problem is that while tilapia could be sun dried, Nile perch must be smoked. Cutting down trees around the lake to prepare the perch has deforested the region. The people around the lake are now reliant on Nile perch for food; yet in this dependency they are destroying the environment in which they live.

(3) **Soil degradation**—For a long time the communities around Lake Victoria have been considered to be lazy and not motivated to carry out private business. This was not always the case; earlier a priority was education, and therefore most of them were easily absorbed into white collar jobs. To date, still many men work in towns leaving the women behind to exploit local resources. The women do not use these resources in a sustainable way. For energy, they tend to use whatever is available

and accessible. Those who depend on income from the men use paraffin or kerosine. If this is not available everybody fells trees for fuel. This process has been so intensive that many areas do not have fully-grown trees, particularly indigenous species. Soil degradation and erosion have occurred.

OSIENALA's goal is to sensitize communities in Kenya, Uganda, and Tanzania to preserve and sustainably use the lake's resources for their own development. A crisis in which OSIENALA played an important role revealed that the communities are responding well to OSIENALA's call: the government gave licences to trawlers because of the revenue gained from the sale of Nile Perch. However, the trawlers not only destroyed the nets of small-scale fishermen but they also indiscriminately caught all types and sizes of fish. The lake suffered, and the small fishermen also suffered. To resolve the conflict between the trawlers and small-scale fishermen and save the lake, OSIENALA launched a campaign to have trawling abolished and other fishermen restricted to the use of the correct fishing nets and methods. The government finally banned trawling in the lake. OSIENALA then brought the fishermen together through seminars in which the fishermen themselves resolved to disallow the use of small nets. The situation became peaceful. OSIENALA has also suggested, through a Community Action Plan, other activities in which the communities around the lake could be engaged in order to relieve the pressure on the lake's resources. These projects are to be implemented as funds become available.

OSIENALA, only two years old, has a membership of about 1,500 and an executive committee elected by the members. It is very much willing to work with other organizations on proposal writing and on various aspects of technology, including rain water harvesting and purification systems. Its particular concerns are

women, environmental advocacy, energy, and rural development. OSIENALA believes that people themselves, with training and encouragement, should be able to take care of the environment.

Following Dr. Othieno's presentation, Dr. Eng. Moses Odhiambo, a food technologist from Maseno University, spoke of his work on the affect of chemicals in the lake. He said that people who think they are dying of AIDS are actually dying of the water they are drinking. The match box factories are killing Lake Victoria, making it very smelly. Sugar and fish industries release detergents and disinfectants into the lake. The solution? Bring awareness to the people, monitor the factories, and biodegrade industrial effluents before discharging.

### *"Response" from Dr. Caroline Njuki*

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Dr. Njuki gave the following impassioned response to the presenters:

*I would like to say in summary that Africa's situation needs our special attention. Money for development programs for the continent is scarce. And donors who used to give so generously ask, What has Africa done since independence? I believe that the solutions to some of our problems lie within ourselves; we need to mobilize our communities so that we can put up schools and clinics, provide clean water sources, and so on. Over the years we have come to believe that the West will rescue us. Unfortunately, the economic pie is dwindling worldwide, in the West, too. Let's remember that our survival is going to depend on us. Please put the contacts you have made during this consultation to good use.*



# FOOD, FUEL, AND TRADITIONAL WISDOM: THE PILOT PROJECTS

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"Of the many invaders that landed on Africa's shores over the centuries, probably few have had greater long-term impact than crops brought in from other continents - notably rice from Asia and maize from the Americas. In a macabre twist, maize supported a huge increase in the African population, thereby providing more slaves for New World plantations. The reverberations of this are, of course, still being felt. In addition, the continent's current surge in population, with its potentially disastrous ecological results, is traceable in some respects to these changed cropping patterns."<sup>6</sup>

One purpose of the consultation on traditional wisdom was to initiate four pilot projects that combine traditional wisdom and modern technology in natural resource management. The pilot project implementors refined their plans during the consultation. Each consultation participant, therefore, has a stake in these pilot projects. They are to run for two years. At their conclusion, a report on traditional wisdom and the findings of the pilot projects will be written.

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<sup>6</sup> Introduction to Bede N. Okigbo, "Sustaining Africa's Genetic Riches," *Work in Progress of the United Nations University* 14 (December 1993):7.

The following summarizes the pilot project activities:

## KENYA

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**Project:** “Organic Farming: How Farmers Fuse Traditional Wisdom with Modern Technologies”

**Organization:** The Kenya Institute of Organic Farming (KIOF) was launched in 1986. Its goal is to work with small-scale farmers to bring awareness of ways of producing high-quality produce at good yields while at the same time protecting the environment and improving soil fertility.

**Project Goal:** To investigate how farmers can combine traditional organic farming methods with modern technology to improve farming in their communities.

### Objectives

- Document both traditional and modern agricultural methodologies;
- Implement combined (traditional and modern) farming methods with smallholder farmers.

## TANZANIA

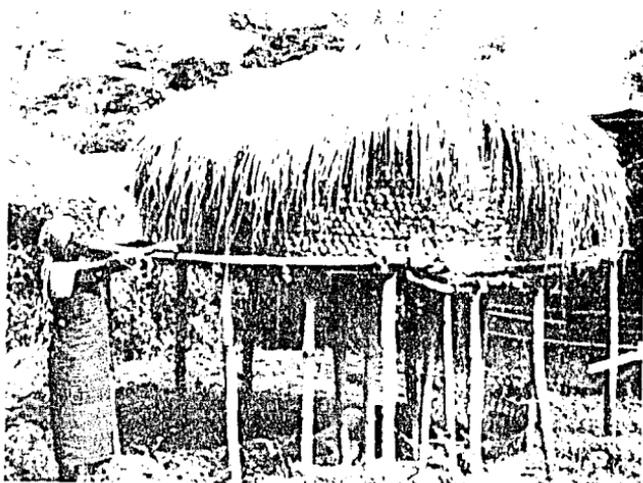
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**Project:** “Production and Utilization of Indigenous Vegetables”

**Organization:** Technoserve has more than twenty-six years’ experience in creating viable, rural agricultural enterprises in Africa, Latin American, and Central Europe. In Tanzania, Technoserve has promoted small-scale milk processing enterprises as well as maize and horticultural programs.

**Project Goal:** To improve the production and consumption of nutritious indigenous vegetables in the Hai District of Tanzania.



*Maize storage*

### **Objectives**

- Teach women business management skills;
- Convey the nutritional value of indigenous vegetables and the need for their consumption;
- Implement the appropriate methods of cultivation and preservation of indigenous vegetables and seeds;
- Enable women to grow and market indigenous vegetables and preserve seeds.

## *UGANDA*

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**Project:** “Banana Plantation Research Project for Orphans”

**Organization:** The Bannakaroli Brothers are a Ugandan Catholic religious congregation founded in 1927. With education as their main



Credit: Neg. No. 211483. Photo by Carl E. Akeley. Courtesy Department Library Services, American Museum of Natural History

thrust, they teach in primary, secondary, technical, and teacher training schools. They work toward self-sufficiency in food production and business skills. In the Rakai District of Uganda, the Brothers have been active in working with children orphaned by AIDS. There they have relied on bananas as the staple food.

**Project Goal:** To learn to grow bananas using traditional and modern methods, while eradicating the banana weevil.

### **Objectives**

- Investigate and document existing traditional knowledge and modern practices of banana growing, including pesticide use;
- Implement combined technologies for banana growing;
- Establish a demonstration plot where orphans can be taught these methods;
- Propagate weevil-free banana suckers.

**Project:** “Promotion of Charcoal Briquettes and Improved Charcoal Stoves”

**Organization:** The YWCA of Uganda was founded in 1952. Membership has grown from 2,000 in 1968 to over 500,000 today. The organization assists women and girls through projects and programs aimed at raising their educational, social, health, and economic standards, thus enabling them to play their rightful roles in the development of Uganda.

**Project Goal:** To curtail the ever-increasing consumption of fuelwood.

## **Objectives**

- Train women in the skills of making charcoal briquettes from agro-wastes (e.g., banana peelings);
- Promote the use of these briquettes as an alternative source of energy;
- Promote production and use of improved charcoal stoves;
- Improve the standard of living for women by generating income.



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## WHAT DOES THE SECRET SIGNIFY?

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### *Consultation's Summary*

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After five days of discussion, the consultation participants concluded:

**I**n Africa one is left hanging constantly between worlds. The evidence is all around us. The modern world provided hospital care but also introduced unemployment. Traditional communities were replaced by nuclear families. Homelessness, children without parents, and social disintegration have increased.

We Africans seem to be increasingly alienated not only from the wisdom of past traditions rapidly disappearing but also from the benefits modern technology was supposed to introduce into a new, modern African society. Not only do we need traditional wisdom, but Africa will not develop adequately without it. The great tragedy of African "development" up until the present time is that it did not grow out of African roots.

The complementarity or compatibility of traditional wisdom and modern technology must not, however, be automatically assumed. Indeed, we must question seriously whether they can or even should be combined, as both systems are based on very different values and understandings of reality. While the modern worldview understands humans to be kings of the planet, traditional wisdom sees humans in close relation to nature. If the contradictions in these value systems are not carefully evaluated and understood, the resulting attempted combinations of traditional wisdom and modern technology will be superficial at best and disastrous at worst.

Traditional wisdom is based on harmonious living in nature and in community. It focuses on health and wholeness. It under-

stands the well-being of individuals, communities, and the cosmos to be interconnected and interdependent. Traditional wisdom includes a great respect for the Earth and knowledge of the workings of nature. Modern technology introduced into a community must first be evaluated in light of these values.

At the same time, not all traditional wisdom is relevant or helpful in our time. Modern technology may help us identify traditional practices that in today's world are no longer helpful. In particular, "modern" understandings of human rights and equality may foster a reevaluation of traditional treatment of women and children.

Participatory Rural Appraisal (PRA) seems a helpful way of getting at a practicable combination of traditional wisdom and modern technology. Starting at the village level, it facilitates the local community's own naming of problems and allows them to call for whatever technology they deem appropriate. It is important that at the village level traditional wisdom be appreciated and valued and that modern technology not be seen as a panacea for the ills of a "backward" society. Africans have devalued what comes from Africa and desired what comes from outside. This was caused in part by colonialization and missionizing. This consultation has helped us to see this more clearly, as well as the destruction this devaluing of traditional wisdom has wrought throughout the continent on both societal and environmental levels. Africans need to go back to talk to elders; as most traditional knowledge is oral, they need to do this before it is too late.

Happily, there is some evidence of respect of traditional wisdom at work today in the development of Africa. Tanzania has an organization of people working with doctors using traditional wisdom to cure AIDS, and in some cases traditional birth attendants work with doctors.

Traditional wisdom needs to be tested against modern methods and fostered where ever possible. Concrete actions that should be undertaken include preservation and protection of indigenous knowledge through a form of intellectual property rights; documentation about herbs and plants; policies for protection of types of trees and herbs; networking; vigilance about intellectual piracy; and the writing down of traditional wisdom.

A follow-up conference at the conclusion of the pilot projects should be held.

## *CODEL'S CONCLUSIONS*

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From the enthusiasm and response of participants, CODEL concludes that there is an urgent need for more consultations such as this one, where there is an in-depth information exchange. Participants asked, "Why aren't more people involved in reappraising traditional wisdom for development?"

CODEL realizes that, while there are a number of local and international NGOs appraising the role of traditional wisdom for development and natural resource management, a lack of cohesion exists. There needs to be formalized research and dissemination of information in this area among governments, local NGOs, and communities.

CODEL also concludes that, while some communities are aware of problems of environmental degradation, there still needs to be a lot of education and animation in communities to sensitize people to this issue.

The results of the four two-year pilot projects will give more information to disseminate to groups on the practical success of combining traditional wisdom and modern technology. At the end of two years CODEL will write a formal report on the results of the four pilot projects in combining traditional wisdom and modern technology for effective and appropriate natural resource management.

## *CONSULTATION CLOSING CEREMONY*

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A closing ceremony was held to the accompaniment of loud thunderclaps and torrential rains. Gifts were given. The district officer spoke about the importance of traditional wisdom, and a prayer circle brought this consultation to a close.



## Appendix 1

### CODEL CONSULTATION

### Fusion of Traditional Wisdom & Modern Technology in Natural Resource Management

Kiboswa Development Training Centre, Kenya  
March 13-19, 1994

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## Appendix 2

### CONSULTATION EVALUATION

PROGRAMME	# RESP	GOOD		FAIR		POOR	
		#	%	#	%	#	%
Clarity of information from							
(a) Resource persons	21	17	81	4	19		
(b) Facilitator	22	17	77	4	18	1	5
Relevance of consultation to							
(a) Your work	22	18	82	4	18		
(b) African development issues	22	18	82	4	18		
(c) Women	22	19	86	3	14		
Coverage of areas of your particular concern	14	9	64	5	36		
(a) Relevance of pilot projects	22	20	91	2	9		
(b) Choice of pilot project: adequacy of level of participation by delegates	22	16	73	5	23	1	4
Adequacy of correspondence from CODEL re: consultation i.e. instructions, registration forms, directions, information on consultation	21	16	77	3	15	2	9
Relevance of resource materials/handouts	20	15	75	5	25		
Accommodation	20	12	60	8	40		
Housing	22	12	55	9	41	1	4
Meals	22	7	32	12	55	3	13
Overall consultation	22	13	60	9	40		
Other Suggestions: • Keep it up; be blessed • Thank you • Another Centre, e.g., Cou, not here • Follow-up activities and networking • Very well conducted, although trip could have been better.							

## Appendix 3

### FOR FURTHER NETWORKING

#### Indigenous Knowledge Resource Centers in Africa

##### **CIKARD**

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and Rural Development

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##### **BURCIK**

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## **SARCIK**

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**Note:** A new resource is the *Indigenous Knowledge & Development Monitor*, a “publication of and for the international community of people who are interested in indigenous knowledge.” It is published three times a year; subscriptions are free. Editorial offices: CIRAN/Nuffic, P.O. Box 29777, 2502 LT The Hague, The Netherlands.

## Appendix 4

### EXECUTIVE SUMMARY

Impact of Indigenous Knowledge and Traditional Coping Strategies for the Prevention or Mitigation of Land Degradation and the Desertification Process in Africa  
(Pan-African Workshop sponsored by IDRC)

During 3-5 January 1994, over 30 specialists, from different regions of Africa, took part in a workshop held in Cairo that produced important results for the current global negotiations toward a Convention on Desertification and Drought. Participants included selected African negotiators, representatives from African NGOs, specialists from African research organizations, representatives from regional bodies in Africa, and international resource persons. Focusing on the 'Impact of Indigenous Knowledge and traditional coping Strategies for the Prevention or Mitigation of Land Degradation and the Desertification Process in Africa,' the Workshop produced the following recommendations that will be placed before the Convention negotiators.

#### Preamble

Indigenous knowledge as it relates to desertification processes, comprises a wide range of accumulated local experience about natural resource use and management techniques in both agricultural and pastoral systems, institutional and organizational arrangements, as well as beliefs and values. All these dimen-

sions need to be duly weighted and included in applying indigenous knowledge to development decisions and interventions at micro as well as macro levels.

Indigenous knowledge can be enhanced with the infusion of modern scientific knowledge. The challenge is to evolve the right mixes between indigenous knowledge and modern knowledge. This will require the creation of an enabling environment at national and international levels.

### **The Recommendations**

1. Government officials should duly take into account, in the development and implementation of policies, indigenous knowledge as well as the experience and developmental perspectives of local populations.
2. Government officials should also take all the necessary measures to protect, preserve and use indigenous knowledge by creating an enabling environment that includes the support of focal local institutions and the development of awareness programs. Sufficient funds should be made available for that purpose. Channels should be created to enable representative local institutions themselves to promote the importance of their local knowledge and insist that their knowledge is relevant despite processes undermining it.
3. Given the importance of combining traditional and modern knowledge systems, research should be carried on how adaptations and innovations are being made by local communities and outside agencies to analyze these processes and contribute to the development of appropriate hybrid knowledge systems and enabling environments.

4. It is an imperative that mechanisms be found for the effective involvement of local representative institutions in higher level decision-making processes. To facilitate such participation, decentralization of authority over natural resource use and management is a necessary condition. Equity and democratic principles should be applied in the empowerment of local representative institutions.
5. In designing research and local level interventions the cultural, ethical, spiritual and institutional aspects of indigenous knowledge systems should be given full consideration.
6. Recognizing the fundamental ecological, social, economic and cultural roles of traditional pastoral and agro-pastoral production systems, it is important and urgent that public authorities create suitable conditions and provide sufficient support to the local populations for their continued viability. This implies, inter alia, that:
  - a. political structures must develop new mechanisms to allow increased freedom of movement of people and herds in order to optimize the use of rangeland resources, including trans-boundary movement; and
  - b. development plans should include provision for the equitable and sustainable development of pastoral systems and rangelands.

7. Indigenous knowledge and its use in local contexts should be documented by the communities concerned for their own use, access and control. Data bases should be created at local, national and international levels with a clear view toward further use and development of that knowledge. It should be recognized, however, that indigenous knowledge can be location-specific and captures local processes as well as facts and that for this reason its standardization and replication elsewhere can be a complex undertaking requiring adaptation and assessment through participatory research.
8. Special consideration should be given to gender-specific roles, vis-a-vis resource management, with women being recognized as important custodians of indigenous knowledge and their views incorporated into decision-making processes.
9. Formal education systems are all based on modern scientific knowledge to the exclusion of indigenous knowledge and illiteracy has often been taken for ignorance. It is an imperative to develop, apply and fund curricula that include indigenous knowledge for all levels of education. To avoid the loss of local knowledge and skills it is indispensable to provide necessary support and improvements to informal education systems.
10. Adequate funds must be secured and appropriate projects and programmes adopted to ensure the implementation of the above recommendations.

## Appendix 5

### CODEL PUBLICATIONS

#### **Books:**

Environmentally Sound Small-Scale Agricultural Projects,  
Miguel Altieri

This valuable teaching aid presents environmental concepts as tools for planning agricultural projects. Enables people to make sound cost-benefit analyses of projected programs. Fully illustrated. (VITA-CODEL) 1988 Revised English Edition, French, Spanish

Environmentally Sound Small-Scale Energy Projects,  
Elizabeth Ann Bassan

Discusses basic environmental questions involved in small-scale energy development. Valuable teaching, extension aid. (VITA-CODEL) English

Environmentally Sound Small-Scale Forestry Projects,  
Peter Ffolliot & John L. Thames

Presents an introduction to the planning of small-scale forestry projects, particularly as they may be integrated with agricultural and other land uses. (VITA-CODEL) English, French, Spanish

Environmentally Sound Small-Scale Livestock Projects,  
Linda Jacobs

Details livestock management planning to minimize damage to the environment, or enhance available resources. (CODEL/Heifer/VITA/Winrock) English, French, Spanish

Environmentally Sound Small-Scale Water Projects,  
Juss Tillman

For people involved in small-scale development. A useful primer for individuals with only limited experience in this field. (VITA/CODEL)  
English, Spanish

Ecological Healing: A Christian Vision,  
Nancy G. Wright and Donald Kill

This book is intended to aid Christians in developing a faithful stance concerning respect for humanity and the environment. These themes are interwoven through an exploration of scripture, theology, international public policy, local community-based development activities, and the spirituality of indigenous people.

**Recent Workshop Reports:**

Organic Farming in Kenya: Report on a National Workshop for Kenya Nongovernmental Organizations. Kenya, 1990.

Technology As If Tomorrow Mattered: Report of the Conference on Appropriate Technology and Sustainable Development: Asian and Global Perspectives. India, 1992.

\*\* For a complete list of CODEL publications, write to:

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# About CODEL

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CODEL (Coordination in Development, Inc.) is an association of Catholic, Orthodox and Protestant organizations that respond globally to our Lord's invitation "whatever you do to the least of mine, you do unto me" through environmentally sustainable socioeconomic development.

The purpose of CODEL throughout the Developing World is to support training and other development activities identified by people of all faiths who have limited opportunities to participate in economic, social, environmental and political decisions that affect their lives.

The priority areas of CODEL's work are to:

- Provide a forum where members can strengthen relationships, share concerns, build consensus and work together to further their mutual goals;
- Work in solidarity with poor and marginalized people in the developing world to improve their quality of life and protect their natural resource base;
- Strengthen and expand a constituency that will advocate for and support sustainable development as a means to alleviate poverty and build equitable and just societies.