

Food from Dryland Gardens: An Ecological, Nutritional, and Social Approach to Small-Scale Household Food Production, by David A. Cleveland and Daniela Soleri, 1991. xiii, 387 pp. Tucson, AZ: Center for People, Food and Environment (with support from the United Nations Children's Fund [UNICEF]). ISBN:978-0962799709.

Selected excerpts from published reviews

Choice (Current Reviews for College Libraries), March 1992, by R.P. Poincelot

A *Choice* Outstanding Academic Book, 1992

This book presents the first attempt to look at sustainability at the garden level in developing countries....Although the book concentrates on applications in dryland areas, much of the information would be useful in areas with more water resources....Recommended highly for academic and special libraries concerned with agriculture, horticulture, developing countries, and food.

Ceres, The FAO Review, July-August, 1992, by Julia Rossetti

To its great merit, *Food from Dryland Gardens* takes the need for indigenous gardens and building on existing knowledge as cardinal principles.... An understanding of power relationships and the impact they have on development projects informs the book throughout—a pleasant change from many technical handbooks that seem too timidly anxious to avoid such delicate subjects.... deserves to be widely distributed.

It can be helpful in industrialized (not by chance was it produced in Arizona, one of the driest US states) as well as developing countries. The authors are to be congratulated for the constant concern they show for the environment—both physical and social. Top marks too for Soleri's illustrations, as well as the full and useful annotated bibliography.

Appropriate Technology 18(4), March 1992, by Ann Waters-Bayer

Although their focus is on gardening, much of what they write also applies to small-scale mixed cropping in such areas....Their book is well researched and covers an amazingly wide range of findings and experiences from the 'Third' and the industrialized world. These are enriched by their own experience in working with smallholders in West Africa, and with indigenous peoples in the USA....this book belongs in the (mini) libraries of organizations concerned with people-oriented agricultural development; and it deserves to be referred to frequently. In particular, project workers and extensionists at field level will find it useful.

It would also make a good text for secondary schools and agricultural colleges. *Food from Dryland Gardens* is a breath of fresh air in this age of incessant ecophilosophical discussion about sustainability. It successfully synthesizes practical guidelines with a consistent ecological orientation, and an understanding of the needs and culture of people living in the midst of the 'marginal' areas which make up such a large part of the world.

Practicing Anthropology (Society for Applied Anthropology) 14(1), by John van Willigen

It would also be useful for anthropology students interested in technical preparation in gardening as part of their pre-practice training in agricultural development or as a supplementary text in agricultural or nutritional anthropology courses. The book is remarkable in terms of the level of integration that it achieves. While the heart of the book is a readable, technical account of dryland gardening, it also provides effective advice on social research and development theory. It is oriented toward sustainability in both an ecological and social sense.

Agroforestry Today (ICRAF—International Centre for Research in Agroforestry), July-September 1992, by Emmanuel Torquebiau

The first three chapters are excellent. They detail the nutritional and economic value of gardens and give some guidelines for analysing an existing situation and the state of local knowledge before planning garden development. The rest of the book contains a wealth of information on garden management. This includes plant propagation, pruning, soils, water management, pests and diseases, and harvesting....highly recommended.

Biological Agriculture and Horticulture 8(3), 1992

Although written primarily for those working in international development in the Third World, *Food From Dryland Gardens* will be of value to all those interested in small-scale, ecologically based, environmentally-sound food production, particularly in dry climates....It not only very effectively reviews the field that it seeks to cover, it will also be of value in many other contexts.

HortIdeas 8(4), April 1991, by Greg and Pat Williams

This book works—really works—on several levels relevant to gardeners in developed, as well as developing, countries: it reveals the inequities of development ideas imposed by outsiders, it shows how to implement and alternative cooperative approach to sustainable development, and it explains in highly practical terms how to garden better.

Whole Earth, No. 73, Winter 1991, by Peter Warshall

David Cleveland and Daniela Soleri are among the best of the nouveau eco-developers. Their book gives the Big Picture so that readers are always aware how small acts fit or don't fit into the larger picture. Their book is practical—a breath of fresh air compared to the jargon-filled tracts on how to be successful in the foreign-assistance profession. From vitamins to vegetative propagation, from marketing to salt burn, this is the first major book on dryland gardens....*Food From Dryland Gardens* sets the example for all people-focused garden and agroforestry books in the future

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SCIENCE & TECHNOLOGY Biology Botany

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Cleveland, David A. **Food from dryland gardens: an ecological, nutritional, and social approach to small-scale household food production**, by David A. Cleveland and Daniela Soleri. Center for People, Food, and Environment, 1991. 387p bibl index afp ISBN 0-9627997-0-X pbk, \$25.00

The search for a sustainable agriculture is a global one. Most efforts have been directed at large-scale agriculture, both in the industrialized nations and the Third-World countries. This book presents the first attempt to look at sustainability at the garden level in developing countries. Poorer families are often crucially dependent on such gardens for food and income. Although the book concentrates on applications in dryland areas, much of the information would be useful in areas with more water resources. Information is divided among four modules: gardens as a development strategy, garden management, garden harvest, and resources. Topics include nutrition, economics, marketing, assessment, gardening practices, and harvest methods. The thrust of this book is to provide a manual for those professionals helping poor families to achieve local self-reliance. Recommended highly for academic and special libraries concerned with agriculture, horticulture, developing countries, and food.—*R. P. Poincelot, Fairfield University*

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303

Ceres

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Tropical gardening as if local conditions mattered

Food from dryland gardens, by David A. Cleveland and Daniela Soleri, Center for People, Food and Environment, Tucson, Arizona, USA, 1991, 387 pp., ISBN: 0-9627997-0-X.

The path to improved family nutrition is lined, it seems, with abandoned kitchen gardens. Yet 30 years ago gardening was hailed as one of the best ways to raise the nutrition levels, not only of rural families, but of the burgeoning populations of Third World cities.

Gardens were proposed as a useful extra source of income, if the right marketing arrangements could be made. Projects abounded to set up home and community gardens in Kenya, India, Mexico and elsewhere. Donor agencies were attracted by gardening's apparent feasibility, the relatively small investment required, and the fact that the main beneficiaries were to be women and children. Gardens were

started, some with good initial results, and abundantly photographed for the donors. Who can't recall those pictures of Ghanaian or Peruvian children, triumphantly holding aloft a bunch of carrots?

It wasn't long, however, before disillusionment set in. Gardeners' initial enthusiasm waned all too rapidly and, especially after the withdrawal of external support, their gardens soon withered and died. A study by Carolyn Peduzzi in 1990, on behalf of the International Science and Technology Institute in Washington, singled out seven major categories of constraints that accounted for the failure of home gardens, ranging from environmental factors (difficult access to water, poor soils) to human nature (conflicting activities, attrition, local perceptions), and including poor extension support, lack of inputs and the absence of systematic information sharing.

Renewed Interest

Recently, there has been a renewed interest in home gardens, perhaps not least because of their growing importance in the industrialized countries. A survey of more than 10 000 households reported in the United States showed 27 per cent used homegrown vegetables—and saved 22 per cent of the expenditure on vegetables by non-gardening households. Other studies showed gardening was equally popular in Britain and Poland. Fear of pesticides used in commercial products was doubtless an important factor.

Development agencies began to re-assess home gardens, exerting more serious efforts to understand past mistakes and how to rectify them. What, for example, lay behind the "human nature" constraints identified by Peduzzi? The realization grew that it had much to do with the ethnocentric orientation of home garden projects, which were usually modelled on Western society's practices, tastes and resources. Clearly, gardens based on people's existing knowledge and resources and adapted to local needs stood a much greater chance of success. At the same time, there was a rising interest in indigenous plants and trees—their roots, flowers, leaves and stems—and a fresh awareness

of their potential nutritional or medicinal properties.

To its great merit, *Food from Dryland Gardens* takes the need for indigenous gardens and building on existing knowledge as cardinal principles. It also offers an unusual combination, providing not only useful advice on setting up and managing a garden, but also on the nutrient value of foods (energy, protein, vitamins, iron, etc.) and recommended dietary allowances (RDAs). This technical information is placed firmly in an environmental and sociological context, at both international and community levels. It isn't surprising that the resulting hefty tome is praised by UNICEF Executive Director James P. Grant as "an important milestone in strengthening our understanding of and support for households in the Third World".

One of the book's main goals is to help readers (who ought to include any extension worker worth his salt) to observe and work with local people and ask appropriate questions about their community, environment and the potential for gardens to improve their lives. The authors stress that appropriate solutions can only be worked out on the basis of such knowledge, and one of the book's most interesting parts deals with "assessment techniques".

A major problem in the past has been the very definition of "garden". Cleveland and Soleri found officials and nutritionists in Egypt who were using a term for kitchen gardens that in Arabic actually means "formal, pleasure gardens". Small wonder that villagers, asked if they had gardens, would say no!

To prevent misunderstanding due to biases or limited language skills, the manual advises that more than one person should translate an interview—conducted, say, in Hausa—after which a separate group should translate the interview back into the original language. Failure to "back translate" is a cause of much inaccurate information being spread about, which can put a project on a bad footing from the start.

The authors suggest observers ask themselves some key questions before formulating a project: Which households are gardening? Do they belong to a particular social, eco-

nomie or ethnic group? Where are the gardens located, next to houses, in fields, along canals or in a community garden area? Who controls access to land and water? What are the daily and seasonal garden schedules? Where do planting materials come from? Which foods are eaten and which sold? Who controls the income and what is it used for?

An understanding of power relationships and the impact they have on development projects informs the book throughout—a pleasant change from many technical handbooks that seem too timidly anxious to avoid such delicate subjects. It is essential to know the social dynamic of a household when calculating potential nutritional benefits for its members. Often the adult men eat first, then the older women and only then the younger women and their small children—whose bargaining power in the family is weakest.

Nutrition education

The importance of nutrition education is underlined, with examples of a project in Nigeria where it was included and one in Senegal where it wasn't. The Senegal project was found, 20 years later, to have had no nutritional impact on the family, while that in Nigeria reduced child deaths due to malnutrition by between six and 10 per cent in only three years.

Nutrition education is all the more important now, to counter increasing consumption of "prestige" foods associated with a modern lifestyle, many of which are less nutritious than local foods. The authors cite northeast Brazil, where vitamin A deficiency is high. Education is required to counteract the tendency to replace local fruits and vegetables high in vitamin A with fruits and vegetables from the southern part of the country, more popular because they are associated with a more affluent region.

While much of the book deals with technical details of production and management of food plants, there is a useful chapter on processing, storing and marketing, quoting successful examples of such local practices as drying onions in Mali, or the fermentation of mustard, radish and cauliflower leaves in Nepal to make a condiment.

A chapter on foods that are good

for weaning babies gives specific information on the nutritional content of such plants. For example, the leaves of dryland garden plants such as jute, pumpkin and cassava contain 20 to 30 per cent protein when dried, and in this form can easily be added to weaning porridge in the last few minutes of cooking. A new edition might usefully extend this analysis to include the fruits and vegetables discussed in other chapters. It would be helpful to have choices of vegetable crops for nutritional purposes indicated in Part II, on garden management. Similarly, hints on which fruits and vegetables to save, in what quantities and forms for which nutritional purposes would be useful in Part III, on harvesting and marketing.

Measurements could also be given more often in "pinches" or "handfuls", since many Third World gardeners don't have scales or measuring instruments in either metric or imperial measure. But these are small criticisms of a book which deserves to be widely distributed. It can be helpful in industrialized (not by chance was it produced in Arizona, one of the driest US states) as well as developing countries.

The authors are to be congratulated for the constant concern they show for the environment—both physical and social. Top marks too for Soleri's illustrations, as well as the full and useful annotated bibliography. The book was produced by the Center for People, Food and Environment (CPFE), a non-profit organization devoted to research, education and action for sustainable food systems. CPFE is anxious to receive comments and suggestions to incorporate in future editions. Write them at: CPFE, 344 South Third Ave., Tucson, Arizona, 85701 USA.

Julia Rossetti

APPROPRIATE TECHNOLOGY

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Book Reviews

Food from Dryland Gardens: an ecological, nutritional, and social approach to small-scale household food production*

David Cleveland and

Daniela Soleri

Center for People, Food and Environment, 344 South Third Avenue, Tucson, Arizona 85701, USA, 1991. 387pp. Hbk. £19.99.

The cover photo of *Food from Dryland Gardens* sums up what household food production is all about: making optimal use of every possible niche, including employing one's thatch-roofed house as a trellis for climbing plants. The book deals, primarily, with gardening on the basis of local resources, including indigenous knowledge and the biological diversity of traditional crops, in order to produce food for household needs and local markets. The authors' definition of drylands includes deserts and savannas as well as sub-humid regions with a dry season of several months. Although their

focus is on gardening, much of what they write also applies to small-scale mixed cropping in such areas.

The first part of the book deals with household gardening as a development strategy. It explains some basic principles of nutrition and economics applied to gardening in marginal environments with limited resources; and suggests how communities can assess the appropriateness of garden projects.

The largest section is devoted to garden management: basic biological principles for managing plants (including trees), water, soils, pests and diseases are explained clearly and in simple terms, pointing out the practical applicability of this information. Specific techniques are described, but attention is repeatedly drawn to the need for experimenting, observing, discussing with other gardeners, and adapting techniques to local conditions.

The third section covers harvesting, processing, storing and marketing garden products, including saving and storing seed for future planting. One chapter is devoted to weaning foods, which the authors regard as one of the

most important dietary contributions gardens can make.

The guide to further reading contains very useful annotations of selected books, indicating the relative strengths of the writings and the basic assumptions on which they are based.

The authors clarify the relationships between soils and plants, on the one hand, and human nutrition and health, on the other. Their book is well researched and covers an amazingly wide range of findings and experiences from the 'Third' and the industrialized world. These are enriched by their own experience in working with smallholders in West Africa, and with indigenous peoples in the USA.

In their enthusiasm for promoting gardening, the authors never lose sight of the fact that this is just one of many household activities, and that planning the use of resources — including labour — must always take this into account. They give attention not only to the biophysical and technical aspects of gardening, but also to the social organization of production and to maintaining local control over resource management. They stress the importance of respecting and building on local knowledge, rather than depending unduly on external 'expertise', and give numerous examples of indigenous methods of plant and water

management, and food processing; the techniques they suggest usually involve the use of implements and containers which can be made locally. Yet — in the midst of all this 'small is beautiful' — it is somewhat surprising to see the lengthy boxes about calculating water requirements and irrigation efficiency for large garden projects.

Despite its bulky size, this book belongs in the (mini) libraries of organizations concerned with people-oriented agricultural development; and it deserves to be referred to frequently. In particular, project workers and extensionists at field level will find it useful. It would also make a good text for secondary schools and agricultural colleges.

Food from Dryland Gardens is a breath of fresh air in this age of incessant ecophilosophical discussion about sustainability. It successfully synthesizes practical guidelines with a consistent ecological orientation, and an understanding of the needs and culture of people living in the midst of the 'marginal' areas which make up such a large part of the world.

Ann Waters-Bayer

PRACTICING ANTHROPOLOGY

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SOURCES

An Archive Collection of Applied Anthropology Materials
Edited by John van Willigen



40

PRACTICING ANTHROPOLOGY

Vol. 14 No. 1, Winter 1992

Other Sources

The Center for People, Food and Environment, with support from UNICEF, has published *Food from Dryland Gardens, An Ecological, Nutritional, and Social Approach to Small-Scale Food Production*, written by anthropologist/biologists David A. Cleveland and Daniela Soleri. This manual was prepared for field workers, extension agents, project workers, and program planners in Third World settings. It would also be useful for anthropology students interested in technical preparation in gardening as part of their pre-practice training in agricultural development or as a supplementary text in agricultural or nutritional anthropology courses. The book is remarkable in terms of the level of integration that it achieves.

While the heart of the book is a readable, technical account of dryland gardening, it also provides effective advice on social research and development theory. It is oriented toward sustainability in both an ecological and social sense. The section on nutrition is also well developed. The book includes the following chapters: gardens and nutrition in drylands;

gardens, economics and marketing; assessment techniques; how plants live and grow; growing plants from seeds; vegetative propagation; plant management; soils in the garden; water, soils, and plants; sources of water for the garden; irrigation and water lifting; pest and disease management; saving seeds for planting; processing, preserving and marketing garden harvest; and weaning foods from the garden. There is also a significant reference section including a glossary and sections entitled resources, organizations, and references. The book makes very effective use of recent case materials from both field observation and the literature. The core narrative is effectively supplemented with "emphasis boxes" and line drawings.

This book is available to readers from the industrial world for \$25 a copy plus \$2.50 shipping [\$3.75 to Canada and \$4.20 outside the United States and Canada]. The Third World price is \$15. Volume discounts are available. Mail orders can be placed with the Center at 344 South Third Avenue, Tucson, Arizona 85701. Readers can fund copies to be sent gratis to community workers. ■

Agroforestry

TODAY

July—September 1992

Volume 4 Number 3

Reading for Agroforesters

Food from dryland gardens, by David A. Cleveland and Daniela Soleri. 1991. Tucson, Arizona (USA): Centre for People, Food and Environment, 401 pp. ISBN 0-96279-970-X. Price: US\$25 plus shipping, discounts available.

Increasing evidence points to the crucial role of household gardens in the nutritional, economic and social well-being of poor families in developing countries. Yet these small, but intensive production systems have often been neglected by development planners. Starting from this premise, Cleveland and Soleri have written a book for extensionists and development workers that explains the main attributes of household gardens and how to manage them. Such gardens include trees as well as crops and are thus of interest to agroforesters, who often call them 'home gardens'.

The book focuses on gardens in the drylands, areas where lack of water limits plant growth several months of the year. These areas are precisely where gardens have an important potential: because they are small and usually near the house, they can be managed intensively to overcome environmental hazards, particularly water stress.

The first three chapters are excellent. They detail the nutritional and economic value of gardens and give some guidelines for analysing an existing situation and the state of local knowledge before planning garden development.

The rest of the book contains a wealth of information on garden management. This includes plant propagation, pruning, soils, water management, pests and diseases, and harvesting.

Unfortunately, these sections are somewhat marred by their generality. Since the book covers both tropical and temperate regions—for example, describing apricot and mango production in the same breath—it is not altogether appropriate for any single place. Information on the production of small animals in gardens, such as chickens or rabbits, would also have been useful.

The book includes many drawings that will be appreciated by extensionists. However, they are not always as accurate as might be hoped—for instance, the jujube tree on page 108 looks like a spruce! An index, a good set of references and a list of relevant organizations complete this useful volume. Despite the limitations mentioned, it is highly recommended.

—Emmanuel Torquebiau
Forest Ecologist, ICRAF

21

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269

Food From Dryland Gardens. An Ecological, Nutritional and Social Approach to Small-Scale Household Food Production. David A. Cleveland and Daniela Soleri. Center for People, Food and Environment, 344 South Third Avenue, Tucson, AZ 85701, U.S.A.; 1991. xiv+387 pp. softback, US\$25 in industrial countries or US\$15 in developing countries—plus postage. ISBN 0 962779 0 X.

Although written primarily for those working in international development in the Third World, *Food From Dryland Gardens* will be of value to all those interested in small-scale, ecologically-based, environmentally-sound food production, particularly in dry climates. It is an excellent example of the newer generation of texts seeking to support Third World development in that it provides both a practical guide and a detailed reference source for dryland gardening *within* the local cultural, economic and social context of the communities it is

addressing.

Intended as both a beginner's guide and a reference source for the more experienced, it was written to enable those involved in developing and practising sustainable gardening systems—field workers, extension agents, project workers, etc.—to work with the communities they are seeking to help, usually both resource-poor and economically-poor groups and families.

It is a very comprehensive manual dealing not only with the whole range of information needs associated with food production from dryland gardens, but also covering other essential topics such as nutritional needs and sources of supply, economics and marketing, processing and storing of products, and the saving of seeds for future use. It finishes with an extensive resource and information list. It not only very effectively reviews the field that it seeks to cover, it will also be of value in many other contexts.

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HortIdeas

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Food from Dryland Gardens: An Ecological, Nutritional, and Social Approach to Small-Scale Household Food Production, by David A. Cleveland and Daniela Soleri, Center for People, Food and Environment, 344 S. Third Ave., Tucson, AZ 85701, 1991, 387 pp., \$27.50 postpaid in the U.S., \$28.75 in Canada, and \$29.20 elsewhere, ISBN 0-9627997-0-X.

"Food from Dryland Gardens was written to encourage gardens that serve local needs, that are based on local knowledge and resources, and that conserve natural resources and the biological diversity of traditional crops. It was written for field workers, extension agents, students, project workers, and program planners. Both a beginner's guide as well as a reference for those with more experience, this book helps the reader observe and work with people to ask appropriate questions about the community, the environment, and the potential for gardens to improve nutritional, economic, and social well-being." (page 3)

This book works—really *works*—on several levels relevant to gardeners in developed, as well as developing, countries: it reveals the inequities of development ideas *imposed* by outsiders, it shows how to implement an alternative *cooperative* approach to sustainable development, and it explains in highly practical terms how to garden better (so much in the honorable tradition of the classic *Where There Is No Doctor* that we think Cleveland and Soleri should have used the title *Where There Is No Extension Agent*). Believe us—no matter where you garden, you'll learn a *lot* from this book... maybe even enough to teach your local extension agent a thing or two about sustainability.

p. 48

WHOLE EARTH REVIEW

Food From Dryland Gardens

In the beginning, everyone wanted growth. Then they learned about cancer and Sprawlsville, USA. So foreign-assistance salesmen replaced "growth" with the more contemporary term "development." But somehow development never seemed to help the people who were supposed to be "developed." Then conservation came along, and consultants caught on that maybe what they were calling "development" was actually devastating the environment and sucking up the natural resources that supplied locals with a living.

Now there is a struggle to combine conservation and development. People don't need to grow taller or fatter or reproduce ourselves like photocopiers; we need to develop a gentler, more sustainable economy. David Cleveland and Daniela Soleri are among the best of the nouveau eco-developers. Their book gives the Big Picture so that readers are always aware how small acts fit or don't fit into the larger picture. Their book is practical —

a breath of fresh earth compared to the jargon-filled tracts on how to be successful in the foreign-assistance profession. From vitamins to vegetative propagation, from marketing to salt burn, this is the first major book on dryland gardens. (To UNICEF's credit, it supported the production.) Food From Dryland Gardens sets the example for all people-focused garden and agroforestry books in the future.
—Peter Warshall

Safe Homemade Pesticides

NEEM SEED EXTRACT Use: Spray to repel insects or slow their feeding; kills pests when they eat it. Recipe: Seeds of fruits fallen from the tree are cleaned, dried, and stored in a dry, ventilated place. When needed, seed hulls are removed, and seeds are finely ground and hung in a cloth sack in a container of water, using between 25-50 gm seed/liter of water (3-7 oz seed/gal of water). The ground seeds are soaked overnight in the water before using. This mixture should be made fresh



Food From Dryland Gardens

David A. Cleveland and Daniela Soleri, 1991; 387 pp.

\$25 (\$27.50 postpaid) from Center for People, Food & Environment, 344 S. 3rd Avenue, Tucson, AZ 85701

for each use as it can lose its effectiveness over time and with exposure to sunlight. Reported to control: caterpillars, beetles, grasshoppers, and other garden pests.

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