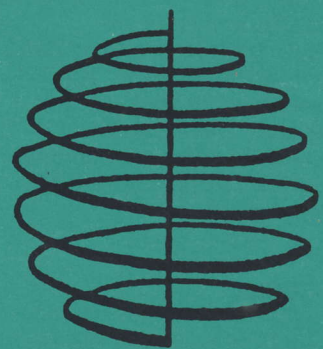


# Towards Sustainable Agriculture



Part One  
May 1988

Abstracts,  
Periodicals,  
Organizations



AGRECOL



ILEIA



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*Cover photo:  
With a diversified production  
system, farming can be made more  
sustainable to meet rising food  
demands.  
Photo: Chris Pennaerts, Studio 3.*

# Foreword

*Sustainable agriculture is now widely recognised as an essential precondition and priority for generating and supporting sustainable livelihoods in the tropics. Unlike more transient phrases and fashions in development, it must surely have come to stay. For the rapidly increasing populations of most rural areas in the Third World, there is no alternative to livelihoods based on agriculture, yet in many fragile environments they are at risk. A much more productive and sustainable agriculture is not just desirable; it is essential if immense and permanent human misery is to be avoided.*

*Fortunately, the technical and social means for enabling rural people to achieve sustainable livelihoods from their agriculture are now much better documented than a decade ago. Many professionals are, though, not aware of what is available, and many are unable to gain access to what has been published even when they are aware.*

*This useful compilation of an annotated bibliography of 45 major books, lists of 32 periodicals, 34 information centres, 5 international networks and 15 international institutions (Part One), and a bibliography of 254 further publications (Part Two), fills a need. It provides a good source of information about materials available and how to obtain them, as well as about useful contacts. It should be invaluable to those – whether working in government organizations such as research or extension services or in international organizations, donor agencies or NGOs – who need to know more. With the addresses given here, they can write off for further information.*

*I hope this compilation of sources will be widely available to practitioners in many organizations and to those who study sustainable agriculture, in whatever disciplines; and that, especially for those in Third World countries, it will be complemented by access to the books listed.*

April 13 1988

Robert Chambers

## About this publication

This publication is the result of a combined effort by the Information centre for Low-External Input Agriculture (ILEIA) in The Netherlands and AGRECOL DEVELOPMENT INFORMATION in Switzerland. It aims at facilitating the dissemination of information on sustainable agriculture approaches and at giving people involved in agricultural development in the Third World insights into the need and opportunities for sustainable agricultural development.

Both ILEIA and AGRECOL have been active in collecting, exchanging and disseminating information on sustainable agricultural approaches since 1981 and 1983, respectively. In the course of time, both organizations have built up a database which is regularly consulted by people who are committed at a practical level to agricultural development in the tropics, or who are preparing for this commitment. The demand for information exceeds the capacity of both organizations to satisfy it. We hope that this publication will create a self-help information service and consequently improve our capacity to handle the requests for information.

With the selection of the books we have tried to provide introductions into sustainable agricultural approaches or into aspects of it, without the pretention of completeness. The books are dealing with concepts as well as practical methods and techniques. The selected periodicals are regularly featuring articles on aspects of sustainable agriculture. From the selected organizations further information and documents on applied methods of agriculture for small farmers in developing countries may be obtained.

Part Two contains a list of 254 books dealing with aspects of sustainable agriculture. The titles have been given keywords, and addresses have been included to facilitate acquisition. Small libraries suitable for field organizations can be built up by using the lists. ILEIA and AGRECOL are prepared to assist organizations to build up a library on sustainable agriculture.

We intend to update these lists from time to time. You can help us to improve these publication by drawing our attention to missing or new publications, to changes of address, or to new initiatives in sustainable agriculture in the tropics.



# TOWARDS SUSTAINABLE AGRICULTURE

The terminology used for sustainable agricultural approaches is quite confusing. Different terms are in use, depending on the organization, such as eco-farming, permaculture, and ecological, regenerative, low-external-input or sustainable agriculture. Apart from a few differences in emphasis, they all mean almost the same thing. The nomenclature in use is not all that important.

## Why a new vision of agricultural development is necessary

Many agricultural systems in the tropics are presently in a state of ecological degradation. The productivity, stability and durability of these systems are being seriously threatened, thus endangering the continued provision of food. As a result of, among other things, population growth, the increasing need for cash to buy industrial products, pay for schooling, etc., and low prices for agricultural produce, the more traditional agricultural systems no longer satisfy the needs of the farming community. The production capacity is put under considerable pressure to expand and, as a result, traditional methods to preserve sustainability (fallow periods, maintenance of trees to protect the soil, provide shade, etc.) can no longer be used. Soil degradation and erosion take place and productivity declines.

On account of the low status of traditional farming methods within agricultural extension services, research facilities and the government and – as a consequence – within the farming community, indigenous knowhow is rapidly disappearing and is being replaced by conventional or Green Revolution methods in which the use of external inputs such as artificial fertilizers, pesticides, HYV-seeds and mechanization is regarded as essential. Although these agricultural methods have contributed to considerable yield increases in a number of countries, mainly in South and South-East Asia, most small farmers practicing rainfed agriculture have derived little or no benefit from them. In the more remote and marginal areas, the necessary external inputs are not available; where they are available, most farmers do not have the financial means to acquire them.

National governments are being increasingly compelled by lack of foreign exchange to restrict the import of these external inputs, especially since their costs have greatly increased in recent years. Green Revolution inputs and methods (e.g. monocropping, irrigation) are most effective under optimum conditions of soil, water and pest management. Research and extension have been mainly concerned with production for export and with those areas where production conditions are favorable. In the less favorable conditions under which most small farmers have to work, the efficiency of these inputs is low and the risks for the farmers are great. This makes their use less attractive. With the increasing ecological deterioration taking place in many parts of the world as a result of, among other things, greater variability of climate, the usefulness of these inputs is declining in many areas. Besides the economic aspects that make Green Revolution methods unattractive to small farmers and governments, there are also ecological aspects. The use of chemicals, HYV-seeds, monoculture, mechanization, irrigation, etc. may cause serious ecological damage (soil erosion, salinization, degradation of and drying out of the soil, impoverishment of the indigenous genetic resources, etc.) and may threaten the health of both the farmers and the consumers.

But already a new agricultural revolution seems to take place: Gene- and Biotechnology. The methods applied in Biotechnology involve herbicide-tolerant packages (e.g. 'coating' of sorgho, maize and cotton), tissue-culture (e.g. oil-palm, potatoes) and the artificial production and substitution of agricultural products (e.g. sugar, vanilla, cacao, pyrethrum). Genetechnology methods involve the manipulation of the genetic codes in plants, micro-organisms, animals and humans. Gene- and Biotechnological methods and its products will probably drastically change the face of agricultural production and socio-economic structures worldwide within the coming decade. The effects of this 'Gene Revolution' might be worse and more dramatic than the effects of the Green Revolution. It is in question

whether the Gene Revolution is in favor of sustainable development.

## Sustainable agriculture

In reaction to these developments, new agricultural methods are needed that fit in better with the economic, ecological, social and cultural/religious conditions of the farming community. They should retain the productivity, stability and durability of the agricultural systems without causing harm to the environment or threatening public health. They should also promote the economic and social independence of the farming community and ensure the provision of food. Such agricultural methods are often termed 'sustainable agriculture'.

Whether an agricultural system is sustainable or not is, in fact, determined by numerous factors. Not only are the agricultural methods used important, but also external factors such as international commercial policy, climatic stability, population pressure, national pricing policy, access to resources, research and extension, education, ecosystem degradation, political power of the peasants, the relationship between man and nature and, by no means least, poverty.

## Steps towards sustainability

To raise ecological awareness on the international and local level and to change the international commercial and political order is not easily achieved. Nevertheless, first steps towards sustainable agriculture can be taken locally. A low-external-input approach to agriculture may well be an important step in the right direction, especially in those areas where few external inputs are available and where social-political conditions are favorable. The preconditions for success of such an approach are that the development of local technology and its dissemination are undertaken by the farming community and that optimal use is made of local natural resources: climate, landscape, soil, water, indigenous vegetation and animals, and human resources such as labour, experience, skills and know-how. The use of external inputs such as mineral fertilizers, pesticides, HYV-seeds, irrigation and tractors is not excluded,





Photo: Chris Pennaerts, Studio 3.

but restricted as far as possible for economic reasons, in order to satisfy criteria of ecological sustainability and to enhance the health and independence of the farmers. Indigenous knowledge of the agro-ecological system, traditional methods of agriculture and local forms of organization from village councils and farmers' organizations to local government authorities: these are the starting points from which new technologies based on scientific insights and experiences in comparable situations can be developed. The role of research here will be more supplementary and stimulatory than has hitherto been the case.

#### Contributions to new approaches

Traditional methods of agriculture, principles from Western ecological agriculture and new insights into the ecology of soils, natural vegetation, insect population and so on have made a considerable contribution to the development of technologies that may be used in low-external input agriculture. Examples are:

- agroforestry, the integration of trees into cultivated fields or farming systems to improve soil fertility and microclimate, prevent soil erosion, and produce fuelwood, timber, fodder or edible products;
- integrated pest management, in which pests are countered by a mixture of preventive, mechanical, biological and chemical means;
- integrated nutrient supply, so that the soil is kept healthy and its fertility enhanced by means of organic fertilization; use may be made of a number of natural

processes such as the buffering, nutritive capability of organic material, nitrogen fixation by means of bacteria and bringing nutrients to the surface by means of deeprooting crops; and, if necessary, supplementary mineral fertilizers may be used;

- recycling nutrients by returning crop residues and the left-overs from food processing back to the fields;
- multiple cropping systems, in which optimum use is made of light, space and nutrients;
- the integration of livestock-keeping and crop production by exchanging products such as dung and crop residues;
- water and nutrient harvesting, the use of special structures to capture run-off and nutrients;
- microclimate management, the use of mulches, shelterbelts, etc., to influence temperature, airflows and humidity;
- water and soil conservation, countering erosion by influencing runoff and airflow;
- the influence of the selection and breeding of agricultural crops and livestock on productivity and situation-specific properties.

All these methods and techniques should be viewed in relationship to each other, since together they form one agro-ecological system.

Farming System Research and Agro-Ecosystem Research have made a considerable contribution to understanding agricultural life with all its economic, social, cultural and ecological relationships regarded as a single interconnecting whole, within which one has to operate. Sociology and anthropology have contributed

greatly to obtaining better insight into the importance of social relationships (including gender issues) and cultural/religious influences when new technologies are developed.

#### Further development of technology is necessary

There are still many gaps in our knowledge, particularly in the area of maintaining soil fertility, pest control, improving food crops, etc., mainly in those areas where natural conditions are difficult. Much more attention will have to be paid here from the research side. There are also many difficulties on the institutional side. National and international institutions involved in research, extension, education, marketing and policy-making were not set up for an agro-ecosystem approach, the basis of which is wide diversity, a variety of knowledge systems and participation by the local people.

Sustainable agriculture is still far from reality. Also, it is not a static endgame; rather, it is a process that has to be developed, maintained and protected. Where the local people are involved, it is their immediate interest and it is their primary responsibility to protect sustainability. It is the responsibility of outsiders such as researchers and extension workers to stimulate and support the people in their processes of technology development leading to sustainable systems. As the Brundtland report states: 'it is a long term process which needs urgent attention'.

The Editors.



# Index of Abstracts

	rural development	environment	agriculture general	agro-ecosystem appr.	low-external input ag.	indigenous knowl.	participation	crop production	animal husbandry	gardening	agroforestry	pest management	seed conservation	soil fertility	soil conservation	water management	women	appropriate technology	temperate	tropical	humid	semi-arid	highland	Africa	Asia	Latin America	policy	research	conceptual	practical	cases	references		
- World Commission on Environment and Development. (1987). Our Common Future.	•	•	•															•	•							•	•	•	•	•				
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- IDRC (1984). Coming Full Circle. Farmer's Participation in the Development of Technology.	•	•					•													•						•	•	•	•	•	•			
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This matrix is ordered in such a way that it starts with more general works on rural development, agro-ecosystem approach and low-external input agriculture, followed by works on specific subjects as listed in the index. The abstracts are on alphabetic order of author. Satis no. are according to Satis Classification System. (May 1988: Dfl. 1,00 = US\$ 0,55).



	rural development	environment	agriculture general	agro-ecosystem appr.	low-external input ag.	indigenous knowl.	participation	crop production	animal husbandry	gardening	agroforestry	pest management	seed conservation	soil fertility	soil conservation	water management	women	appropriate technology	temperate	tropical	humid	semi-arid	highland	Africa	Asia	Latin America	policy	research	conceptual	practical	cases	references	
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- Stoll, G. (1986). Natural crop protection, based on local farm resources in the tropics and subtropics.																																	
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- Mooney P., C. Fowler, (1986). The Community Seedbank Kit.																																	
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# ABSTRACTS

Abadilla, D.C. (1982).

**Organic farming.** (English)

AFA publications, 49 Mangyan Rd, La Vista Subd, Quezon City, Philippines, 213 p, 4 ills, 75 refs. Dfl. 70, –  
*organic farming / fertilization / plant protection / mulching / soil management / composting / earth worms / crop rotation / companion planting / nitrogen fixation / pest control / nutrition / health*

Region: China, Philippines. Utility: practical, experience. Satis no.: 404

With this publication the author has made an important contribution to the dissemination of information about organic farming not only for the Philippines but also for other tropical regions. The author has written the book since he regards organic farming as the logical alternative to conventional chemical farming, which is not sustainable. He sees the book as a start for further research to be prepared for the postpetroleum age. The book is a review of international publications on organic farming adapted to the farming situation in the Philippines. The author explains why organic farming techniques are to be preferred to chemical farming techniques. In this way soil fertility, crop management and pest management are discussed and effects on nutrition and health are demonstrated. The author strengthens his arguments with many practical examples from both temperate and tropical origin. One chapter of the book is devoted to a study of 'organic farming in China'.

Although the book is crop biased it gives a good and practical introduction into organic farming in the tropics.

Altieri, M.A. (1987).

**Agroecology. The Scientific Basis of Alternative Agriculture.** (English, French)

Westview Press / Intermediate Technology Publications, 9 King Street, London, WC2E 8HW England. ISBN (U.K.) 1-85339-000-3. 227 pp., many refs. Dfl. 36,50. The French edition, ISBN 2-86733-030-0, is available from Editions Debard, 7, Bd Victor, 75015 Paris, France. Dfl. 49,50

*agricultural ecology / agroecosystems / farming systems research / alternative agriculture / traditional agriculture /*

*organic farming / polyculture / cover cropping / mulching / crop rotation / minimum tillage / agro-forestry / pest management / sustainable agriculture*  
Region: Chili, Peru, Mexico, Indonesia, North America. Utility: book, scientific, methodology, cases. Satis no.: 404

The agro-ecological approach regards farming systems as the fundamental unit of study, and in these systems mineral cycles, energy transformations, biological processes and socio-economic relationships are investigated and analyzed as a whole.

Thus, agro-ecological research is not concerned with maximizing production of a particular commodity, but rather with optimising the agro-ecosystem as a whole. This approach shifts the emphasis in agricultural research from disciplinary and commodity concerns toward complex interactions among and between people, crops, soil and livestock. The purpose of this book is to provide a simple synthesis of the research on novel agro-ecosystems and technologies and an analysis of ecologically based farms, for the purpose of establishing the scientific basis of alternative agriculture.

The book is divided into five parts. Part One describes the historical and theoretical framework of agricultural ecology. Part Two deals with the ecological considerations necessary in designing sustainable agroecosystems and suggests a methodology for evaluating farming systems for the purpose of designing technologies adapted to the needs and resources of alternative farmers. Part Three describes the ecological features of various traditional and organic farming systems throughout the world, showing that there are many living models to learn from, both for researchers and farmers. The purposeful blending of traditional and modern knowledge is the starting point for the development of a sustainable agriculture. Part Four shows the ecological basis for managing insect pests, pathogens and weeds. Part Five depicts the necessary conditions for sustainable agriculture worldwide.

This book is highly recommended to anyone interested in the development of sustainable agriculture.

Beets, W.C. (1982).

**Multiple cropping and tropical farming systems.** (English)

Gower/ Westview Press, Gower House, Croft Road, Aldershot, Hampshire GU11 3HR, England. ISBN 0-566-00567-0, 156 p, 40 ills, 150 refs.  
*multiple cropping / farming systems / socio-economics aspects / soil management / irrigation / pest control / microclimate*

Region: Taiwan, Philippines, India, Africa, Tropical America. Utility: scientific, policy, research, economics, history, examples. Satis no.: 407

The book gives a good description of different aspects of tropical farming systems. It describes the history, agronomy, crop husbandry, management economics and planning of those multiple cropping systems that are presently practiced or feasible. The role of multiple cropping systems in tropical subsistence farming, the problems of land-use and the requirements of resources and the interaction between different agricultural systems and the farming community are important parts of the book. The possibilities for agricultural development are carefully evaluated. The book makes a body of knowledge about multiple cropping and farming systems in the tropics available to researchers, agricultural practitioners, policy makers, educators and students.

Blaikie, P.; Brookfield, H. (eds.) (1987).

**Land Degradation and Society.** (English)

Methuen & Co. Ltd., 11 New Fetter Lane, London EC4 4EE, U.K., ISBN 0416-401050-3, 296 p., many refs. Dfl. 48, –

*land degradation / land management / soil and water conservation / economics / history / social systems*  
Region: North America, Indonesia, the Pacific, China, India, Europe. Utility: book, scientific, international, cases, bibliography. Satis no.: 422.

The departure point of the book is that the environmental movement has had a marginal impact on the continuing exploitation of nature for short-term gain. The authors argue that a combination of natural and social science is needed in order to approach the problem of land degradation. In



particular, social understanding of land degradation is poorly developed; so much so that the environment is frequently only considered as a stage, a passive background to human action. The argument is that people produce nature through complex methods of land management. Many detailed case studies are provided. The volume is strongly anti-fundamentalist, not seeking to preserve the environment for the sake of the environment: it argues strongly that poverty is the cause of poor land management and poor land management worsens the environmental crisis.

Bunch, R. (1985).

**Two ears of corn. A guide to people-centered agricultural improvement.** (English)

World Neighbors, 5116 North Portland, Oklahoma City, Oklahoma 73112, USA, ISBN 0-942716-03-05, 250 p, 40 ills. Dfl. 22, –  
*agricultural development / planning / appropriate technology / administration / extension / institutions / participation*  
Utility: manual, policy, extension, methodology, international. Satis no.: 401.1

This book is the attempt of World Neighbors, a small group of practitioners in rural development, to tell others what it has learned from its experiences in the field. W.N. has opted for the implementation of small programs while they believe that these small programs can play an unique, invaluable role in small farmer agricultural improvement. Small programs can meet the specific needs of specific cultures, markets, and microclimates and can build upon existing local resources, such as traditional knowledge, exceptional leadership, or indigenous forms of organization. They have the flexibility to be creative and to respond to changing needs without bureaucratic delays. Small programs can increase the villagers' desire for change, their knowledge about what changes might be beneficial, and their confidence in their ability to make these changes. In this context the author describes 'how to teach people a process by which they can develop their own agriculture'. As important conditions for this kind of approach Bunch mentions: 'to avoid give-aways and paternalism', enthusiasm and participation. The book discusses: how to choose and analyze the program area; how to plan with participation of the villagers; how to start; how to choose, experiment and teach appropriate technology; about employees and how to multiply our efforts and build institutions. A book that puts development with its both feet on the ground; of high interest

to all people involved in small scale, people centered development.

Chambers, R. (1983).

**Rural development. Putting the last first.** (English)

Longman, Longman House, Burnt Mill, Harlow, Essex CM20 2JE, UK, ISBN 0-582-64443-7, 246 p., 250 refs. Dfl. 12,50  
*farming systems / farming systems research / development aid / agricultural research / extension*  
Utility: book, instructive, scientific. Satis no.: 406

The book challenges the motivations and methods of those who go to help the rural poor. As outsiders, academics or practitioners, they need to step down, to sit, to listen and to learn. The poor are often judged by hearsay, but the really poor have seldom been seen and heard. Chambers opens the door to the outsider: how much we have to learn from the rural poor? Again and again he demonstrates that the small farmer's expertise represents 'the single largest enterprise'. Rural peoples' knowledge is enormous, complex, varied and valid. Chambers relates what is being done and can be done to bring about essential reversals – more power and control of resources to the poor. Those who have power will have to let go; those who think they have the necessary knowledge will have to open up to unconstrained dialogue with the poor.

Dalzell, H.W.; Gray, K.R.; Biddlestone, A.J. (1979).

**Composting in tropical agriculture.** (English)

International Institute of Biological Husbandry, Review paper series no.2, available from Intermediate Technology Publications, 9 King Street, London WC2E 8HW, U.K., 1979, 36 p, 10 ills, 7 refs. Dfl. 12,50  
*composting / principles / preparation / economics*  
Utility: manual, technical, drawings. Satis no.: 424.1

This practical guide describes the basic process of composting for fertilization and proven methods of heap construction. The conclusions are that composting entails low costs, has little risk of failure, increases crop production, is a simple technology, uses the available labour force and gives less dependency on imports.

Dupriez, H. (1983).

**Agriculture tropicale en milieu paysan africain.** (French, English edition, 'Tropical Agriculture in African Rural Communities', available Summer 1988).

Terres et Vie, Rue Laurent Delvaux 13, B-1400 Nivelles, Belgium; ENDA, B.P. 3370, Dakar, Sénégal, ISBN 2-87105-000-7, 280 p, 500 ills, 20 refs. Dfl. 58, –. For organizations in ACP countries, free available from CTA (see organizations).(\*)  
*extension / intercropping / socio-economics / green manure / farming systems / agro-forestry / erosion control / soil management / irrigation / seeding / plant protection / fertilization / soil treatment / equipment / insects*  
Region: Africa. Utility: practical, methods, economics, drawings. Satis no.: 403

This basic book, very well illustrated by many photos and drawings, studies and explains tropical agriculture. Starting from the careful observation of today's realities, it is open for self-reliant modernization. The authors show us the wealth of traditional experience; they make us understand the logic of relationships of the interrelated elements in different patterns of intercropping, soil protection, integration of trees, risk-minimizing, etc.; and they encourage our own observation and experiments. A book for farmers, technicians, students of general and technical schools, teachers and all those interested in the life and progress of African rural communities.

Dupriez H. and P. De Leener, (1987). **Jardins et Vergers d'Afrique** (French, English-language edition 'African Gardens and Orchards' will be available in the autumn of 1988). Terres et Vie, Rue Laurent Delvaux, 13, B-1400 Nivelles, Belgium; or ENDA, B.P. 3370, Dakar, Sénégal. ISBN 2-87105-025-8, 370 p. Dfl. 78, – (\*)  
*horticulture / home gardens / orchards / soil management / intercropping / crop protection / propagation / traditional species*  
Region: Africa. Ecozone: semi-arid, subhumid, humid. Utility: book, technical, extension, practical. Satis no. 448

'The comprehensive book on gardening in Africa'. Abundantly illustrated with photos and explanatory drawings. Gardens and orchards provide multiple products which complement the staple food and make nutrition a source of health. The first and essential part of the book describes and explains the practice of gardening: creating favorable conditions for plants, soil management, intercropping in the traditional home garden, crop protection by cultural and other methods, propagation techniques, etc. The author explains how to observe, reflect and experiment for improving food quality and yields.



The second part of the book lists the characteristics of a long list of food plants, especially such species as are present on African markets, but not so much known to technicians and their typical manuals. A basic book for practitioners in agricultural education.

Ehleq, J.L.; Dupriez, H. (1984). **Eau et terres en fuite, métiers de l'eau du Sahel.** (French, English edition, 'Vanishing Waters, Vanishing Lands' available summer 1988). Terre et Vie, Rue Laurent Delvaux 13, B-1400 Nivelles, Belgium; ENDA, B.P. 3370, Dakar, Sénégal, ISBN 2-87105-001-5, 128 p., many ill. Dfl. 42, - (\*) *erosion / erosion control / wells / pumps / organization*  
Utility: book, practical, drawings. Satis no.: 422

Villagers, craftsmen and technicians in the Sahel region of Yatenga, Burkina Faso, have had long experience in cooperating against the loss of water and soil. Together they are building bunds, micro-catchments and wells, developing new forms of organization and skills and opening direct and indirect sources of income. The book helps us to observe and understand the principles of water action, soil formation, the role of vegetation, the mechanisms, causes and consequences of erosion and where and how to stop it. It also describes and explains the techniques used by these craftsmen. The book contains many photos and explanatory drawings and is excellent for practitioners and students.

FAO (1980). **Organic Recycling in Africa. FAO Soils Bulletin no. 43.** (English). Le recyclage des résidus agricoles organiques en Afrique. FAO Soils Bulletin no. 47 (French), available through the authorized FAO Sales Agents or directly from Distribution and Sales Section, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy; ISBN 92-5-100945-7, 304 p., many refs. Dfl. 35, - *cropping systems / crop residue management / organic recycling / nitrogen fixation / research / training / extension*  
Region: Africa. Utility: book, workshop papers, scientific, research, practical, cases. Satis no.: 424

This book contains conclusions and papers from a workshop organized in 1977 on the effective use of organic materials which might be profitably utilized for improving or maintaining soil productivity. The great opportunities offered by making more efficient use of the potentials of biological nitrogen fixation in farming

systems are also discussed. A number of recommendations and guidelines were put forward by the Working Parties which also cover the needs for research, training and extension. This publication provides a valuable source of information and guideline for teachers, researchers, extension officers and agricultural policy makers in Africa. From the same source there is also 'Organic Recycling in Asia' and 'El reciclaje de materias organicas en la agricultura de America Latina'.

FAO (1983). **Integrating crops and livestock in West Africa** (English). Animal Production and Health Paper 41. Distribution and Sales Section, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy. 112 p. *land use / agro-pastoralism / agro-silvopastoralism / mixed farming / crop residues / manure*  
Region: West Africa. Ecozone: humid, subhumid. Utility: book, scientific, research, policy, experiences. Satis no. 406.

This publication, aimed at senior professionals and technical administrators, discusses the dynamics of traditional agricultural systems and the prospects for increasing the integration of crop and livestock production. It is based primarily on experience gained through Farming System Research in the humid and subhumid zones of West Africa. The focus is on Nigeria, the most populous country in this region, where the pressure to intensify land use while preserving the natural resource base is particularly great. The book has 3 main sections:

1. R. von Kaufman: 'The progression from pastoralism to integrated crop and livestock production'. Describes interactions between Fulani cattlekeeping and cropping by non-Fulani (e.g. crop-residue grazing, manuring), as well as crop-livestock integration within agro-pastoral systems.
2. B.N. Okigbo: 'The progression from arable cropping to integrated crop and livestock production'. Describes crop-livestock interactions from the farmers' point of view as opposed to the pastoralists point of view, and the increased importance of livestock on farms as human population density increases and permanent cropping replaces fallowing systems.
3. E.N.N. Oppong: 'Integrating livestock production and tree crops'. Describes the advantages for both tree crop and livestock production when these are combined, by either grazing legume pastures in plantations, or by feeding tree by-products to livestock. Refers mainly

to Ghana, where most of the plantations are owned by smallholders. Most technical aspects are covered, but some consideration is also given to socio-economic issues. The emphasis in the concluding chapter, 'Strategies and Action' is on evolutionary development in the traditional sector, enhance existing trends toward integration of crop and livestock production.

FAO (1984). **Improved production systems as an alternative to shifting cultivation.** FAO Soils Bulletin 53. (English). FAO Distribution and Sales Section, Via delle Terme di Caracalla, 00100 Rome, Italy, ISBN 92-5-102121-X, 201 p., many refs. Dfl. 23, - *shifting cultivation / permanent production systems / farming systems / agro-ecology / socio-economic / institutional / traditional knowledge / agro-forestry*  
Region: Sierra Leone, Indonesia, Africa, Amazon Basin, Ghana. Utility: book, papers, scientific, international, research, policy, practical. Satis no.: 406

This book is the result of an FAO Expert Consultation on the subject held in 1983. Increased pressures on traditional farming systems worldwide are causing falling yields and land degradation. The objective of the E.C. was to see which feasible alternatives are available for improving degraded shifting cultivation systems or for replacing them with systems of permanent cropping. The book provides guidelines for improving farming systems and for future research activities and policy decisions. It is recognized, however, that we are still a long way from finding all-round solutions to problems related to shifting cultivation and the up-grading of living standards for subsistence farmers. Nevertheless, the volume provides useful insights and practical data. Recommended for persons involved in this subject in research, practical application and policy.

Fitzpatrick, E.; Cox, E. (1981). **Good gardens, good food, good development. A handbook of practical agriculture and nutrition for development/extension workers in Papua New Guinea.** (English) Wirui Press, Wewak, East Sepik Province, Papua New Guinea, 95 p., c. 100 ill., no refs. Dfl. 31,50 *community development / subsistence / shifting cultivation / compost / mulching / crop rotation / intercropping / multiple cropping / agroforestry / health education / nutrition / extension / communication*



Region: South East Asia. Ecozone: humid. Utility: handbook, practical, instructive. Satis no.: 404

The book is written in a way that is understandable by professionals and people with no formal professional education in agriculture or nutrition. It tries to simplify the professional's approach and extension style, while providing sound technical guidelines for lay development workers. The book might serve as a useful guide for outsiders or expatriates. However the agricultural and nutritional changes recommended and the extension approaches promoted add up to a long-term process of development work with a particular community. The authors are aiming at self-reliant development with optimal use of local resources. Understanding the local situation and traditional farming system and effective communication are seen as the starting point for further initiatives. A nicely written and illustrated practical booklet.



Foley, G.; Barnard, G. (1984).  
**Farm and community forestry.**  
(English)  
Earthscan Technical Report no. 3, Earthscan, 3 Endsleigh Street, London, WC1H 0DD, U.K., ISBN 0-905347-53-6, 236 p., c. 20 ills, c. 280 refs, Dfl. 45,-  
*agro-forestry / traditional knowledge / deforestation / constraints / farm forestry / community forestry / design / planning / implementation / fuelwood / eucalyptus*  
Region: South East Asia, India, Africa, Sahel. Utility: book, scientific, methodology, practical. Satis no.: 461

This report is an attempt to provide a systematic appraisal of the experience gained to date with farm and community forestry. Its intention is to examine the different programme approaches which have been used, and to analyze the contextual and other factors which determine their scope and limitations.

Farm and community forestry is not an homogeneous entity. It is rather a range of possibilities, the scope of which varies tremendously from

country to country. It is therefore vital for programmes to be based on a clear understanding of the realities of local circumstances, and on the constraints they impose on tree growing. A number of basic lines of approach have been developed to meet the requirements of different contexts and programme objectives. The report discusses the possibilities and constraints of the different approaches in addition to programme planning and implementation. The experiences of different countries in Asia and Africa are reviewed.

Fukuoka, M. (1985).  
**The Natural Way of Farming. The Theory and Practice of Green Philosophy.** (English)  
Japan Publications Trading Co Ltd., 1-2-1, Sarugaku-cho, Chiyoda-ku, Tokyo 101, Japan; also available from Fleetbooks S.A., c/o Feffer and Simons B.V., Rijnkade 170, 1382 GT Weesp, The Netherlands. ISBN 0-87040613-2, 273 p., no refs. Dfl. 39,-  
*perception of nature / modern agriculture / natural farming / tillage / soil fertility / pest management / weeding / pruning / cropping system / fruit trees / vegetables / nutrition*  
Region: Japan. Utility: book, philosophical, experience, practical. Satis no.: 404

Natural farming is based on five principles: no tillage, no fertilizer, no pesticides, no weeding, and no pruning. It is farming in step with nature, where farmers have to question and reject scientific thinking and allow nature and natural processes to guide how they farm. In this book Fukuoka shares his interpretation of the development of agriculture, the principles of natural farming, and gives much specific information and techniques that can be used by natural farmers. There is a great deal of specific technical information presented here, intermixed in with a critique of scientific agriculture, all presented within a world view that seeks to 're-green' the globe. Very interesting for people who are seeking new pathways in agriculture.

Gips, T. (1987).  
**Breaking the pesticide habit. Alternatives to 12 hazardous pesticides.** (English)  
International Alliance for Sustainable Agriculture, Newman Centre, University of Minnesota, 1701 University Av. SE, Room 202, Minneapolis, Minnesota 55414, USA, 1987, 372 p, 440 refs. Dfl. 95,-  
*pesticides / integrated pest management / organic farming / sustainable agriculture*  
Utility: book, directory, policy, international. Satis no.: 433

In 1985, the Pesticide Action Network (PAN), an international, grassroots network of more than 300 nongovernmental organizations, launched a public information campaign against 12 of the world's most hazardous pesticides, the 'Dirty Dozen': DDT, 'the Drins' (Aldrin, Dieldrin and Endrin), EDB, Chlordane/Heptachlor, Parathion, Paraquat, 2,4,5-T, Chlordimeform, DBCP, HCH/Lindane, Camphechlor and PCP. To bridge the lack of documented information on safe alternatives for these specific pesticides the International Alliance conducted a broad research effort into both chemical and non-chemical alternatives for all the major uses of the Dirty Dozen, from agriculture to public health. This included an extensive literature review, as well as a survey conducted among more than two thousand leading scientists, extension officials, farmers and groups worldwide. A Scientific Panel was created with distinguished scientists to help review the work.

The conclusion of this research is that alternatives are available for nearly every use of the 12 pesticides. A range of beneficial insects, plants, fish, fowl, fungi, and other naturally-occurring organisms can be successfully combined with an array of creative management strategies such as ridge tillage, trap crops and composting to manage pests.

The proper combination of traditional approaches and modern discoveries can provide an historic opportunity to develop sustainable agriculture and pest control systems worldwide. The book provides a thorough review of the evolution of pest control, the concepts of sustainable agriculture and the impact, status of and alternatives for the 12 pesticides. Besides this, there are recommendations for action by Governments, Research and Extension Institutions, International Agencies and Business and Industries are given.

This research must not be seen as a source for quick chemical or even non-chemical replacements but rather as the basis for a properly designed, holistic and sustainable agriculture. Alternatives are not alternative products but alternative value systems and associated ways of thinking and behaving. Convincing and inspiring, a must for anyone active in agriculture, policy, business, research or extension, worldwide!

Glaeser, B. (Ed.) (1987).  
**The Green Revolution Revisited.** (English)  
Allen & Unwin, P.O. Box 18, Park Lane, Hemel Hempstead, Herts HP2 4TE, U.K. 23,-. ISBN 0-04-630014-7, 206 p. Dfl. 93,-



*organic farming / sustainable agriculture / agro-forestry / green revolution / ethno-ecology*

Region: Brazil, India, Nigeria, Rwanda.  
Utility: book, policy, methodology,  
international. Satis no.: 404

This collection of well-researched papers is a valuable contribution to the 'Green Revolution and beyond' literature. The book has two principle aims. The first is to provide a critical evaluation of the policy and implementation of the Green Revolution. The second objective is to describe alternative approaches to Third World agriculture which are being developed as a response to criticisms of the Green Revolution.

Examples are presented from developing countries on three continents. The goals, economic rules and general strategy of 'ecofarming' come up for discussion. In 'Outlook for further development' Sachs, the 'father' of the ecodevelopment concept, emphasizes on a 'combination of peasant rationality with all the possible inputs of modern science'.

Although there still remain many open questions, this is a valuable book which deserves a wide readership.

Harwood, R.H. (1979).

**Small farm development. Understanding and improving farming systems in the humid tropics.** (English)

Westview Press, Inc, 5500 Central Avenue, Boulder, Colorado 80301, USA, ISBN 0-89158-669-7, 1979, 160 pp., 16 ills, 58 refs., Dfl 53,20  
*farming systems / small farming / agricultural development / farming systems research / limitations / economics / multiple cropping / livestock / mixed farming systems / inputs / resource use / mechanization / stability*

Region: South East Asia. Ecozone: humid. Utility: book, scientific, methodology. Satis no.: 406

Better understanding and analysis of the bulk of the Third World farm production systems are the theme of this important book. The author discusses with great depth and sensitivity the issues and options facing resource-limited farmers in the tropics. He suggests that a 'purposeful blending of traditional and modern technologies may well prove the key to starting the most disadvantaged farmers along a more rapid development path'.

In the first part of the book, Harwood presents a summary of small farms from subsistence hunting-gathering to primary mechanized operations. He states that 'the reality that faces the farmer who ekes out his existence from

a mere half-hectare of poor land can only be understood if it is seen as he sees it'.

The second part reviews critical factors in small farm development which are often overlooked or given little emphasis in development programs. Some of these factors are: Animals in Mixed Farming Systems, Noncommercial Farm Activities, Resource optimization and Stability in farming systems.

The book should receive wide circulation among agricultural researchers and development workers and is also of interest for people outside the humid regions. (Appropriate Technology Sourcebook).

Hobbelink, H. (1987).

**New hope or false promise? Biotechnology and Third World Agriculture** (English).

International Coalition for Development Action (ICDA), 22 Rue des Bollandistes, 1040 Brussels, Belgium.  
*biotechnology / seed breeding / genetic erosion / transnational corporations / technology development*  
Utility: book, policy. Satis no.: 432.1

The booklet is a contribution to a better understanding of the likely impact of biotechnology on Third World agriculture. Genetic resources, the building blocks of agricultural production, are the basic ingredients for genetic engineering. Biotechnology might well be a powerful force for change in agricultural production. But it might also be the means by which monopolistic control over agriculture is increased.

Technology as such is not a solution but a tool, with a degree of direction towards a certain type of development built in.

The booklet aims to stimulate the debate on such crucial questions as: How should technology be developed, by whom, and for whose benefit?

Hoskin, C.M. (1973).

**The Samaka Guide to homesite farming** (English).

Samaka Service Centre, Manilla, Philippines. Reprinted by Agromisa, P.O. Box 41, 6700 AA Wageningen, The Netherlands. Available from SATIS Bookshops, 173 p, 1973, c. 90 ills. Dfl. 12,50  
Bookshops, 173 p, 1973, c. 90 ills.  
*cooperation / marketing / wells / vegetable garden / fertilization / compost / fruit trees / mushrooms / poultry / pigs / rabbits / goats / fishpond / carabao / construction*

Region: Philippines. Utility: book, practical, farm model, philosophy, ideas, drawings, methods. Satis no.: 401.5

This practical illustrated booklet brings

together a lot of agricultural knowledge and wisdom from Philippine small farmers. It describes and explains good garden practices for the humid tropics, in simple English including water supply, soil management, composting and mulching, nurseries, special direction for each vegetable, small livestock raising. It does not forget community life.

Howard, A. (1978).

**An Agricultural Testament.** (English)  
Rodale Press, 222 Main Street, Emmaus PA 18049, USA, 253 p, 25 ills, 5 refs. ISBN 0-87857-722X. Dfl. 43, -  
*soil management / fertilization / composting / organic farming / textile / fibre plants / vegetables / green manuring / pasture management / erosion*

Region: West Indies, India, Great Britain. Utility: practical, methods, research. Satis no.: 420

The purpose of this book is to draw attention to the earth's capital: the soil and to indicate some of the consequences hereof. Sir Albert Howard explains his organic farming methods by which soil fertility can be restored and maintained and farming can stay healthy. The book gives an review of forty years' experience in the West Indies, India and Great Britain in the field of soil management, composting, green manuring, soil erosion, crop varieties and pastures. With this book Sir Albert Howard has laid the fundament for organic farming in the Tropics.



*Microbasins are used for tree planting.*

Hurni, H. (1986).

**Guidelines for Development Agents on Soil Conservation in Ethiopia** (English, Amharic).

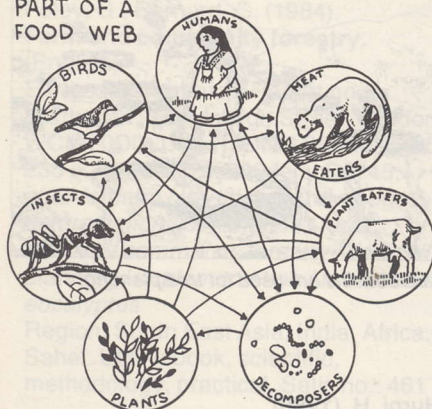
Community Forest and Soil Conservation Development Department, Ministry of Agriculture. Can be ordered from Soil Conservation Research Project, P.O. Box 2597, Addis Ababa, Ethiopia. 1986, 100 pp., ills., US \$ 10,-.  
*soil conservation / agroclimatic zone / land use / slope / soil type / traditional knowledge / measures / cultivated land*



*/ grassland / forest land / techniques*  
 Region: Ethiopia. Ecozone: semi-arid, subhumid, humid, highlands. Utility: book, technical, methodology, practical. Satis no.: 422

The book is a cooperative effort by concerned researchers and implementors to improve the massive efforts of soil conservation in Ethiopia. For the first time in soil conservation care has been taken to include and improve traditional measures used by the farmers for centuries, and to consider ecological and agricultural differences which are important for selecting the most suitable measures to be implemented locally. Nine general agroclimatic zones are described in a first stage of the book. Any locality in Ethiopia may be classified without the help of maps, altimeters or rainfall data, but simply by locally observed information on crops, trees, soils and traditional conservation. For each general agroclimatic zone, sets of conservation measures are listed for cultivated land, for grassland and for forest land. Local differences in slope and soil texture are added as a further means of differentiation. In the third stage of the book, 18 conservation measures suitable for Ethiopia are described in detail. The book includes many relevant illustrations and figures. Although it has been prepared mainly for Ethiopian conditions of ecology, agriculture and socio-culture, the book has found a lot of interest worldwide and is applied as a guideline for adapted design of soil conservation measures in labour-intensive programmes in many countries.

PART OF A FOOD WEB



Jacobs, L. (1986).  
**Environmentally sound small-scale livestock projects. Guidelines for planning.** (English)  
 CODEL/HPI/VITA/Winrock  
 International Institute, can be ordered from VITA Publications Services, 1815 North Lynn Street, Suite 200, Arlington, Virginia 22209, USA. ISBN 0-86619-245-X, 149 p, 10 ills, 60 refs, price US\$ 10,00 without mailing.

*livestock / environment / mixed farming / fodder / agro-forestry / range management / animal health care / breeding / low-external input agriculture / local species / traditional knowledge / farming systems / project planning / participation*  
 Utility: manual, overview, practical, project. Satis no.: 450.

This manual has been prepared for field workers in agricultural development, and is widely applicable, not only in the Tropics. The economic and socio-cultural role of livestock in farming systems is discussed, and the environmental factors which affect livestock production are explained in terms which the non-specialist can also easily understand. This sets the background for the design of socially acceptable and environmentally sound livestock projects. Emphasis is on using local animal species and traditional practices as the basis for development, and on involving local people in project planning and management. Useful guidelines are given for integrating livestockkeeping, arable cropping and woody plants in such a way as to ensure sustainable productivity and stability of the agro-ecosystem.

Kang, B.T., C.F. Wilson and T.L. Lawson, (1984).  
**Alley cropping: a stable alternative to shifting cultivation.** (English) IITA special publ., P.M.B. 5320, Oyo Road, Ibadan, Oyo State, Nigeria.  
*alley cropping / agro-forestry / mulching / Leucaena / soil nutrients / legume trees / fodder*  
 Region: West Africa. Ecozone: humid, subhumid. Utility: handbook, practical. Satis no.: 461.1

In most parts of the Tropics, there is a critical need to increase food production to meet the demands of a rapidly increasing population. One obvious response is to increase the cropping period and decrease the fallow period, keeping more land under cultivation at any given time. But this is not as simple as it appears. The fragile tropical soils do not respond well to temperate climate farming methods based on the use of heavy machinery and expensive agro-chemicals, which often leave the land in a poorer condition than does a heavily-used bush fallow system. In an attempt to incorporate the good features of bush fallow into a continuously productive farming system, scientists at IITA have developed a production system for tropical agriculture called 'alley cropping'. This is an agro-forestry system that involves growing food crops in alleys formed by hedgerows of leguminous trees or shrubs. This exciting new development of

integrating the art or knowledge developed over the centuries by the small tropical farmer with modern science or technology has tremendous potential for feeding the increasing populations and simultaneously stabilizing tropical soils for future generations.

This practical booklet, with many tables, photos and drawings, gives a clear description of the principles of alley cropping and the different steps to instal the system.

Malaret, L. (1985).  
**Safe pest control. An NGO Action guide.** (English)  
 ELC, P.O.Box 72461, Nairobi, Kenya, 1985, 69 p, 15 ills, 193 refs. price US\$ 3,50  
*pest control / pesticide / pesticide usage / pesticide side effects / health / integrated pest management / biological methods / pesticide handling*  
 Utility: handbook, resource book, practical, bibliography. Satis no.: 433

This NGO Action Guide provides practical information and advice for people having to use pesticides or work with the users, and explores the ways in which individuals, NGOs, National Governments, the industry, the UN Development Agencies etc., can reduce the risk to Third World users of pesticides. The booklet combines realistic ideas for action with a thorough listing of sources of information, advice, contacts and literature. Very practical.

Marten, G.G. (ed.) (1986).  
**Traditional agriculture in southeast Asia: a human ecology perspective.** (English)  
 East-West Environment and Policy Inst., University of Hawaii, Honolulu, Hawaii, USA, Westview Press, Boulder, ISBN 0-8133-7026-4, 1986, 384 p., figs., tables, many refs. Dfl. 65, -  
*traditional agriculture / agro-ecosystems / socio-economic factors / soil management / home gardening / dry-land farming / agro-forestry*  
 Region: South East Asia. Ecozone: humid. Utility: book, scientific, methodology. Satis no.: 406

In this book a group of agronomists, ecologists and social scientists describe the functioning of the traditional agriculture in Southeast Asia. Several chapters deal with the region/subject as a whole, while covering the following items: (a) review of agriculture; (b) the human ecology perspective; (c) socio-economic factors and small-scale farmers; (d) social organization and traditional agro-ecosystems; (e) ethno-ecology; (f) soil management; (g) shifting cultivation; (h) the ecology of traditional pest



management and (i) agricultural research. The remaining chapters are concerned with particular systems in particular areas or countries: traditional rice production and shifting cultivation among the Bontok in the Philippines, traditional agriculture in northern Thailand, rainfed cropping in north-east Thailand, traditional agro-forestry systems in West Java (Indonesia), trees in rice fields in northern Thailand, and the nutritional aspects of farming in West Java. (From: Abstr. on Trop. Agric.). For the development worker this book gives a very good insight in the functioning of traditional farming systems.

Matlon, P., R. Cantrell, D. King and M. Benoit-Cattin (eds.), (1984).

**Coming Full Circle. Farmer's Participation in the Development of Technology.** (English, French)

International Development Research Centre (IDRC), Box 8500, Ottawa, Canada K1G 3H9, ISBN 0-88936-324-2, 176p, US \$ 12,-.

*cultivation systems / on-farm research / agricultural engineering / farmers / communication / research workers / evaluation / access to information / communication barriers / rice*  
Region: West Africa. Utility: book, conference report, scientific, bibliography. Satis no.: 406

Involving farmers in identifying the constraints to rural agriculture and in designing measures to alleviate them is the subject of this publication which resulted from a meeting in Ouagadougou in 1983.

Very often 'packages' that look sound technically are not adopted by farmers because the 'developers' have overlooked crucial constraints at the farm level. The gaps between results on research stations and those on farms in the Third World have prompted some researchers to regard the farmers' conditions as the real laboratories. Why, how, where, and when to get farmers involved in research are the focus of this document, and the degree to which researchers have been able to listen to and work with their new partners varies. The need of farmers' participation in research into their systems is recognized, but dialogue is difficult, even between scientists of different disciplines, much more so between different cultures. Diagnosis is continuous: it is part of an iterative, creative interaction between farmers and researchers. Although no farmers participated in the meeting the book should be read widely by development personnel, planners, researchers, and extension workers.

Minjas, A.N., Salema, M.P., Sarwatt,

S.V., Weber, J.J. (Eds) (1987).

**The role of Marejea (Crotalaria ochroleuca) in agricultural production in Tanzania.** (English)

German Foundation for International Development. Available from Benedictine Publications, Box 41, Peramiho, Tanzania. ISBN 9976-67-0273, 70 p, 1 ill, 71 refs.

*marejea / crotalaria ochroleuca / fodder / weed control / biological control / agro-forestry*

Region: Tanzania. Utility: proceedings, technical, research, national, practical. Satis no.: 461

Twenty years of experiences with growing marejea by the Benedictine Fathers at Peramiho and by farmers who adopted its cultivation demonstrate the value of this multipurpose plant that can be used to improve soil fertility and structure, suppress weed, control pests in storage and nematodes in the field and be fed to livestock.

A workshop was organized by the Sokoine University of Agriculture to evaluate its potential. The proceedings comprise a summary in the use of marejea, that can be extended to the farmers in the light of what is known, and points out areas requiring further research.

Mooney P., C. Fowler, (1986).

**The Community Seedbank Kit.** (English)

Rural Advancement Fund International (RAFI), P.O. Box 1029, Pittsboro, NC 27312, USA., 54 p., ill., price US \$ 4,50 without mailing.

*gene conservation / biotechnology / traditional varieties / seed diversity / seed bank / community participation*  
Utility: leaflets, policy, practical. Satis no.: 432.1

In this kit RAFI asks attention for the botanical holocaust as result of the propagation of 'Green Revolution' technologies and the 'Gene Revolution' started by the development of biotechnology and genetic engineering. The authors make a strong plea for the conservation of gene diversity. The kit focuses upon what RAFI considers to be the most important and most neglected part of a full conservation strategy – the role of the farm community in preserving seed diversity. In this context the authors have concentrated on the strategy of short and medium-term storage in community seed banks. Practical advice is given on how to start a community seed bank.

The kit is primarily intended for NGOs based in the Third World working with rural communities in general or with agricultural projects in particular.

Nair, P.K.R. (1984).

**Soil fertility aspects of agro-forestry.** (English)

Science and practice of agro-forestry, no. 1, ICRAF, P.O. Box 30677, Nairobi, ISBN 92-9059-021-1, 85 p., c.30 ill, c. 240 refs. Dfl. 32, –

*shifting cultivation / taungya / multistorey cropping / plantation forestry / agro-forestry / alley cropping / mulching / soil management / soil productivity*

Utility: review book, scientific, research. Satis no.: 461

Among all the things that have been said about potentially positive effects of agro-forestry, few have been repeated so often and so emphatically as the alleged capacity of trees to restore and improve soil fertility. Much of what has been written or said on this topic is myth or intelligent speculation. Over-simplifications and scientifically unacceptable generalizations are very common.

In this booklet, Dr. Nair has analyzed and compiled what is actually known about the subject, drawing on relevant information and research from cross-disciplinary and geographic boundaries. Equally, or even more importantly, he has pointed at what is not sufficiently known and has outlined priority fields of research which scientists can pursue in order to make valuable contributions, which may ultimately lead to better use of soil resources in agro-forestry and other forms of land use in the tropics and sub-tropical developing world.

National Academy of Science (1982).

**Agro-forestry in West African Sahel.** (English)

Free copies available for Third World organizations from BOSTID, National Research Council, 2101 Constitution Avenue, N.W. Washington, DC 20418, USA, others have to buy from Satis Bookshops. p. 86, c. 20 ill, 21 refs. Dfl. 30, –

*desertification / landuse systems / agro-forestry / uses / potential / possible tree species / diagnosis and design*

Region: West Africa. Ecozone: semi-arid, arid. Utility: book, practical, technical. Satis no.: 461

This report provides a review of agro-forestry in the Sahel today, the basic problems that are encountered in the current practice of agroforestry, and the opportunities that are available to donors to promote agro-forestry in the region.

While agro-forestry is a way of life for the Sahelian agriculturalist, from the Groundnut Basin in Senegal to the Waday region of Chad, development experts are still divided as to what



works best, what direction future efforts should take, and what basic problems and potential solutions exist. The differences in opinion appear to be due to the diversity that exists across the Sahel, not only in the physical environment but also in traditional use patterns and – a point often overlooked – government policies, efforts, laws, and regulations, and their enforcement. It is not surprising that various specialists have arrived at different and sometimes conflicting conclusions, depending on their particular field of expertise and where they have gained their experience. The report reflects these differences and attempts to give a balanced summary of an emerging field of study.

Pacey, A., Cullis, A. (1986).

**Rainwater harvesting. The collection of rainfall and runoff in rural areas.** (English)

Intermediate Technology Publications, 9 King Street, London WC2E 8HW, U.K., ISBN 0-94668822-2, 216 p, 66 ills, 210 refs. Dfl. 36,50

*water-harvesting / irrigation / runoff farming / water storage / drinking water*  
Ecozone: arid, semi-arid. Utility: manual, technical, extension, international. Satis no.: 311

This publication gives an explanation of how rainwater can be collected to obtain drinking water and how runoff water can be harvested for agricultural use. It describes how to design and implement schemes to fit different patterns of livelihood and organization. Using material gathered from a wide range of sources the authors emphasise the importance of social, economic and environmental considerations in the planning of projects. A review of traditional technologies of water harvesting is given. This book is excellent for rural development workers who are involved with water resources for domestic and agricultural purposes, and who want to have an idea of the experiences with and the possibilities of water harvesting.

Pacey, A. (1978).

**Gardening for better nutrition. An Oxfam document** (English)

Intermediate Technology Publications Ltd., 9 King Street, London WC2E 8HN, England, ISBN 0-903031-50-7, 64 p., 14 ills., 35 refs..

*vegetables / nutrition / vitamins / protein / health service / community participation / tools / soil management / fertilization / compost / seeding / seed treatment / mulching / plant protection*  
Utility: book, practical. Satis no.: 488

Contains experiences on vegetable cultivation and its extension in different

programmes aimed at nutrition amelioration. The central chapter treats the choice of different vegetable species of the tropics for a balanced diet, with short directions concerning cultivation and site, and the planning of a new garden. Intercropping and special measures of organic farming are not dealt with. The booklet is a useful introduction in nutrition and gardening for development workers.

Richards, P. (1985).

**Indigenous agricultural revolution. Ecology and food production in West Africa.** (English)

Hutchinson Publ. Group, 17 – 21 Conway Str., London W1P 6JD, UK, ISBN 0-09-161321-3, 192 p., Dfl 34,50, no ills, c. 200 refs.

*agriculture / agricultural extension / food production / ecological balance / farming systems / seed selection / green revolution / multiple cropping / intercropping*

Region: West Africa. Utility: book, scientific. Satis no.: 404

This publication gives a very practical but also theoretically very important contribution to the discussion of the role of indigenous agricultural knowledge and its relation to agricultural development, agricultural extension and research. On the basis of a thorough analysis of some West African cases he argues that intellectuals, development agencies and governments have all pursued environmental management problems at too high a level of abstraction and generalization.

Richards points out that the farmers themselves have considerable research capacities. He substantiates this on the basis of two cases: One case dealing with the way farmers know, select and experiment with rice varieties in Sierra Leone, and another case where farmers in Southern Nigeria knew about the life cycle of the variegated grasshopper to such an extent that they were able to anticipate some (but not all) the pest control recommendations developed by a research team.

Since farmers do carry out experiments, extension workers need to be trained to observe, evaluate, record and evaluate informal sector innovation. They might then assist in the more rapid diffusion of such innovations, either by incorporating them into their own repertoire of recommendations, or by creating opportunities for farmers to exchange ideas directly. This could be done by organizing local field days and farmer workshops or by any other method of 'sideways extension'.

Richards advocates the participatory research approach, where the problem

definition and perhaps most of the research itself is undertaken by appropriate user groups. The role of the scientist is that of a consultant: to collaborate rather than to direct. The book concludes with an annotated checklist designed to assist agricultural extension workers in assessing local skills and research and development priorities and opening up possibilities for 'sideways extension' and 'participatory research'. Although the book was written on the basis of West African experiences, it is also recommended for people interested in agricultural development in other parts of the world.

Sahabat Alam Malaysia. (1984).

**Seeds and food security. A seeds study report by Sahabat Alam Malaysia.** (English)

Sahabat Alam Malaysia, 37, Long Birch, Penang, Malaysia, ISBN 967-99942-3-6, 85 p., c. 40 ills, 14 refs, US \$ 3.00.

*genetic erosion / seed breeding / green revolution / transnational corporations / high yielding varieties / traditional varieties / genetic conservation*  
Region: South East Asia. Utility: book, policy. Satis no.: 432.1

The book focuses on the 'less-known consequences of the Green Revolution', i.e. the increasing dependency of our nutrition on a decreasing genetic base; the increasing monopoly by transnational corporations and the dangers of increasing monocropping of limited numbers of varieties. With case-studies from Malaysia, Philippines and India, and reprints of articles by acknowledged writers as Pat Mooney (The Law of the Seed), Francis Moore Lappe and Joseph Collins (Food First), the book gives a good summary of the impact and dangers of the situation. In the last chapter 'Fighting the seed revolution', several recommendations are given to take action at international, national and non-governmental levels.

Sholto Douglas, J.; Hart, R.A. de (1984).

**Forest farming. Towards a solution to problems of world hunger and conservation.** (English)

Intermediate Technology Publications, 9 King Street, London WC2E 8HW, U.K., ISBN 0-946688-30-3, 207 p, 16 ills, 50 refs. Dfl. 33,50

*agro-forestry systems / tree species / ecological factors / planting / harvesting / fruits / oil producing plants / nuts / fodder*

Ecozone: arid, temperate, highlands. Utility: book, addresses, species lists, seed supplies, ideas, design. Satis no.: 461



A book on the integration of forest and tree crops in farming, discussing the basic principles and describing practical steps. Trees are 'tools' with the greatest potentials for feeding men and animals, for regenerating soil, for restoring water systems, for controlling floods and droughts, for creating more benevolent micro-climates and more comfortable and stimulating conditions for humanity.

The authors outline a 'three-dimensional forestry' in which multiple trees with their nuts, fruits and protein-rich leguminous crops feed livestock and men, and provide cash and raw materials for activities such as building and energy. A large number of potentially useful trees are listed and described. Information on suppliers of seed is given.

Sommers, P. (1982).

**Low cost farming in the humid tropics. An illustrated handbook.** (English)

Island Publishing House Inc., Sta Mesa, P.O. Box 406, Manila, Philippines, ISBN 971-1007-02-9, 38 p., 27 ills, 1 ref. Dfl. 25, -

*organic farming / site preparation / seed preparation / weed control / fertilization / pest management / storage / seed selection*

Region: South East Asia. Ecozone: humid. Utility: manual, practical. Satis no.: 404

This small handbook describes and illustrates proven farming techniques that minimize or eliminate dependence on costly inputs. A successful farming system must reflect the socio-economic situation of a particular area. A small-scale farmer in the Tropics needs a system that is inexpensive, efficient, simple, and that relies on locally available inputs. The author explains such a system in practical steps. A nice introduction on how to produce crops around the house, a description from planting to harvesting and storage.

Steiner, K.G. (1984).

**Intercropping in tropical smallholder agriculture with special reference to West Africa.** (English, French)

GTZ, Postfach 5180, D-6236 Eschborn, West Germany, ISBN 3-88085-176-X, 304 p., DM 33.00, 49 ills, 208 refs.

*intercropping / mixed cropping / farming systems / yield stability / land equivalent ratio / intercrop competition / pest and weed management / intercropping research / experimental designs, socio economic aspects*

Region: West Africa. Utility: review, scientific, research, extension, practical. Satis no.: 407

Traditional and improved intercropping systems are now broadly recognized as

a feasible practice to optimize crop production in many developing countries. Intercropping systems promote the use of natural resources and at the same time constitute a most appropriate way of raising agricultural production in the tropics and subtropics, especially given the limited availability of external inputs based on fossil energy.

The report is a review of the international literature, including unpublished results on intercropping. It reflects the current state of knowledge on interactions and resource use in intercropping systems. The last chapter gives an appraisal of intercropping in smallholder agriculture and ends with a recommendation for applied agricultural research and extension programmes for the promotion of intercropping.



BEAN BRUCHID  
(*Acanthoscelides obtectus*)

Stoll, G. (1986).

**Natural crop protection, based on local farm resources in the Tropics and Subtropics.** (English)

TRIOPS Tropical Scientific Books, Raiffeisenstr. 24, D-6070 Langen, F.R. Germany, ISBN 3-924333-43-2, 186 p., 200 ills, 165 refs, price U.S.\$ 12.00  
*plant protection / IPM / storage protection / field pests / insecticidal plants / ashes*

Utility: review, practical, instructive. Satis no.: 433.2

This book is intended to be a practical guide to inform farmers, advisers, experts, and scientists about the possibilities of protecting crops in the field or in storage by using natural and local farm resources.

Natural methods of plant protection have assumed a new importance in an age when a host of commercial products is available which seem to offer an easy answer to the problem of fighting pests and diseases. However, these have neither solved the purely agricultural problems of the small farmer, nor have they improved his financial situation. On the contrary, they have resulted in a series of consequences which are self-defeating politically, economically, ecologically and socially.

Nature herself has offered us a profusion of methods for prevention and of plants for use in crop protection, a potential which deserves our interest since they offer solutions that respect

the requirements of the farmers and the environment.

The author has made a start in making an inventory of the available, often traditional, knowledge in this field. Further research and scientific investigation are still needed to improve the applicability and effectiveness of the methods. The book gives very practical information on natural pest management options for many tropical crops.

Stonehouse, B.(Ed.) (1981).

**Biological husbandry. A scientific approach to organic farming.**

(English)

Butterworths, London, ISBN 408-10726-X, 352 p, c.30 ills, c.600 refs. Dfl. 146, -

*organic farming / soil management / soil fertility / soil analysis / farming systems / fertilizations / mulching / plant protection / pest control / recycling / agricultural waste / cropping systems / agricultural technology / energy use*

Ecozone: temperate, tropical. Utility: scientific, policy, research, tables, economics. Satis no.: 404

This book, the proceedings of the first conference held by the International Institute for Biological Husbandry, is a detailed review of the possibilities of natural biological processes in maintaining and improving the productivity of agricultural land. Acknowledged experts in biological husbandry write on a wide range of topics: the interrelationships of soil, flora and fauna; agricultural methods including biological pest control, problems of saving energy and recycling and an assessment of the limits of productivity; the application of organic farming methods to a variety of agricultural systems; studies in energy utilization, crop quality and yield, and the economics of biological husbandry as compared with conventional agriculture. There is a section specifically devoted to biological husbandry in the tropics.

An important reference work for all people involved in agricultural development.

Subba Rao, N.S. (1984).

**Biofertilizers in agriculture.** (English)

Balkema, The Netherlands, 186 p, c 40 ills, c 250 refs. ISBN 90-6191-405-1, Dfl. 65, -

*microbiology / fertilization / nitrogen fixation / Rhizobium / Azotobacter / Azospirillum / Bleu-green Algae / Azolla / Phosphate Solubilizing Microorganisms / composting / soil management*

Utility: book, scientific, research, tables, addresses, methods. Satis no.: 424



This well-illustrated book presents an up-to-date account of fundamental and applied aspects of research into biofertilizers with potential for use as large-scale application as alternatives or supplements to chemical fertilizers. Biofertilizers may more appropriately be called 'microbial inoculants'. Microbial processes are not only quicker and consume less energy than industrial processes, they also have the advantage of diversification into small units to meet the demands of location-specific needs related to agricultural practices of farmers and nations which do not have the possibilities of buying large quantities of imported chemicals. The book provides brief, basic and relevant information into the subjects with appropriate references for both biologists and farm scientists.

Tull, K., M. Sands and M. Altieri, (1987).  
**Experiences in success. Case studies in growing enough food through regenerative agriculture.**  
(English)

Rodale Institute, 222 Main Street, Emmaus, Pennsylvania 18098, USA, ISBN 0-935641-01-7, 53 p, 41 ills. Dfl. 21, -  
*organic farming / sustainable agriculture / agro-forestry / soil conservation / gardening*  
Region: Nepal, Ecuador, Philippines, Rwanda, Chile. Ecozone: subhumid, humid, highlands. Utility: book, policy, international, projects. Satis no.: 404

This nicely illustrated booklet discusses five case studies from Nepal, Ecuador, the Philippines, Ruanda and Chile. It demonstrates the high potential of success for a development approach using 'local, renewable resources and human creativity while combining successful farmer practices with the potentials discovered through science'. The authors have found eight common criteria for success:

- use adaptable technologies that build on traditional practices;
- involve farmers in the design, implementation, management and evaluation of the program;
- coordinate the program with existing governmental activities;
- ensure that the program has an adequate long-term time horizon;
- use visuals and demonstrations in extension process;
- employ people from the local area for program staff;
- use technologies that can be taught one farmer to another;
- insist on follow-up visits.

A booklet of interest to all involved in agricultural development.

Wijewardene, R.; Waidyanatha, P. (1984).

**Conservation farming for small farmers in the humid tropics. Systems, techniques and tools.**  
(English)

Obtainable from: The Marga Institute, P.O. Box 601, Colombo, Sri-Lanka or Commonwealth Secretariat, Malborough House, Pall Mall, London SW1, UK, 39 p., 51 ills, 34 refs., against mailing costs.

*shifting cultivation / erosion control / mulching / land clearing / zero tillage / minimum tillage / herbicide / farmers equipment / alley cropping / Leucaena leucocephala / Gliricidia maculata / fuelwood*

Ecozone: subhumid, humid. Utility: handbook, practical, general. Satis no.: 404

Based on the time-proven practices of bush fallow farming systems, the IITA/Sri Lanka Program developed a new approach to make possible a more permanent way of farming without harmful soil erosion or losing soil fertility. They called this system, which is also of interest to big farmers in the tropics, 'Conservation Farming'. The system is based mainly on no-till farming, green manuring and alley cropping. The book provides a discussion of the techniques of these three methods applied to major tropical row crops (maize, rice, grainlegumes, etc.) and includes recommendations for land preparation, seeding, weed control, soil fertility management and pest and disease management. Much attention is paid to the proper use of herbicides and a working drawing for the construction of a handy 'Rolling Injection Planter' is given.

A shortcoming of this practical and interesting booklet is that no attention is paid to alternatives for the use of herbicides. Most small farmers will not be able to obtain these chemicals the use of which is harmful for both human health and the environment.

World Commission on Environment and Development, (1987).

**Our Common Future**

Oxford University Press, Walton Street, Oxford OX2 6DP, England, 383 pp., many refs. ISBN 0-19-282080-X, Price: £ 4.95.

*economic development / sustainable development / environmental aspects / human ecology / ecosystems / food security / sustainable agriculture / energy / population / industry / urban development*

Utility: book, policy, international, plan of action. Satis no.: 100

This report was made to re-examine the critical environment and development problems on the planet and to put forward realistic proposals to solve

them. Our Common Future serves notice that the time has come for a marriage between economy and ecology.

The book is divided into three parts:

I. Common Concerns: In the view of the Commission, the world's crises, such as the environmental crisis, the development crisis, the food crisis and the energy crisis are not separate crises. They are all one.

We are now forced to consider the impact of ecological stress.

II. Common Challenges: The Commission is optimistic about the future. Provided the political will is available, humanity has the ability to make development sustainable. The Commission reviewed the problems and potential related to population and human resources, food production, species and ecosystems, energy, industry and urbanization.

III. Common Endeavours: Agricultural production will only be sustainable if the resource base is secure. To ensure this, new approaches to food production are necessary: small-scale irrigation systems where the participation of farmers in the management of the water systems is essential; using organic plant nutrients to complement chemicals and pest control based on natural methods; agro-forestry; diverse cropping systems; etc.

We agree that a major shift in policies is a necessary condition for achieving a sustainable and equitable development. This book is one of the major recent signs at international policy level that policy-makers and conventional agricultural institutions are increasingly becoming aware of the importance of sustainability and the need to reduce costs by minimizing the use of external inputs. But to assume that we have the technology at our command is underrating the tremendous effort still required to develop technologies that bridge the opportunity gaps that farmers face in resource poor areas.



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The periodicals are listed in an alphabetical order.



# PERIODICALS

*International and regional periodicals with articles on sustainable agriculture in Third World countries*

## **ABSTRECO,**

Abstract Bulletin on Sustainable Agriculture  
Department of Ecological Agriculture, Haarweg 333, 6709 RZ Wageningen, The Netherlands;

4 issues a year, English;  
Subscription rate for 8 issues: Dfl 40,- for private persons and ideal institutions, Dfl 80,- for other institutions and libraries;

*Abstracts of documents available at the Agriculture University Wageningen on sustainable agriculture in temperate as well as tropical countries.*

## **AGROFORESTRY SYSTEMS,**

an international journal in cooperation with ICRAF

Martinus Nyhoff Publishers, P.O. Box 163, NL-3300 AA Dordrecht, The Netherlands;

Quarterly, 60 - 80 p., English, ISSN 0167-4366;

Subscription rate Vol. 6,7, 1988 (8 issues) Dfl 278,-/US\$ 132,-, plus Dfl 52,-/US\$ 24,- for postage and handling;  
*An international, multidisciplinary journal publishing research on the various aspects of agroforestry.*

## **ALTERNATIVES AGRICOLES**

Groupe d'Etudes et de Services pour l'Economie des Ressources, GEYSER, Vacquières, 34270 St. Mathieu de Treviers, France;

Bi-monthly, 16 p., French;  
Subscription fee 600 F. per year;

*Abstracts of documents and information on alternative agriculture for temperate and tropical regions.*

## **APPROPRIATE TECHNOLOGY**

Intermediate Technology Publications Ltd., 103/105 Southampton Row, London WC1B 4HH, United Kingdom;  
Quarterly, 32 p., English, ISSN 0305 0920;

Subscription rate £12,- for institutions and £10,- for others;

*Appropriate technology in agriculture, small industries, housing, health, etc.. Ridgely illustrated.*

## **AT-SOURCE,**

a quarterly for technology and development

Editors: AGROMISA, ATOL, CICAT and TOOL.

P.O. Box 41, 6700 AA Wageningen, The Netherlands;

Quarterly, English and French, ISSN 0920-7996;

Subscription rate Dfl 25,- per year;  
*Practical information on agriculture, technical and health related topics, including their social implications in Third World situations.*

## **BOS NiEuWsLETTER**

Foundation for Dutch Forestry Development Cooperation, P.O. Box 23, 6700 AA Wageningen, The Netherlands;

2-4 per Annum, English;  
Subscription is part of donorship to Foundation BOS, individuals Dfl. 60,-, Europe Dfl. 50,-, students Dfl. 25,-  
*Information on tropical forestry and agroforestry, practical experiences, short descriptions of projects, new publications, etc..*

## **CATER INFORMATIVO**

Centro Andino de Tecnologia Rural de la Universidad Nacional de Loja, CATER Unidad de Comunicacin, Casilla 399, Loja, Ecuador;

Spanish;  
*Presentation of practical and scientific research of the centre on Andean agriculture.*

## **CERES,**

FAO Review on Agriculture and Development  
FAO Distribution and Sales Section, Via delle Terme di Caracalla, 00100 Roma, Italy. Or the national representative sales organization;

Bimonthly, ca. 50 pages, English, French, Spanish, Arabic, ISSN 00090379;  
Subscription rate US\$ 15,- yearly;  
*Articles on news items, projects, research, new publications and policy programmes related to agriculture in the Third World.*

## **COMMUNAUTES AFRICAINES**

Communautés Africaines, B.P. 5946, Douala-Akwa, Cameroun;  
4 issues per year, 32 pages, French;  
Subscription rates for Cameroun 1400 F CFA individuals, 2000 F CFA for institutions, other countries on request.  
*Practical articles on technology, food processing, agriculture, health and formation for villages, illustrated with practical drawings.*

## **CONSTRUIRE ENSEMBLE,**

le bulletin du CESAO  
CESAO - Centre d'Etudes Economiques et Sociales d'Afrique Occidentale, B.P. 30, Bobo-Dioulasso, Burkina Faso;  
Bimonthly, 20 - 28 pages, French;  
Subscription rate in Africa 2.500 F CFA, farmers 500 F CFA, other countries on request;

*Articles directed on integral development in self-responsibility, education, participation, agriculture, forestry, technology, management for self-help groups.*

## **ECHO DEVELOPMENT NOTES**

ECHO Inc., 17430 Durrance Road, North Fort Myers, FL 33917 USA;  
Quarterly, 6 p., English;  
Subscription rate US\$ 10,-, students US\$ 5,-, people working with small farmers in Third World countries may apply for free subscription;  
*Very practical, applied information for people working with small farmers in Third World countries.*

## **ECOFORUM**

Environment Liaison Centre (ELC), P.O. Box 72461, Nairobi, Kenya;  
Bi-monthly, 16 p., English, French, Spanish;  
ELC members free, local NGO's in development countries on request free, others US\$ 30,- per year;  
*ECOFORUM functions as networking instrument for NGO's around the world to share information and strategies relating to environment and sustainable development issues.*

## **ENTWICKLUNG UND LAENDLICHER RAUM,**

Beiträge zur Internationalen Zusammenarbeit  
DLG-Verlag, Ruesterstrasse 13, D-6000 Frankfurt am Main, F.R. Germany;  
Bi-monthly, 36 p., German, English;  
Annual subscription DM 34,- plus mailing costs;  
*Articles on rural development and agriculture in Third World countries, research, projects, thematic issues.*

## **FARMING for DEVELOPMENT,**

IFAP bulletin serving farmers' organizations  
International Federation for Agricultural Producers (IFAP), 21 rue Chaptal, 75009 Paris, France;  
Quarterly, about 26 p., English and French; Annual subscription free to member organizations;  
*Articles on News of IFAP, Farmers' Organizations, International Research and Development, Co-operatives, Projects, Training and Extension, Practical Farming, Commodities., Women in Agriculture.*  
*International or Regional Information Centres on Appropriate Technologies and Agriculture for Small Farms in Third World Countries.*

## **GATE,**

questions, answers, information  
GATE - German Appropriate Technology Exchange, P.O. Box 5180, Dag-Hammarskjöld-Weg 1, D-6236 Eschborn, F.R. Germany;  
Quarterly, ca. 50 p., English, ISSN 0723-2225;  
Free of charge;  
*Articles on appropriate technology and agriculture in Third World countries, research, new developments, projects, publications.*



## IDEAS AND ACTION

Freedom from Hunger Campaign / Action for Development, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy; Bi-monthly, ca. 28 p., English, French, Spanish; Free of charge; *Reports on projects, programmes, problems, success cases.*

## IFDA DOSSIER

IFDA - International Foundation for Development Alternatives, 4 Place du March, CH-1260 Nyon, Switzerland; Bi-monthly, ca. 100 p., contributions in English, French and Spanish; Subscription fee, North countries: individuals US\$ 32,-, institutions US\$ 128,-; South countries and young people: US\$ 16,-, institutions US\$ 64,-; *Analytic articles and news on politics and ecology in local, regional and global space.*

## IIED PERSPECTIVES

The bulletin of the International Institute for Environment and Development - Earthscan, 3 Endsleigh Street, London WC1H 0DD, United Kingdom; Twice-yearly, ca. 16 p., English; *A bulletin on environment and development, policy, information, activities, organizations.*

## ILCA BULLETIN / BULLETIN DU CIPEA

International Livestock Centre for Africa, Publications Division, P.O. Box 5689, Addis Ababa, Ethiopia; Quarterly, 36-44 p., English, ISSN 0255-0008, French, ISSN 0255-0016; Subscription can be requested free of charge in Africa and on payment outside Africa. Individual copies free. *Contains scientific papers about ILCA's research written by staff scientists and their collaborators from national agricultural research services.*

## ILEIA NEWSLETTER

Informationcentre for Low External Input Agriculture, P.O. Box 64, 3830 AB Leusden, The Netherlands; Quarterly, 24 p., English, ISSN 0920-8771; Subscription rate: individuals and organizations in the Third World and students in industrialized countries Dfl 25,-, others Dfl 40,-. Local organizations and individuals from Third World countries may request free subscription. *Practical articles on methods of sustainable agriculture and strategies on how to introduce these methods in agricultural development, agroeco systems, indigenous knowledge, new publications, networking, thematic issues.*

## INTERNATIONAL AGRICULTURAL DEVELOPMENT

John Madeley, 19, Woodford Close, Caversham, Reading, Berks., RG4 7HN United Kingdom; Bi-monthly, 24 p., English; Subscription price £25 a year; *The magazine serves as a forum for debate on agricultural issues in the developing world. It is a channel through which people can talk to each other about how to increase food output, improve distribution, and create the conditions under which hunger can be overcome.*

## IRED FORUM

IRED - Development Innovations and Networks, 3, rue de Varembe, Case 116, 1211 Geneva 20, Switzerland or from the regional offices of IRED; Quarterly, ca. 80 p., English, French, Spanish; Subscription rate: Europe, USA and Canada US\$ 25,-, Third World US\$ 12,-; *Information on what different groups and networks are doing, references to interesting technologies, tools, methods and documents for action.*

## MINKA,

a favor de una autentica ciencia campesina Grupo Talpuy, Apartado 222, Avenida Centenario 589, San Carlos, Huan cayo, Peru; Three issues per year, 44 p., Spanish; Subscription rate national: 1/.70.-, international: Latin America US\$ 30,-, other countries US\$ 35,-; *Practical articles on rural development, traditional and improved agriculture, technology and health and on cultural integration in the Andes, very well illustrated.*

## PAN EUROPE NEWSLETTER

Pesticides Action Network, PAN Europe Office, Bollandistenstraat 22, B-1040 Brussels, Belgium; Quarterly, ca. 32 p., English; Subscription rates Europe: individuals 300 FB, NGO's 500 FB, others 1000 FB; *Information concerning pesticides, production, trade, use, legislation and alternatives in Europe, EEC and worldwide.*

## PANOSCOPE

The Panos Institute, 8 Alfred Place, London WC1E 7EB, United Kingdom; Bi-monthly, 28 p., English, ISSN 0951-8819; Subscription rates: Institutions, libraries £25,-, NGO's and individuals £15,- per year, free of charge to a limited number of NGO's and decision-makers in developing countries; *Articles on environment and sustainable development in Third World countries, opinions, policy, regional news, NGO news, publications.*

## PERMACULTURE NAMBOUR NEWSLETTER

Permaculture Nambour Inc., P.O. Box 650, Nambour, QLD 4560, Australia; Quarterly, 28 p., English; Subscription fee AUS\$ 12,-; *Practical articles on permaculture, sustainable agriculture for subtropical regions.*

## RESEAUX,

technologie et développement, bulletin du GRET GRET, Groupe de Recherche et d'Echanges Technologiques, Réseaux, Technologie et Développement, 213 rue La Fayette, 75010 Paris, France; Bi-monthly, 8 or more pages, french; Subscription rate 80 FF.; *Short reports and a lot of information on new and old technologies, books and organizations concerning appropriate technology, agriculture, health, construction, etc..*

## SPORE

Technical Centre for Agricultural and Rural Cooperation (CTA), P.O. Box 380, 6700 AJ Wageningen, The Netherlands; Bi-monthly, 16 p., English, French; ISSN 1011-0046; Subscription free of charge for African, Caribbean and Pacific Countries; *Spore is an international bulletin for the dissemination of scientific and technical information on agriculture and rural development to ACP countries, policy, opinion, research, new developments, publications, activities.*

## SUSTAINABLE AGRICULTURE NEWSLETTER

International Development Research Centre (IDRC), Regional Office for South-East and East Asia, Tanglin P.O. Box 101, Singapore 9124, Republic of Singapore; Irregular, ca. 16 p., English; *Thematic issues on technical aspects of sustainable agriculture in the South-East and East Asia region.*

## THE SMALL FARM NEWSLETTER

The Small Farm Newsletter Network, CUSO, 17 Phaholyothin-Golf Village, Phaholyothin Road, Bangkok, Bangkok 10900, Thailand; Irregular, 8 p., English; *Exchange of practical experiences with sustainable agriculture for small farms in Thailand.*

## TRANET

Transnational Network for Appropriate / Alternative Technologies (TRANET), Box 567, Rangeley, ME 04970 USA; Bi-monthly, 20 p., English; Subscription rates: Individuals: 30.00 US\$, Libraries: 50.00 US\$, Organizations: 150.00 US\$. *Short informative notes on developments in appropriate technologies and agriculture*



# Index of Organizations

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The organizations are listed in an alphabetical order.



# ORGANIZATIONS

## AGROMISA FOUNDATION

Duivendaal 5, P.O. Box 41, 6700 AA Wageningen, The Netherlands, Tel. 31.(0)8370 - 12217.

*Non-profit organization of students/graduates in tropical agriculture. Advisory and information service on tropical agriculture and related fields; dissemination in the developing countries. Target group: underprivileged sections of society in Third World.*

*Editor of: 'Agrodoks', practical manuals on agricultural subjects and 'AT-Source', quarterly on technology and development. Both in English and French available. Member of SATIS.*

## APICA

Association pour la Promotion des Initiatives Communautaires Africaines. B.P. 5946, Douala Akwa, Cameroun, Tel. 237.42 12 28, Telex ACHRICHIM 5632 KN.

*NGO active in rural development with focus on appropriate local technology. Documentation centre, training courses, inquiry service, publication of 'Communautés Africaines'. Member of SATIS.*

## AGRECOL DEVELOPMENT INFORMATION

c/o Oekozentrum, CH-4438 Langenbruck, Switzerland, Tel. 41.(0)62.601420.

*Non governmental organization (NGO). Collection and dissemination of information on sustainable agriculture for small peasants in Third World countries. Selective library with scientific and practical literature. Main focus on networking and strengthening cooperation among NGO's working in sustainable agriculture in Asia, Africa and Latin America. Member of IFOAM.*

## ATOL

Study and Documentation Centre on Appropriate Technology in Developing Countries.

Blijde Inkomstlaan 9, 3000 Leuven, Belgium, Tel. 32 (0) 16.224517.

*Inquiry service and bookshop on agriculture, appropriate technology and small scale industrialization; research and consultancies in these fields; funding and collaboration (training, exchange ...) with Third World A.T. Centres.*

*One of the publishers of the periodical 'AT Source'.*

*Member of SATIS.*

## BOS

Foundation for Dutch Forestry Development Cooperation.

De Dorschkamp, Bosrandweg 20, P.O. Box 23, 6700 AA Wageningen, The Netherlands, Tel. 31.(0)8370.95353.

*Contact and Information centre (included inquiry service) on tropical forestry and agroforestry. Publication of 'BOS NiEuWSLETTER' and the series of BOS-documents. Member of TOOL Foundation.*

## CCTA

Commission de Coordinacion de Tecnologia Andina.

Apartado 477, Cusco, or: Horacio Urteaga 452, Lima 11, Peru, Tel. 51.84.224631.

*Coordinator of a network of Andean Organizations involved in rural development.*

*Inquiry service on 'Andean appropriate technology and agriculture'. Research, workshops, training publication. Member of SATIS.*

## CIKARD

Center for Indigenous Knowledge for Agricultural and Rural Development. Dr. D.M. Warren, TSC Program, 318 Curtiss Hall, Iowa State University, Ames, Iowa 50011, U.S.A. Tel. (515) 294-0938.

*CIKARD focusses on preserving and using the knowledge of farmers and rural people around the globe and making the information available to development professionals and scientists.*

*Documentation, recording methodologies, training, research.*

## CODEL

Inc., Environment & Development Program.

475 Riverside Drive, Room 1842, New York, NY 10115 USA, Tel. 1.212.870.3000.

*Clearing house of information on environment and development, training and project assistance.*

## CTA

Technical Centre for Agricultural and Rural Co-operation.

Galvanistraat 9, Ede, or P.O. Box 380, 6700 AJ Wageningen, The Netherlands, Tel. 31.(0)8380.20484, Telex 30169 CTA NL.

*Established under the second ACP-EC Convention of Lom Organization of seminars on Agriculture and Rural Development for African, Caribbean and Pacific (ACP) Countries; Publication and translation of reference books in the field of tropical agriculture and other documents; Publication of the magazine 'SPORE', free Question and Answer Service and document supply service. Public and private foundations/organizations are among the partners of CTA.*

## DCFRN

Developing Countries Farm Radio Network.

c/o Massey-Ferguson Ltd., 595 Bay Street, Toronto, Ontario M5G 2C3, Canada, Tel. 1.416.593.3811, Telex 065-24210.

*Dissemination of information on practical and simple techniques that any farm family in the developing world can use to increase food production. Publication of radio transcripts in English, French and Spanish. Free of charge to rural communicators.*

## ECHO

Educational Concerns for Hunger Organization, Inc.

RR 2, Box 852, North Fort Myers, Florida 33903, USA, Tel. 1.813.997.4713.

*Publication of the bulletin 'ECHO DEVELOPMENT NOTES'; Seed bank for trials; Training for missionaries and development workers; Inquiry service.*

## EAP

Ecological Agriculture Projects.

P.O. Box 191, Macdonald College, Ste-Anne de Bellevue, Québec, Canada H9X 1C0, Tel. 1.514.457.2000 (ext. 190), Telex 05-821788.

*EAP works to promote the development of sustainable food production systems based on ecological principles; provide information and advice to students, the general public, governments, other organizations and industry in Canada and throughout the world.*

## ENDA-TM

Environnement et Développement du Tiers Monde.

B.P. 3370, Dakar, Sénégal, Tel. 221.21 60 27.

*Research; Workshops; Training; Publication; Inquiry service on environment, development and sustainable food production.*

*Member of SATIS. Other ENDA offices are in Zimbabwe, India, Mauritius, Morocco and Colombia.*

## ENDA-CARIBE

Environnement et Développement du Caribe.

Apartado 21000, Huacal, Santo Domingo, Republica Dominicana.

*Research; Workshops; Training; Publication; Inquiry service on environment, development and sustainable food production.*

*Member of SATIS.*

## NATURAL FARMING

Masanobu Fukuoka, 201-2 Taiheiko, Iyo-shi, Ehimeken, Japan.

*Information on natural farming, training and local research. Activities in different agro-ecosystems in the Third World. Publication of books.*



**GATE**

German Appropriate Technology Exchange.  
P.O. Box 5180, D-6236 Eschborn, FR Germany, Tel. 49.(0)6196-790-1, Telex 41523-0 (GTZ D).  
*Part of the governmental organization GTZ; Dissemination and promotion of appropriate technology for developing countries. Publication of the bulletin 'GATE - questions, answers, information'. Free inquiry service. Member of SATIS.*

**GEYSER**

Groupe d'Etudes et de Services pour l'Economie des Ressources.  
Vacquières, 34270 St. Mathieu de Treviers, France. Tel. 33.67.59.03.29.  
*Collection and dissemination of information on alternative agriculture for temperate as well as tropical regions; Publication of 'Alternatives Agricoles'; Photocopy service. Networking with Latin American NGO's on methodological aspects of rural development. Systematization and dissemination of experiences.*

**GRET**

Groupe de Recherche et d'Echanges Technologiques.  
213, rue La Fayette, F-75010 Paris, France, Tel. 33.1.42 39 13 14, Telex 212890.  
*Appropriate technology and agriculture for Third World countries. Exchange and communication service: documentation, training, publications, support to the constitution of relays and networks, audiovisuals. Technical support and evaluation of field projects. Publication of 'Réseaux - la lettre du GRET'. Member of SATIS.*

**HEIFER**

Project International.  
P.O. Box 808, Little Rock, Arkansas 72203 USA.  
*HEIFER assists NGO's and community groups in Third World countries with resources and technical assistance for improved livestock management. Inquiry service on livestock management.*

**IASA**

International Alliance for Sustainable Agriculture.  
Newman Center, University of Minnesota, 1701 University Ave. SE., Room 202, Minneapolis, Minnesota 55414 USA, Tel. 1.612.331.1099.  
*IASA is a NGO with the mission to promote sustainable agriculture worldwide. The alliance conducts research, produces a variety of publications and is active to develop sustainable agriculture policy. Publication of a.o. 'Breaking The Pesticide Habit, alternatives to 12 hazardous pesticides'.*

**IBRA**

International Bee Research Association.  
18 North Road, Cardiff, CF1 3DY, United Kingdom, Tel. 44.222.372409 or 372450, Telex 051.23512 MONEF REF 8390.  
*International clearing house for scientific and technical information on honeybees. Free book service and information service. Publication of a.o. a free Newsletter for beekeepers in tropical and subtropical countries. Inquiry service on bees and beekeeping.*

**ICDA SEEDS CAMPAIGN**

Apartado 23398, 08080 Barcelona, Spain, Tel. 34.3.302.64.95 (as per June, 1st, 1988).  
*Coordination centre of groups active in genetic conservation; information network on biotechnology, seed industry, patenting, specific campaigns. Publication of the bi-monthly bulletin 'Seedling' and the book 'New Hope or False Promise? Biotechnology and Third World Agriculture' (several languages), and a forthcoming Biotechnology Resource Kit.*

**IFAP**

International Federation of Agricultural Producers  
21 rue Chaptal, 75009 Paris, France, Tel. 31.1.4526 0553, Telex 281210.  
*The organization is composed of 59 national-level representative farmers' organizations in 45 countries. It is helping agricultural producers in the Third World through a direct farmer-to-farmer approach. Projects to help strengthen farmers' organizations; Advisory services; Training seminars and workshops; Information and publication of a.o the periodical 'Farming for Development'.*

**ILEIA**

Informationcentre for Low-External Input Agriculture  
P.O. Box 64, Kastanjelaan 5, 3830 AB Leusden, The Netherlands, Tel. 31.(0)33.943086, Telex 79380 ETC NL.  
*Collection and dissemination of information on low-external input agriculture for Third World countries. Publication of the 'ILEIA Newsletter' and Bibliographies. Organization of workshops; Inquiry service in cooperation with TOOL Foundation. Courses in ecological agriculture by AME (Agriculture, Man and Ecology) in cooperation with 'Gloria land', Pondicherry, India and organizations in Africa.*

**ITARA**

Information, Etude en Technologie Approprié, Rural et Artisanale.  
Rue du Mont Huy, B.P. 1295, Kigali, Rwanda, Tel. 251.7.39.61  
*ITARA elaborates projects from the*

*base, presents projects to funding organizations, promotes appropriate technologies responding to expressed needs, provides services in agriculture, crop and food processing, construction, alternative energy. Research and training, documentation, inquiry service. Member of SATIS.*

**NATURE ET PROGRES**

Commission Tiers Monde. 40 Route de Rouen, F-80500 Montdidier, France, Tel. 33.22.78 04 66.  
*A commission for ecological agriculture in the Third World of the Association for Biological Agriculture in France. Publication, networking, training, inquiry service, project assistance.*

**ODI**

Overseas Development Institute, Four Units, Regent's College, Inner Circle, Regent's Park, London NW1 4NS, U.K. Tel. 44 (0)1- 487-7413. Telex 297371 ODI H5673.  
*Digests the findings of research and disseminates them to interested professionals; exchange of information and ideas; publications, seminars, network of researchers. Four Networks: Agriculture Administration and Extension (lately focussing on links between agricultural research and Farmer Participatory Research and Indigenous Technical Knowledge); Irrigation Management; Social Forestry; Pastoral Development. Members obtain the Network papers regularly; Membership of the Networks can be requested free of charge.*

**PEACE CORPS**

Information Collection and Exchange. Office of Training and Program Support,  
806 Connecticut Ave., NW, Washington, D.C. 20526, USA, Tel. 1.202.254 7386.  
*Collection, compilation, publication and distribution of information on appropriate technology, agriculture, healthcare, project planning, etc.. Publications are available through the National Technical Information Service (NTIS), 5285 Port Royal, Springfield, Virginia 22161 USA. Training, Inquiry service.*

**RAFI**

Rural Advancement Fund International. R.R. 1 (Beresford), Brandon, Manitoba, Canada R7A 5Y1, Tel. 1.204.483.3955.  
*RAFI works for the conservation of genetic resources within the broader framework of rural development, at local, regional, national and international levels. Critical assessment of biotechnology and its impact on Third World countries. Research, publication, public education, lobbying, consulting on both policy and technical matters.*



## RESADOC

Réseau Sahélien d'information et de documentation scientifique et techniques.

Institut du Sahel, B.P. 1530, Bamako, Mali.

*Exchange of scientific and technical information on food self-sufficiency and restoration of the sahelian environment. Training and inquiry service.*

## RODALE INTERNATIONAL

222 Main Street, Emmaus, PA 18049 USA, Tel. 1.215.967 5171. Tex. 6503141861

*MCI Implementation of research, training and policy discussions in cooperation with Third World organizations, publishing on 'Regenerative Agriculture' a.o. 'Experiences in Success, Case Studies in Growing Enough Food Through Regenerative Agriculture' and 'International AgSieve' newsletter. Publications directly available at regional centres in Senegal, Kenya and Ecuador.*

## SKAT

Swiss Centre for Appropriate Technology.

Varnbelstrasse 14, CH-9000 St.Gallen, Switzerland, Tel. 41.71.30 25 90.

*Consultancies, studies, documentation, publication, selling of books, technical inquiry service on appropriate technology and rural development. Member of SATIS.*

## SUSTAINABLE AGRICULTURE INFORMATION PROJECT

University of California, Agroecology Program  
Santa Cruz, California 95064 USA, Tel. 1.408.429 4140.

*Dissemination of information on sustainable agriculture from temperate and tropical countries to agriculture practitioners, researchers, teachers and advisors. Documentation, networking, inquiry service.*

## TOOL FOUNDATION

Technical Development with Developing Countries.  
Entrepôtdok 68a/69a, 1018 AD Amsterdam, The Netherlands. Tel. 31.(0)20.264409.

*Publication of the periodical 'AT Source, a quarterly for development' and other technical documents, library, inquiry service, technical development cooperation; Selling of publications from SATIS member organizations and others; Coordination of the activities of different professional volunteer groups like Agromisa and BOS which a.o. participate in the inquiry services. Member of SATIS.*

## International Networks

### ELC

Environment Liaison Centre, P.O. Box 72461 Nairobi, Kenya, Tel. 24770/340849/336988/9, Telex 23240 envicente.

*ELC is an international NGO network concerned about environment and development particularly in the Third World. The main objective of ELC is to strengthen communication and cooperation between its member organizations. Publication of the periodical 'Ecoforum' and many reports, directories and occasional papers a.o. 'Safe Pest Control, an NGO Action Guide'. Organization of international workshops and conferences.*

### IFOAM

International Federation of Organic Agriculture Movements c/o kozentrum Imsbach, D-6695 Tholey-Theley, R.F. Germany, Tel. 49.(0)6853.5190.  
*Networking, information exchange, publication, coordination, policy. Organization of international conferences on organic farming for temperate as well as for tropical countries.*

### PAN

Pesticides Action Network International  
A global network of NGO's and individuals. PAN International as such has no office. Regional contact points are its member organizations like PAN Europe, Bollandistenstraat 22, B-1040 Brussels, Belgium, Tel. 32.2.735 24 31.  
*A worldwide network of groups and individuals who are opposed to the irrational spread and misuse of poisonous pesticides. Activities of PAN are a.o. directed on legal restriction of dangerous pesticides, import-export regulations, FAO Code of Conduct, public information on negative effects of pesticides and possible alternatives (Dirty Dozen Campaign). PAN is organized on national, regional and international level.*

### SAN Seeds Action Network

Intenational A wide umbrella coalition of many groups that pursue their own programmes with their own capabilities.  
SAN International as such has no office. Regional contact points are a.o. ELC (Africa); SIBAT, P.O. Box 375, Manila, The Philippines, Tel (63/2) 401120 (Asia); ICDA Seeds Campaign (Europe, Australia and New Zealand); RAFI (North America).  
*SAN is a global network of NGO's and individuals, fighting together to prevent the erosion of genetic diversity and to promote popular control over genetic resources. SAN brings people together to share experiences and forge*

*common strategies. Organizations of meetings, workshops and expanding communication links among members.*

**SATIS** Socially Appropriate Technology International Information Services.  
P.O. Box 803, 3500 AV Utrecht, The Netherlands, Tel. 33.(0)30.328092.  
*Coordination of the activities of member groups which are active in collection, exchange and dissemination of information on socially and ecologically appropriate and appropriate technologies. Publication of SATIS catalogue 1988, the list of all publications available in the bookshops of SATIS members like APICA, ATOL, CCTA, ENDA, ENDA Caribe, GATE, GRET, SKAT and TOOL. Publication of the SATIS Classification System, the documentation system used by the SATIS members. SATIS operates a book tokenscheme, to ease problems of foreign currency and payments from SATIS bookshops.*



## International Agricultural Research and Development Centers (IARC's)

Most of the IARC's are starting to recognize that sustainable agriculture is a valuable approach to agricultural development and are making it as one of the main focus points of their programmes. IARC's are major publishers of books, periodicals, slide sets, films and other educational materials on agricultural science and technology for developing countries. Information on these publications can be obtained directly from the IARC's (see addresses).

A catalog of the publications of the IARC's is published by:

IRRI (1985)

### Publications of the International Agricultural Research and Development Centers (en).

IRRI, Division 1, Communication and Publications Department, P.O. Box 933, Manila, Philippines. ISBN 971-104-122-7, 560 p., 1200 titels, price US\$ 10.20.

CIAT / CIP / CIMMYT / IBPGR / ICARDA / ICRIASAT / IFPRI / IITA / ILCA / ILRAD / IRRI / ISNAR / AVRDC / ICIPE / ICIMOD / ICLARM / ICRAF / INTSOY / WINROCK / BOSTID / GTZ

Utility: catalog, abstracts, prices, ordering instructions.

A second part of this catalog with new publications is also available from IRRI.

Some of these IARC's are:

**CIAT**, Centro Internacional de Agricultura Tropical.

Apartado Aereo 6713, Cali, Colombia, Tel. 689343, Telex 05769 CIAT CO. Research on Phaseolus beans, Cassava, Rice, Tropical pastures.

**CIMMYT**, Centro Internacional de Mejoramiento de Maize y Trigo.

Lourdes 40, Mexico 6, D.F., Mexico, Tel. (905) 585-4355, Telex 383-1772023 CIMTME

Research on Wheat, Maize, Triticale Barley.

**CIP**, Centro Internacional de la Papa. Apartado 5969, Lima, Peru, Tel. 350266, Telex 25672 PE. Research on Potato.

**ICARDA**, International Center for Agricultural Research in the Dry Areas. P.O. Box 114/5055, Aleppo, Syria, Tel. 50465/51280, Telex 924-331206. Research on Farming Systems (Dry areas of N. Africa, Middle East), Barley, Lentils, Broadbeans, Wheat, Chickpea.

**ICRISAT**, International Crops Research Institute for the Semi-Arid Tropics. Patancheru, P.O., Andhra Pradesh 502324, India, Tel. 262251, Telex 0125-203 and 0155-366

Research on Farming Systems (Semi-arid tropics), Sorghum, Pigeonpea, Groundnuts, Millet, Chickpea.

**IITA**, International Institute of Tropical Agriculture

P.O. Box 5320, Oyo Road, Ibadan, Nigeria, Tel. 413440, Telex 31417 TROPIC

Research on Farming Systems (Africa), Rice, Maize, Cassava, Cocoyam, Cowpea, Yam, Sweet potato, Soybean.

**ILCA**, International Livestock Centre for Africa.

P.O. Box 5689, Addis Ababa, Ethiopia, Tel. 183215/183222/182455, Telex 21207 ILCA ADDIS.

Research on Livestock production systems in Africa

**IRRI**, International Rice Research Institute.

P.O. Box 933, Manila, Philippines, Tel. 884869, Telex (ITT) 45365 RICE INST PM. Research on Rice

**WARDA**, West Africa Rice Development Association.

P.O. Box 1019, Monrovia, Liberia, Tel. 221466/221963, Telex 937-4333 Research on Rice.

**CATIE**, Centro Agronomica Tropical de Investigation.

Turrialba, Costa Rica.

Research on Tropical agriculture and Agroforestry

**ICIPE**, International Center of Insect Physiology Ecology.

P.O. Box 30772, Nairobi, Kenya.

Research on Insect pests.

**ICRAF**, International Council for Research in Agroforestry.

P.O. Box 30677, Nairobi, Kenya, Tel.

(254-2) 521450, Telex 22048

Research on Agroforestry

**NFTA**, Nitrogen Fixing Tree Association

P.O. Box 680, Waimanalo, Hawaii 96795 USA.

Research on Nitrogen fixing trees.

**FAO**, Food and Agriculture Organization of the United Nations Via delle Terme di Caracalla, 00100 Rome, Italy. Tel. 39.6.57973215, Telex 610181 foodagri.

Tropical agriculture, policy, research, projects.

Documents can be ordered from the national FAO Sales Agent or directly from FAO Distribution and Sales Section.

**BOSTID**, Board on Science and Technology for International Development

2101 Constitution Avenue, Washington, D.C. 20418, USA.

Publications of the National Academy of Sciences can be requested by Third World organizations free of charge.

Individuals and organizations from industrialized countries have to order from local sales agents like TOOL, SKAT, I.T. Publications (9 King Street, London WC2E 8HW, England) or Winrock International (1611 North Kent Street, Arlington, VA 22209, USA).

### AGRECOL Publications

Gaby Stoll, 1986. **Natural Crop Protection, based on local farm resources in the tropics and subtropics.** English. French and Spanish editions will be available end 1988.

Available from TRIOPS, Tropical Scientific Books, Raiffeisenstr. 24, 6070 Langen, F.R. Germany. ISBN 3-924333-43-2, 186 p, 200 ills, 165 refs, price US\$ 12.00.

*A practical guide on how to protect crops in the field or in storage with natural and local farm resources.*

### ILEIA Publications

Hans Carlier, 1987. Understanding Traditional Agriculture, a bibliography for development workers.

### ILEIA Newsletter

Back issues:

No.2: **Soil Fertility**, as long as available); No.3: **Agroforestry** (free, as long as available); No.4: **Participatory Approaches** (free, as long as available) No.5: **Dry land management**, Indigenous Knowledge (Dfl 10,-); No.6: **Integrated Pest Management**, Traditional Agriculture, Natural Crop Protection (Dfl 10,-); Vol.3, No.1: **Integrated Nutrient Supply**: Improved Fallow, Legumes, Knife Roller, Rock Phosphate, Soil Conservation (Dfl. 10,-); Vol.3, No.2: **Diversity: Traditional Agroecosystems, Seed Supply, Woody Biomass Systems** (Dfl 10,-); **Vol.3, No.3: Microclimate Management: Brundtland Report**, Traditional Knowledge, Microclimate in India, Mulching, Zero Tillage, Farmers Participation and Extension (Dfl 10,-); Vol.3, No.4: **Livestock as part of the Agroecosystem**: Traditional Resource Use by Cattle Keepers, Crops and Livestock, Poultry Keeping, Animal First Aid Workers (Dfl 10,-); Vol.4, No.1: **Mountain Agriculture**: Thinking like a Mountain, Land Degradation, Sloping Agricultural Land Technology, Intercropping, Community Forestry, Technology Development by Farmers (Dfl. 10,-).