

Arid/Semi-Arid Natural Resources Program

**APPROPRIATE TECHNOLOGY
FOR NATURAL RESOURCES DEVELOPMENT:**

An Overview, Annotated Bibliography, and
A Guide to Sources of Information

by

Robert L. Bulfin and Harry L. Weaver



The University of Arizona
Tucson
1977

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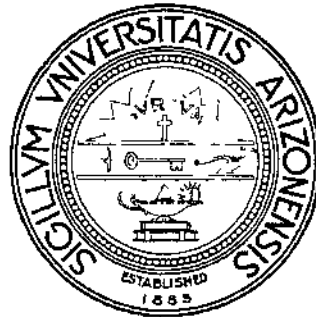
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CONTENTS

	Page
Acknowledgments	i
Synonyms for Intermediate Technology and Related Concepts	1
Introduction	2
Some Historical Comments	3
Thematic Framework of Intermediate Technology	5
Examples of Intermediate Technology:	
Satisfying Specific Village Needs	8
Development of Small-Scale Industry	10
Development of Improved Farming Methods	11
Is Intermediate Appropriate?	13
Social and Political	13
Outmoded Hardware	13
Capital-Output Ratios	14
Appendices:	
A. Guide to Sources of Information on Intermediate Technology:	
Selected Organizations	15
Subject Index	55
Sample Questionnaire and Letter of Transmittal	58
Other Organizations [not responding to questionnaire]	61
List of Indexing and Abstracting Tools	66
A Selected List of Journals/Newsletters	69
B. Annotated Bibliography	71
Subject Index	159
Author Index	164

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-RLB

Department of Systems and
Industrial Engineering,
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Tucson

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SYNONYMS FOR INTERMEDIATE TECHNOLOGY
AND RELATED CONCEPTS

adaptive technology
alternative technology
applied technology
appropriate technology
constructive technology
cumulative technology
human-scale technology
invisible technology
labor-intensive technology
low impact technology
rural technology
simple technology
socially appropriate technology
technology and culture
technology with a human face
village technology

INTRODUCTION

The purpose of this paper is to acquaint the interested reader with the subject matter commonly referred to as Intermediate Technology (IT). While the annotated bibliography (Appendix B) might be sufficient to accomplish this goal, it would be an arduous task for the reader to peruse all the material included. Thus, the paper is an attempt to capture the essence of the subject by providing an overview, with the bibliography used to obtain additional details. For those who wish to pursue the subject beyond the citations presented in the bibliography, Appendix A, a guide to the sources of information (i.e. indices, journals, and practicing organizations) on Appropriate and/or Intermediate Technology, is included.

It has always been recognized that technology could be used to aid developing countries, and although the type of technology used or proposed for this purpose has spanned the entire technology spectrum, it has tended to emphasize the most modern. Intermediate Technology (IT) represents a point on this spectrum currently receiving much attention, its exact definition varying, depending upon who is asked to define it. Here we have attempted to synthesize the views of its many practitioners into a coherent thematic framework of IT, arguing a particular outlook generally in support of the concept of appropriate technology. While we also present the reported arguments against intermediate technology, we nevertheless take the position that given the correct set of circumstances, intermediate is indeed appropriate.

A brief history of the development of IT is given, followed by its thematic framework. Examples of IT in developing countries are then presented to familiarize the reader with the breadth of applications. The question, Is Intermediate Appropriate? is also discussed.

It has been stated that appropriate and intermediate technology is more a philosophy than a particular technology. To some degree perhaps all technologies reflect the execution of a principle, and while we do not wish to impose our articles of faith on you, our readers, we do recognize that each application of technology requires a fit with the specific problem: the people, the environment, the economics, the power available, the politics. The ideal technological solution to a problem in southern Arizona will quite likely need adaptation to solve the same problem in Bangladesh, Paraguay, or Togo.

SOME HISTORICAL COMMENTS

As early as the 1880s Petr Kropotkin was extolling the virtues of the basic philosophy of Intermediate Technology (IT). He felt that geographic specialization of production (e.g., concentrating the world's coffee production in South America) leads to exploitation. He thought that food should be grown and items manufactured for the use of the very people who grow and produce them. His notion that small industries and farms sustain and make possible economic progress was based on the study of American and Russian "village" economies during the Nineteenth century (146).*

In 1948 the concept of "village technology" as a development strategy for India was expressed by Gandhi (91). Stated in terms of Swadeshi, it presents a philosophy explained as a striving to identify oneself with all of creation and, in so doing, dedicating oneself to the service of one's immediate neighbors. Swadeshi manifested itself by emphasizing a return to making Kahdi (traditional Indian cloth) on a small scale by traditional means, the spinning wheel and hand loom. The concept was not limited to Kahdi only but included the manufacture of basic consumer goods as well. Additionally, Gandhi encouraged people to patronize their village industries. Because Swadeshi rejects the use of goods made by highly industrialized processes if they displace hand labor, the intent of the program was to allow each person to contribute to and participate in the nation's economy.

In more recent times the concept of the use of intermediate technologies has been formally presented by the late E. F. Schumacher. He said that in an economic sense, the level of technology can be expressed in equipment cost per work place, a measure of capital intensity (226). If the equipment cost per work place of indigenous or traditional technology is thought of as \$1, then modern technology might be considered as costing \$1,000 per work place. The \$1,000 technology with its associated high levels of mass production eliminates traditional work places much faster than it creates modern work places, resulting in unemployment. As an alternative, he felt that importation of intermediate, or \$100, technologies would be much more effective than modern technology, yet less costly to society. More work places could be created with the same capital investment and still result in an improved product. An economy is more likely to adjust to these incremental changes without the unemployment caused by the sophisticated technology.

*Numbers refer to entries in the bibliography in Appendix B.

Considering development as a self-perpetuating process, it is reasonable to believe that a manufacturer operating at a \$1 level could save his money and purchase the \$100 or intermediate, technology. The time required to save enough money to purchase the \$1,000 technology might be so great as to preclude its purchase. Additionally, a \$1 work place manufacturer is more likely to be able to receive financial assistance for the \$100 technology than for the \$1,000 technology.

Following Schumacher's lead, the number of proponents of IT have increased tremendously. An attempt will now be made to synthesize their views into a coherent framework.

THEMATIC FRAMEWORK OF INTERMEDIATE TECHNOLOGY

While there is no general agreement on the exact definition of IT, even among its practitioners, the literature on the subject reveals certain themes that re-occur. An individual practitioner of IT might disagree with one or more of the themes, but any one would be accepted by a large percentage of all practitioners. The proponents of IT generally feel that each development situation must be handled as a distinct problem, and therefore some of the themes may not apply to a particular instance. At any rate, Intermediate Technology usually

- ..is labor intensive. In an attempt to make use of the large number of unemployed in developing countries, such a strategy can turn this liability into a resource (4, 113, 116, 245, 278).
- ..is small scale. The roots of a technologically progressive society must be developed before the tree can grow. People must grow incrementally in their capacity to use and understand technology. Small industries also require less capital investment, an item of scarcity in most developing countries (4, 116, 199, 245).
- ..is self-perpetuating. Each transfer of technology cannot be an end to development. It must be a path that builds on the present and leads to a future. It is intended to kindle the innovative process that will allow for continuing advances (130, 169, 218).
- ..provides for optimum use of local resources. Use of local resources lessens the balance of payment problems associated with imports. One must insure, however, that "optimum use" is carefully defined and that these resources are not over exploited (278, 283).
- ..is cost effective. Certainly intermediate technology should pay for itself and provide a profit for the person using this technology. However, social profits and costs should also be considered, and some form of subsidy might be necessary to return a monetary profit to the entrepreneurs (233, 282).
- ..is adaptive. The transfer of technology must meet social and cultural requirements. A technology may have to be transformed or begun on a different level depending on the technical capacity of the recipients (4, 199, 258, 278).

- ..promotes self-help and self-reliance. It is recognized that man's greatest sense of pride comes from being able to help himself (116, 218, 245).
- ..makes use of local opinions and participation. Encouraging the participation of affected people in determining their own paths to development insures consideration for local social and cultural constraints (245).
- ..is ecologically sound. It helps achieve a balance between population, resources, agriculture, and industry (199).
- ..implies increased education. Education helps to increase total development and perpetuate the capacity for self-help (173). Transfers of technology must be accompanied by sufficient initial and follow-up training so as to insure continued use. In addition, the "technical sense" of the general population is increased through general schooling and vocational education; and general motivation for development and entrepreneurial tendencies is enhanced.
- ..builds institutions, by stimulating the creation of the necessary public and private agencies to assist in the development process (4).
- ..is appropriate. Whether it be the introduction of a bullock plow to Niger or a solar water heater to Arizona, the technology transferred must be appropriate to the local situation. For example, capital intensive methods may be appropriate when there is no surplus of labor (130, 143, 278, 283). Intermediate Technology does not reject modern technology at all; it simply requires that it be appropriate within the context of the situation.

The concepts and themes expressed in these definitions of IT have also been associated with other terminology, including "Applied Technology" and "Appropriate Technology" (See listing of such synonyms, p. 1). The term "Appropriate Technology" is currently receiving the widest use (157), although there is usually a distinction made between Appropriate and Intermediate. Appropriate Technology is technology for a task seen in the context of a certain society and judged to be good. This can apply to transferring a nuclear energy power plant as well as new leather tanning techniques. Intermediate Technology, on the other hand, can be considered a subset of Appropriate Technology excluding capital intensive solutions, which in fact brings the cycle back to Schumacher's original concept of the \$100 technology.

Intermediateness can also be thought of as a position in the spectrum of possible technologies relative to the local situation. As stated by Nicholas Jequier (130):

"...In the societies of the Middle East and Asia which have known and used the ox-drawn plow for thousands of years, such a technology can be called traditional, and the intermediate level of technology would more adequately be represented by the small two-wheel tractors of the type developed by the International Rice Research Institute in the Philippines or by the industrial cooperatives of Sri Lanka. In the tropical African societies which do not have any tradition of live-stock breeding and which still use very simple implements, the ox-drawn plow is a major innovation, and from a technological point of view, it represents a big step forward."

EXAMPLES OF INTERMEDIATE TECHNOLOGY

It is not the intent of this paper to enumerate all possible applications of Intermediate Technology, but rather to delineate its scope. The following sections discuss some important problems of development and the range of IT solutions as expressed in current literature. While the examples given convey the principles of IT, it is not suggested that the solution given is always correct for any occurrence of the same problem. The results are valid only under the particular circumstances of the situation as defined in the appropriate reference.

The annotated bibliography contains more examples.

Satisfying Specific Village Needs

Some development needs, particularly those at the village level, are so urgent and so apparent that an effort must be made to improve the situation as rapidly as possible. Satisfactory solutions to these problems generally cannot pay for themselves. Traditional development strategies often left these needs unsatisfied because, as projects, they could not compete with the profits returned from large-scale industrialization schemes. Intermediate Technology considers projects that directly increase the quality of life fundamental to development. Three of the most urgent needs in this area are health care, nutrition, and sanitation.

Due to the shortage of qualified medical personnel, some developing countries are solving their health service problems by training auxiliary workers to promote preventive medicine in rural areas (160). The use of para-professionals dramatically expands the population from which medical personnel can be drawn and considerably reduces training costs per person. In rural Africa many health plans have established a role for traditional physicians, or "witch doctors," who have contributed to the enhancement of rural health for many years, are trusted by the local population, and can be an important link in the development of new programs.

Nutrition clinics to stimulate better eating habits now exist in rural areas of many developing countries (19), even though in many cases, there is not sufficient food available with the required nutrient value. To aid in increasing the protein intake of populations with protein-deficient diets, nutritionists are attempting to provide protein-enriched food from unconventional sources (119). Any food must be adapted in taste and texture, however, before introduction to a society is attempted (297).

Water is one of the requirements for all life, but the technology that has produced safe, low-cost, abundant water supplies in developed countries has not been transferred to the developing ones (43). There is considerable activity, however, in all developing countries to counteract this situation. Frequently the best contribution to improvement of existing sanitation facilities can be made by simply relocating present sanitary facilities away from water supplies (294). Often, however, basic facilities do not exist and must be constructed (17, 311). In either case, sanitation technology must be adapted to particular local standards and customs if it is to be useful. For example, a recent development at the University of Pahlavi, Shiraz, Iran, is a simple filter for household use that proves to be very effective in removing suspended matter and bacteria (14).

Water collection and storage is often a problem in many villages. Imagination and Intermediate Technology have converted a cave with a natural water inflow into a water collector and storage device (102), and designed and introduced roof and other manmade catchments which can be varied in size to supply the needs of entire villages or individual families (163). Cement mortar water jars have been introduced as an inexpensive way of storing water collected in this manner (295).

Making groundwater available for human and livestock use often requires a large amount of energy. Introducing low-cost, low-maintenance wells and pumps is usually an essential element of any water program. Tubewells have been used to satisfy some rural water needs (68,80). The efficiency (cost/capacity) of pumping devices is highly dependent on the nature of the water source. Windmills and conventional fossil fuel-powered devices often present solutions for raising groundwater from lower levels (85,311).

Irrigation can make barren soil productive but simple methods of preparing soil to retain natural moisture are often as effective as elaborate irrigation systems (312). Canal structure surveying work is usually required to use gravity, the cheapest way to move water (315), and some simple devices to allow unskilled labor to perform this task have been developed (191). The International Rice Research Institute has developed a portable, manually operated bellows pump to assist in the flooding of rice fields; this device could also have other applications in irrigation (124).

Application of Intermediate Technology to housing problems results in different solutions in different regions (78). Often a chosen solution will also create local industries, such as the Intermediate Technology Development Group Brick Work in Asokava, Ghana (200). Here, local labor is employed in an industry that benefits the entire community by producing low cost building material. Frequently the best solutions to housing problems do not require new materials, but an improvement in the durability of presently used materials (131, 153). The East-West Center in Honolulu is actively seeking appropriate housing solutions through research and development (4).

Sophisticated analysis of building techniques can lead to old-fashioned solutions such as the use of domed roof construction instead of flat roofs to lower the temperature inside dwellings (44). In some cases the same sophisticated analysis may result in the use of modern building materials such as ferrocement (136, 184). The emphasis again is on appropriateness as defined by the local situation. In an effort to make a wider variety of choices available, recent research has determined cement can often be made from local materials (234).

Development of Small-Scale Industry

Intermediate Technology recognizes that small-scale industry is an important component of development, but what constitutes small-scale industry depends greatly on the geographical area. Each developing country requires a definition appropriate to its stage of industrialization, its social and economic policies, and its resources. Nevertheless small-scale industries do have a number of general characteristics relative to the local economic structure: 1) management is performed by only a few individuals (usually owners), 2) few people are employed, and 3) a limited amount of capital is available.

To give a feeling for the magnitude of variation in government definition of small industry, upper limits on capital assets can vary from \$50,000 in Costa Rica to \$757,000 in Italy; sales can vary from \$1,000,000 per year in Canada to \$4,000 per year in Cameroun; and the number of employees from ten in Indonesia to 200 in Korea (20).

One fundamental aspect of developing small-scale industries is stimulating small-scale industrialists or entrepreneurs. In order to develop an economy along capitalistic lines people must be identified who are willing to go into business and take the associated risks. The Technology Consultancy Center of the University of Science and Technology in Kumasi, Ghana, and the Regional Adaptive Technology Center, Mindanao State University in the Philippines, have developed successful methods of encouraging and training would-be entrepreneurs. A sample operation (pilot plant) is built and run by the universities to demonstrate its profitability. Entrepreneurs and sometimes a supporting staff are then trained in the operational and managerial aspects of the production unit. Encouragement for self-employment and technical assistance for establishing a business are also provided. This process trains entrepreneurs for a specific business application rather than developing general skills (209; 94 [Powell]).

The Institute of Small-Scale Studies, University of the Philippines, concerns itself with general managerial training that prepares the trainee in the skills necessary to run his own business. Tests for entrepreneurial potential are used to screen trainees (94 [Chico]).

In an attempt to provide employment for a broad segment of the population, some of those concerned with IT have concentrated on developing small industries suitable for a wide range of applications. These industries should not be dependent on geographically concentrated resources and should supply some current or forecasted need. The Technology Consultancy Centre in Ghana, Centro del Desarrollo Industrial del Ecuador, and Mindanao State University in the Philippines are examples of such agencies. The industries developed include soap, bolts, glue, and ceramic production (94, 209).

Industries have also been conceived in response to a request to provide a specific geographical area with a profitable industry dependent primarily on local resources. Research and development on the part of the Intermediate Technology Development Group (ITDG) resulted in an egg carton production machine that not only cost less than conventional models but which allowed Nigeria to convert its waste paper into a resource (170, 157). The manufacturers of such machines originally believed the required size could not be made, but now produce it under license.

Industries that recycle waste products are highly suited to regions short on resources. Responding to this need, the Economic Development Laboratory, Georgia Institute of Technology, has developed a pyrolytic converter for transforming peanut (groundnut) shells into charcoal for burning or water purification uses (105).

The International Rice Research Institute has, among other projects, designed simple, inexpensive machines for irrigation, harvesting, and production of rice which can be manufactured by most small fabricating shops, thus supplying needed agricultural equipment while at the same time stimulating small manufacturing industry (14, 123, 124, 125).

Development of Improved Farming Methods

Providing an adequate diet for all the people of a country is probably the most important aspect of development, although in many regions it may be very costly to bring new farmland into production to feed growing populations. An alternative solution is to increase the productivity of the land already under cultivation. While increased mechanization may be the only means of significantly increasing productivity in the long run (179), the manner in which mechanization is introduced has a major impact on its use and development. It is very often the case that all aspects of small farming are not ready for mechanization simultaneously (232). Consequently,

selective mechanization is the approach most likely to yield results. Some rules of thumb have been developed for determining the appropriate solution to mechanization in developing countries, paramount of which implies consideration of local conditions. For instance, increasing the number of draft animals has been found appropriate only when existing agricultural power is less than approximately 0.2 horsepower per hectare (179).

Selective mechanization should attempt to stimulate local manufacturing industries; in other words, equipment should be such that it is within the fabrication capabilities of local manufacturers. Obviously, the equipment produced must also be affordable by the small farmer (139, 225). Technische Ontwikkeling Ontwikkelings Landen (TOOL) in the Netherlands; the Intermediate Technology Development Group (ITDG), London; and the International Rice Research Institute (IRRI) in the Philippines, are active in this area and have developed inexpensive farm equipment that can be locally produced (123, 124, 125, 157, 218).

Agricultural productivity can be stimulated by adapting modern technologies to local situations. The benefits of supplementing soil bacteria are a recent discovery and in many areas may be appropriate for increasing the crop yields of developing countries (247). It has also been found that applying compost from anaerobic digestors to soil humus eliminates coffee berry disease. Furthermore, analysis of this compost shows that it is high in nitrogen, making it an excellent fertilizer (75, 213). Though quite modern in concept these technologies are not expensive. Consequently, they qualify as affordable techniques within the framework of IT.

IS INTERMEDIATE APPROPRIATE?

There is disagreement as to the merits of emphasizing Intermediate Technology as a development strategy. To portray Intermediate Technology accurately, opposing viewpoints and potential problems are set out below.

Social and Political

Intermediate Technology is sometimes considered a second-class technology and, as such, is unacceptable to those in developing countries who feel that developed countries are guilty of exploitation and are therefore obligated to share their wealth (144). This attitude ignores the failures of direct transfer of modern technologies to provide the desired progress and enhance the lifestyle of the majority of the population. Nicholas Jegquier counters the claim that IT is second rate by stating that only the symbols of modern living can be bought on the open market, but development takes a long time (130).

The view of Intermediate Technology as a perpetrator of second-class solutions results partly from structuring the thematic framework of Intermediate Technology into hard and fast rules and consequently ignoring or overlooking the most appropriate technology available. The myopic approach (i.e., attacking the symptoms without considering their cause) also contributes to this view. Intermediate Technology, intended to be a flexible tool and part of a comprehensive approach to problems of development, offers an approach more likely to arrive at the ideal solution to a given problem in terms of realistic capital and social costs.

There is also a view that regards Intermediate Technology as simply another mask for exploitation, causing developing countries to overuse their natural resources (130). Intermediate Technology in its thematic context stipulates that a solution must be appropriate, implying that resources and their rate of use as well as economic and social constraints be considered in the search of the optimal solution. This view of Intermediate Technology as exploitative is actually a disagreement over the relative values assigned to the constraints.

Outmoded Hardware

Critics of Intermediate Technology contend that it is doomed to failure because it relies on outdated equipment and concepts. These critics feel that the incremental steps in development projects based on Intermediate Technology necessitate that at least some industries revert to making bullock plows and steam boilers so that developing nations can follow

the same path as the United States and other developed countries. This view also produces a fear that developing countries will become depositories for outdated, used-up, and unwanted western machinery, and thereby will always remain 100 years behind the developed world.

Intermediate Technology does not propose that developing countries follow the same development pattern as the developed world; rather, it seeks to accelerate development by means that are obtainable by most segments of the population. This requires using the most modern techniques for which the necessary industries and equipment will be appropriate and competitive. Many technologies which the industrialized world regards as outdated are particularly suited to present conditions in developing countries. Sears catalogs and U. S. patents from the turn of the century can be a valuable source of inspiration for industries and technologies suited to the resource availability of many developing countries. In fact, such equipment may operate more profitably than a modern technology attempting to survive with the requisite raw material and infrastructure in short supply.

Capital-Output Ratios

Another charge against IT is that it does not optimally use the available capital. One such argument states:

"It is nonsense to advocate a technology that requires much less capital per employee, without also considering how much it will produce per unit of capital invested. Research has shown that the most modern machinery produces much more output per unit of capital invested than less sophisticated machinery which employs more people. If you want to achieve the quickest rate of economic growth--which means maximising (sic) output per head of population, you should therefore invest scarce capital in advanced techniques, not waste it on inefficient ones. In other words, methods of production with the best capital-output ratio give the most economical use of capital which you most need when you are short of it" (211).

Of course this assumes that increases in wage goods will automatically create jobs elsewhere and that the resulting income is somehow distributed among the populace.

APPENDIX A

Guide to Sources of Information on
Intermediate Technology

SELECTED ORGANIZATIONS

1. Action for Food Production (AFPRO)

Community Center
C-17, Safdarjung Development Area
New Delhi - 110016
India

Executive Director: P. O. Dunn

Staff: 20

Emphasis/Expertise:

A non-profit joint service agency established to coordinate, support, evaluate, and give technical guidance to food production projects. Agency endeavors to bring together the resources of donor and voluntary agencies into single action food programs intended to benefit the poor and marginal farmer

Recent/Current Projects:

Dairy cattle, poultry, piggery, and goat projects. Water resources development projects. Technical assistance and training to small farmers through courses stressing extension work

Serves as a collection centre and 'clearing house' for the dissemination of information of a technical nature

Keywords: agriculture/India/consulting/
technology transfer/animal
husbandry/rural development/
food production

2. Action/Peace Corps

Peace Corps Information Collection and Exchange (ICE)
806 Connecticut Avenue
Washington, D.C. 20525
USA

Peace Corps Director: Carolyn Payton
and Associate Director for Action's International Operations

Contact: Margot Aronson, Director ICE

Staff: Permanent, 200; volunteers, 6000

Emphasis/Expertise:

Volunteerism in the developing world addressing problems in the fields of agriculture, health, education, public works, environmental protection, etc.

Recent/Current Projects:

Operate ICE, a process for collection, review, and sharing of Peace Corps-generated information. The Peace Corps Program Grid: a matrix of activities and countries that describes the current programs

Library: ICE and many pertinent publications
Serial Publications: Program and Training Journal

Keywords: agriculture/education/health/
environment/training/Information
systems/ecology

3. Alternative Sources of Energy, Inc.

Route 2, Box 90A
Milaca, Minnesota 56353

Director: Don Marier
Contact: Robert Pauls, co-editor
Staff: Permanent, 5; other, 4
Emphasis/Expertise:

Competent to respond to a generous range of subject matter including but not limited to alternative fuels, delivery systems, hardware availability and design/application with special emphasis on low cost-small scale approaches to energy applications and appropriate technology

Recent/Current Projects:

Develop special publications on wood stove design/construction, small-scale water power development and integrated systems.
Sponsor assorted conferences, seminars, etc.

Library:

Large collection covering energy (general), solar energy, wind energy, water energy, organic fuels, energy storage, energy conversion, architecture, agriculture, transportation, engines, integrated systems.

Serial publications: Alternative Sources of Energy (quarterly)

Keywords: energy/solar energy/wind power/
conservation/construction/organic
matter/alternative fuels

4. Appropriate Agriculture Technology Cell

Bangladesh Agricultural Research Council
130/C. Dhanmandi R.A.
Road #1
Dacca 5,
Bangladesh

Contact: Dr. L. Merrick Lockwood, Adviser

Emphasis/Expertise:

A recently established program to coordinate programs aimed at developing more effective use of indigenous resources and labor to increase food production in Bangladesh in such a way as to insure equitable distribution of income.

Recent/Current Projects:

Evaluation of pedal-operated rice mills and wheat mills developed at Tropical Products Institute (U. K.); pilot project on the local manufacture of small diesel engines; evaluation of draft implements for farmers in Bangladesh; create an information center concentrating on materials relating to appropriate technology.

Library: Large appropriate/intermediate technology collection planned.

Serial Publications: Newsletter, monograph series and other non-serial publications planned.

Keywords: information systems/consulting/
agriculture/mechanized agriculture/
Bangladesh/food production/
pilot projects

5. Appropriate Technology Cell

Ministry of Industrial Development
New Delhi - 110011
India

Contact: Bepin Behari, Joint Director

Staff: Permanent, 3; other, 70

Emphasis/Expertise:

Primarily concerned with areas where existing technologies do not meet the specific requirements of a given region. The main task is the assessment of optimality of technologies within the existing socioeconomic milieu

Recent/Current Projects:

Projects with a rural bias: small dairy plant, mini cement plant, leather tanning, and agricultural implements

Library:

A functional collection relating to food processing, biogas plants, cement plants, sugar technology, small storage bins; low-cost post harvest agricultural technology

Keywords: technology transfer/housing/cement/
construction/agricultural implements/
dairy industry/India/handicrafts/
rural development/agricultural

6. Appropriate Technology Development Association

P. O. Box 311
Gandhi Bhawan
Lucknow
U. P.
India

Director: M. M. Hoda

Staff: Permanent, 4; other, 15

Emphasis/Expertise:

Hardware design, entrepreneur development, and survey case studies

Recent/Current Projects:

Rice milling utilization of animal by-products, social forestry; research regarding solar cookers, spinning unit, mini-cement plant; education and training of rural technicians; publication of an appropriate technology directory

Keywords: industries/India/solar energy/training/
entrepreneur development/methane/
alternative fuels/rural development

7. Appropriate Technology Development Organization

Planning and Development Division
Ministry of Finance
Planning and Economic Affairs
17-B Satellite Town
Rawalpindi
Pakistan

Chairman/Consultant: Bhulam Kibria

Contact: Shahid Ikram, Assistant Director

Staff: Permanent, 6; other, 2

Emphasis/Expertise:

Explore the scientific knowledge leading to increased productivity through the development of low-cost, labor intensive appropriate technologies

Recent/Current Projects:

Biogas plan, windmill for water pumping, low-cost housing, paper pulp from banana stem, screw-type sugar cane juice extractor, fruit and vegetable preservation by dehydration, cottage match industry, insecticide from tobacco waste, earth-moving implements, vinegar from over ripe dates, tile and cardboard from rice husk and rice bran, village level food processing, fiber from plants, solar energy use, pitcher and pipe irrigation to rehabilitate arid lands

Library: Small specialized collection on IT/AT of various countries

Serial Publications: Monthly reports and serials relating to Gobar Gas, rural housing, and a directory of appropriate technology

Keywords: housing/construction/Pakistan/
food processing/biogas/fibers/
methane/solar energy/irrigation/
wind power

8. Appropriate Technology Unit

Indian Institute of Technology
Bombay 40076
India

Convenor: Dr. A. W. Date, Assistant Professor, Mechanical Engineering,
IIT

Staff: Permanent, 1; other 10

Emphasis/Expertise: Hardware design and technology delivery systems

Recent/Current Projects:

Study of mechanisms of transfer of technology from institutions to rural areas. Development of a sparked-bed drier for mid monsoon drying of paddy. Studies on the replacement of diesel by biogas. Design and fabrication of a pedal-operated machine to manufacture cotton healds. Design and fabrication of rotary and reciprocating windmills

Library: Reports on rural technology, agriculture, and manufacturing; journals and other miscellaneous materials

Keywords: wind power/technology transfer/
agriculture/mechanized agriculture/
India/methane/rural development/
biogas

9. Appropriate Technology Working Party

University of Newcastle upon Tyne
Claremont Road
Newcastle upon Tyne NE1 7RU
England

Director: Colin B. Marsh

Emphasis/Expertise: Group is still in the developmental stage

Recent/Current Projects: Conducted conference March/April 1976

"Appropriate Technology for the United Kingdom"
(Proceedings available)

10. Asian Institute of Technology

P. O. Box 2754
Bangkok
Thailand

President: Dr. M. E. Bender, Jr.

Contact: Dr. P. A. Cowell, Associate Professor of Agricultural Engineering;
Chairman of the Division of Community and Regional Development

Staff: Permanent, 110 (faculty and staff)

Emphasis/Expertise:

A graduate school of engineering, drawing students from most Asian countries. Concerned with teaching and research in hardware design, consulting, technology delivery systems, socioeconomic research related to development

Recent/Current Projects:

Solar-powered water pump, solar-powered refrigerator, solar stills and driers, hand-operated soybean seeder, portable water systems using local skill and material, simple grain storage bin, low-cost housing

Serial Publications: Newsletter related to general Institute affairs

Keywords: education/consulting/Thailand/
technology transfer/housing/
mechanized agriculture/grain
storage/industrial machines

Association Européenne d'Agriculture et d'Hygiène Biologiques, SEE #47

11. Association of Voluntary Agencies for Rural Development

C-6 Safdarjang Development Area
New Delhi - 110016
India

Director: S. D. Thapar

Staff: Permanent, 30; other, 50

Emphasis/Expertise: Extension and/or technology delivery systems

Recent/Current Projects:

Consulting, including technical planning. Covers all aspects of socioeconomic activity. Projects emphasizing irrigation, small industry development, and animal husbandry

Serial Publications: A monthly journal

Keywords: technology transfer/consulting/
irrigation/industries/India/
animal husbandry/rural development

12. Board on Science and Technology for International Development (BOSTID)

National Academy of Sciences/National Research Council
2101 Constitution Avenue N. W.
Washington, D. C. 20418

Director: Dr. George S. Hammond, Foreign Secretary,
National Academy of Sciences

Contact: Jay Davenport, Staff Associate BOSTID

Staff: Permanent, 12

Emphasis/Expertise:

Primary objective is to investigate what role science and technology has in economic and social development through workshops, joint study groups. Advisory groups have been formed to consider specific applications

Recent/Current Projects:

Role of U. S. engineering schools in technical assistance, appropriate technologies for developing countries, remote sensing for development. Others include the use of solar energy and operations research in LDC's. BOSTID's Advisory Committee on Technology Innovation (ACTI) prepares state-of-the-art reports on methane generation from human, animal, and agricultural wastes; productive utilization of freshwater aquatic weed control; guayule, a rubber-producing desert shrub. Others include food production, water, and construction considerations

Keywords: consulting/water/energy/methane/
systems modeling/construction/
solar energy/aquatic weed control/
ferrocement/remote sensing/guayule/
food production/economic plants

13. Brace Research Institute

MacDonald Campus of McGill University
Ste. Anne de Bellevue
Quebec
HOA 1C0
Canada

Director of Field Operations: T. A. Lawand

Contact: Ron Alward, Research Associate

Staff: Permanent, 6; other, 4

Emphasis/Expertise:

Solar energy, wind energy, methane gas production, desalinization of sea water

Recent/Current Projects:

Saline water conversion, evaluation of existing solar stills and solar still optimization. Wind power, improvement of 10HP wind machine; wind electric generation; electrical power transmission for a free running, fixed pitch windmill; construction of a sail type windmill; savonius rotor program. Solar heat and power, solar energy in heating greenhouses in colder regions, solar powered organic fluid rankine cycle engine systems, potential of solar ponds for energy collection, improvement of solar cookers, roof-top greenhouses, Quebec Indian housing. Arid land development, potentialities of closed environment agriculture for water conservation in arid areas, low cost sanitary technology

Library: Good collection on solar/wind energy systems and water desalinization

Keywords: desalinization/Canada/solar energy/
wind power/methane/greenhouses

14. Canadian Hunger Foundation (CHF)

75 Sparks St.
Ottawa
Ontario K1P 5A5
Canada

Executive Director: T. R. McCoy

Contact: Paul Stinson, Executive Assistant

Staff: Permanent, 12; other, 1

Emphasis/Expertise:

The support of overseas self-help projects to increase food production and improve the food processing and preservation capabilities of developing countries. CHF is the chief center for the exchange of information on appropriate technology in Canada

Recent/Current Projects:

Development of education materials. Latin America: video-tape network. Dominican Republic: rural rehabilitation center, vegetable marketing, rural development, road building. Ecuador: sheep development. Bolivia: rural education center, demonstration farm, pasture and cattle development. Argentina: technical institute. Senegal: Construction of fishing pirogues. Mali: women's cooperative development. Niger: craft cooperative. Kenya: Kandara water scheme. Lesotho: agriculture and home-making, masite agricultural project. Bangladesh: farm implements for village co-ops, ferrocement boat building. India: manufacture of well drilling equipment, international food technology training center, Punjab dairy development program, agriculture training

Library: Proposed AT/IT data bank will draw on sources around the world

Publications: Appropriate Technology Handbook

Keywords: information systems/education/Canada/
construction/agricultural implements/
rural development/food production/
agriculture/ferrocement/cooperatives/
water/marketing/animal husbandry/dairy
industry/transportation/Latin America/
Mali/Kenya/India/Bangladesh/Niger/
Senegal/Lesotho

15. Caribbean Industrial Research Institute (CARIRI)

University of West Indies Campus
Tunapuna Post Office
Trinidad
West Indies

Director: Hollis Charles

Contact: Kevin Marshall, Head, Technical Information Services

Staff: Permanent, 96; other, 17

Emphasis/Expertise: Industrial research

Recent/Current Projects:

Appraisal studies, e.g. a comparative study of various storage systems for rice, process adaptation or development and project implementation (for example, development of a formulation for a new abrasive household cleanser), operational assistance to industry (for example, a detailed factory layout design carried out for a large manufacturing firm)

Keywords: industries/consulting/West Indies/
business management/grain storage

16. Centre International de Recherche sur l'Environnement et le Développement (CIRED)

Secrétariat d'Etat aux Universités Ecole des Hautes Etudes
en Sciences Sociales
54 boulevard Raspail
75270 Paris CEDEX 06
France

Director: Professor Ignacy Sachs

Contact: Catherine Touraille

Staff: Permanent, 15; other, 8

Emphasis/Expertise:

Rational management of the environment for long term balanced development, with special concern for the quality of life and industrial development

Recent/Current Projects:

A study regarding technology change as a variable in development policy, other studies of the impact of alternative growth strategies on the environment, integration of environment in long-term planning, and development and management of water resources

Library: Maintains a collection of reports, periodicals, and a list of institutions specifically regarding habitat

Serial Publications: Cahiers de l'Ecodéveloppement, Travaux and Etudes

Keywords: industries/habitat/ecology/
conservation/France/water

17. Centre d'Etudes et d'Expérimentation du Machinisme Agricole Tropical

Parc de Tourvoile
92160 Antony
France

Director: Hervé Bichat

Contact: Gérard Herblot

Staff: Permanent, 23

Emphasis/Expertise:

Documentation, information, training; studies and research; economics and development. Presently concerned with small power mechanization (power tiller, simplified tractor) and its application to tropical crops and farming systems

Recent/Current Projects:

Adaptation of small power equipment to cropping conditions in hot countries (small individual farms)

Library: Extensive collection regarding small farm mechanization

Serial Publications: Machinisme Agricole Tropical (quarterly), and a newsletter

Keywords: agriculture/France/training/
information systems/mechanized
agriculture

18. Centre for Studies in Decentralized Industries

Vaikunthbhai Mehta Smarak Trust
NKM International House
178 Backbay Reclamation
Bombay 400020
India

Director: B. T. Acharya

Staff: Permanent, 3; other, 2

Emphasis/Expertise:

Development of decentralized traditional industries through applications of appropriate technology and organization, for example simple devices which can increase productivity through low level technology. Also deals with several aspects of rural development and ecosystems

Recent/Current Projects:

Supply primary and secondary data for rural electrification projects in 8 districts of Maharashtra. Consulting and advisory work pertaining to improved technology in oil crushing, spinning and weaving cotton, and plantation of ramie fiber and its use in producing cloth of polyester fiber

Library: Maintains library relating to the economic and technological aspects of development of rural traditional industries. Contains about 8000 index cards, 500 industries profiles, and 200 technical files

Serial Publications: Documentation Bulletin (quarterly)

Keywords: rural development/consulting/
ecology/India/industries/
fibers

Centro Internacional de Mejoramiento de Maíz y Trigo, *SEE* #36

19. Coady International Institute

St. Francis Xavier University
Antigonish
Nova Scotia
Canada B2G 1C0

Director: (Rev) G. E. Topshee

Staff: Permanent, 8; other, 8

Emphasis/Expertise:

Leadership development. Concerned with development potential at grass roots and middle management levels which remain major bottlenecks. Focus is on growth of organizations such as cooperatives, credit unions, and self help oriented base groups and regional organizations. Teaching material available mainly in English, though some in French and Spanish

Recent/Current Projects:

Continued support of training programs and overseas seminars for those involved in the institute's programs

Keywords: education/training/Canada/
credit and banking/marketing/
cooperatives/decision making

20. Community Soap Factory

3156 18th Street, N. W.
Washington, D. C. 20010

Contact: Ester Siegel

Emphasis/Expertise:

Emphasis is on anti-profit, community business, specifically the production of high quality, biodegradable soap products

Recent/Current Projects:

Maintains information files on soap production, a community garden where community members can grow their own produce, conducts workshops, operates community soap factory

Keywords: industries/energy/cooperatives/
soap/ecology/conservation

21. Conservation Tools and Technology, Ltd.

161 Clarence Street
Kingston-upon-Thames
Surrey
England

Managing Director: Hugh M. Sharman
Contact: Judi Palmer, Office Manager
Staff: 10
Emphasis/Expertise:

To design and supply energy equipment such as wind generators
and low-temperature solar collectors

Recent/Current Projects:

Provide consulting service to the domestic and commercial markets
on energy-saving schemes including systems design. Information
dissemination in the natural energy field

Serial Publications: Natural Energy (a quarterly)

Keywords: energy/solar energy/wind power/
consulting/United Kingdom/
systems modeling

22. David Livingstone Institute of Overseas Development Studies

University of Strathclyde
Livingstone Tower
26 Richmond St.
Glasgow G1 1XH
United Kingdom

Director: James Pickett
Staff: Permanent, 15

Emphasis/Expertise: Choice of industrial technology in developing countries

Recent/Current Projects:

Study of industrialization. Appropriate technology research
project. Examining the environmental and economic impact of
alternative sugar technologies in four African countries

Keywords: technology transfer/United Kingdom/
Africa/sugar/industries

23. Department of Primary Industry

Department of Agriculture, Stock and Fisheries
P.O. Box 2417
Konedobu, Papua
New Guinea

Secretary: John Natera

Contact: Fritz Robinson, Chief Information Officer

Staff: Permanent, 3000

Emphasis/Expertise:

Hardware design, and entrepreneur development. Has major responsibility for all rural development in Papua, New Guinea

Recent/Current Projects:

Involved with the work of 3 agricultural colleges on development of agricultural hardware such as rotary hoes

Keywords: agriculture/consulting/New Guinea/
mechanized agriculture/rural development

24. Development Academy of the Philippines

Industry Development Program
P. O. Box 5160
Makati, Rizal
Philippines

Program Director: Dr. Magdaleno Albarracin

Contact: Arturo Tolentino, Deputy Program Director

Emphasis/Expertise: Entrepreneurial development, small- and medium-scale industry development, agribusiness development

Recent/Current Projects:

Ancillary firm development to determine the effect of sub-contracting to technology transfer; analysis of the performance of public enterprise; promotion of productivity through managerial training, information dissemination, and consulting; study of cooperative-based small and medium industry as an aid to development

Proposed:

Technology transfer assistance: I, determine the technology requirements of regions; II, field assistance teams to help entrepreneurs obtain the technology. Study of tobacco industry

Keywords: agriculture/industries/consulting/
Philippines/technology transfer/
entrepreneur development/tobacco/
business management/cooperatives

25. Dian Desa

Appropriate Technology Project
Jl, Kerto Muja Muju 8
Yogyakarta, Indonesia

Director: Anton Soedjarwo

Staff: 9

Emphasis/Expertise:

Research and development activities in the fields of natural energy, biogas, agriculture, poultry, food preservation and water supply

Recent/Current Projects: Twenty water supply projects in various places
in Central Java, Indonesia

Library: Maintains a small collection

Keywords: energy/solar energy/biogas/
wind power/agriculture/water/
food processing/Indonesia

26. East-West Resource Systems Institute (RSI)

1777 East-West Road
Honolulu
Hawaii 96848

Director: Dr. Harrison Brown

Contact: Daniel de Castro, Documentation Specialist

Staff: Permanent, 18; other, 18

Emphasis/Expertise:

"Promotes understanding and better relations among nations
East and West through generating new knowledge of, developing
policy aids and educational materials on, and organizing mutual
learning about resource problems . . . : maldistribution of
scarce resources, instability of international mechanisms for
resource exchange, emergence of choices for resource distribution,
and inter-dependent effects of resource use."

Recent/Current Projects:

1) Technology Assessment: development of analytical methodology
for assessing alternative technology decisions, 2) public policy
implementation and project management: methodology and resource
materials for the development of manpower resources required to
manage development projects on a national and international basis,
3) renewable resources planning and development: study the most
effective means of using traditional renewable resources without
destroying existing ecological systems

Library:

Collection has over 2000 cataloged entries. Reports, theses,
etc., regarding the three project areas make up the bulk of the
collection. Audio-visual materials documenting case histories
of relevant development initiatives are also an important part
of the collection

Keywords: technology transfer/conservation/
education/information systems/
training/decision making

27. Ecology Action of the Mid Peninsula

2225 El Camino Real
Palo Alto
California 94306

Contact: Robin Leler

Staff: Permanent, 4; other, 20+

Emphasis/Expertise:

Provide supplies and services that help people live in ways that are more self sufficient, and that protect the environment, specifically: mini-agriculture (use of the bio-dynamic/French intensive method), backyard gardening, and urban homesteading (for example, raising chickens, goats, bees, making wine and cheese)

Recent/Current Projects:

Maintains Ecology Action's garden supply store; small-scale agriculture research plot

Library: Extensive reference library relating to urban homesteading and gardening skills

Serial Publications: Monthly newsletter relating to local projects

Keywords: organic agriculture/consulting/
environment/food production

28. Economic Development Laboratory

Engineering Experiment Station
Georgia Institute of Technology
Atlanta
Georgia 30332

Director: Ross W. Hammond

Contact: Kay Ellen Aucillo, Assistant Research Scientist

Staff: Permanent, 44; other, as necessary

Emphasis/Expertise:

Adaptive technology, audiovisual productions, community and area development, energy, engineering, feasibility studies, housing, information systems, land use, manpower resources, market analysis, production control, quality control, technical assistance to industry, training programs, transportation, water resources

Recent/Current Projects:

1973- present: Brazil, Korea, Ecuador, Nigeria, Philippines, Indonesia, Kenya and Ghana; employment generation through stimulation of small scale industries. Emphasizing applied research, education and training, conferences and seminars, assistance to counterpart institutions. 1974- present: Korea, Ecuador, Nigeria, Philippines; a program of small industry development (USAID). Technical assistance in establishing and implementing small-scale industry development
Conducts industrial development internship program. Classes taught in English, Spanish and Portuguese. Developed a small industry data center. Promotes conferences and seminars. Efficient agricultural development through intermediate technology

Library:

Large holdings related to industrial development, appropriate technology, etc. Acquisitions announced in The International Informer

Serial Publications: Small Industry Development Newsletter (quarterly).

Keywords: technology transfer/information systems/
housing/water/energy/industries/Korea/
consulting/industrial standards/Kenya/
education/entrepreneur development/
industrial machines/training/Nigeria/
Indonesia/Philippines/Latin America/
marketing/Ghana/Brazil

29. Educational Systems Development Corporation

7th Floor
Merchants Bank Bldg.
313 Buendia Avenue
Makati, Rizal D-711
Philippines

President and General Manager: Joaquin S. Lim

Staff: Permanent, 40; other, varies

Emphasis/Expertise:

Rural and urban education through multimedia, audiovisual means. Subjects include agriculture, family planning, nutrition, labor education. Also have adapted AV equipment for battery use

Recent/Current Projects: Nutrition education package

Library: Small reference collection, mostly AV-related material

Keywords: education/Philippines/health/
family planning/nutrition/
agriculture

30. Fundação Educacional do Sul de Santa Catarina

Caixa Postal 370
Tubarao, Santa Catarina
Brazil

Presidente: Osvaldo Della Giustina

Contact: Centro de Dados Básicos

Staff: Permanent, 130; temporary, 59

Emphasis/Expertise:

An organization concerned with education and research, including socioeconomic research, regional planning, elaboration of industrial profits, technical and managerial assistance to small and medium scale industries, and consultancy to communities and public organizations

Recent/Current Projects:

Several programs of assistance to small and medium scale industries. Programs of capacitation of human resources in the south of Santa Catarina. Conduct studies about the social conditions and housing needs in Santa Catarina

Library: Specialized collection on economic planning

Keywords: education/consulting/Brazil/
industries/housing

31. Grupo de Investigación UniAndes-Gaviotas

Universidad de los Andes
Bogotá
Colombia

Director: Professor Jorge Zapp

Staff: Permanent, 4; other, 18

Emphasis/Expertise: Emphasis on water and electrical energy for the eastern plains of Colombia and Venezuela, usually at the domestic level

Recent/Current Projects:

Micro hydroelectric power plant, induction pump, solar water heaters, solar ether turbine, solar driers, soil-cement pipe, dams, walls; sail windmill, hydraulic ram

Library: Small collection of publications from other IT/AT organizations

Serial Publications: Reports on special subjects

Keywords: water/construction/cement/
Colombia/Venezuela/wind power/
solar energy/electric power/
Latin America/food processing

32. Institute for Local Self-Reliance

1717 18th St., N. W.
Washington, D.C. 20009

Contact: Rich Kazis, Director of Information Access

Staff: Permanent, 7; other, 6

Emphasis/Expertise:

Technical feasibility of community of self-reliance in high density living areas and the implications of such decentralization. Use of intermediate technologies appropriate in urban neighborhoods specifically: solar energy, low-tech waste utilization systems, low-tech industrial systems to be located within urban neighborhoods. Research, demonstrations and consulting

Recent/Current Projects:

Technical assistance to municipal agencies collecting data on credit activities of banks and savings and loan associations in Washington, D. C. Evaluation of the potential for a municipal bank for Washington, D. C. Planning and development of a rooftop greenhouse appropriate for an apartment house of low-income senior citizens. Design of a questionnaire to inventory a neighborhood's skill and tool base. Consulting in regard to a legal dispute concerning the city of Alexandria, Virginia's solid waste disposal system. Creation of a task force on energy conservation and insulation in a low-income neighborhood in Newark, New Jersey

Library: 1000 volumes, 70 periodicals, substantial report file

Serial Publications: Self-Reliance, other non-serial publications (list available)

Keywords: urban planning/consulting/health/
conservation/credit and banking/
solar energy/energy/methane/
greenhouses

33. Intermediate Technology

556 Santa Cruz Ave.
Menlo Park
California 94025

Directors: Peter Gillingham and Sandra C. Goff

Contact: Carol Manahan

Emphasis/Expertise:

Interested not only in technology but in the interfaces among technology, organization, work, economics, and resources. IT is the American organization most closely tied to the person and work of E. F. Schumacher

Recent/Current Projects:

Participating in several beginning projects, including the development of a community food processing center which will provide canning and drying facilities for the use of individuals and small groups in the Palo Alto area

Library: Developing a resource center concerning IT/AT

Serial Publications: Intermediate Technology Report (a quarterly review)

Keywords: conservation/information systems/
food processing/cooperatives

34. Intermediate Technology Development x Group (ITDG)

Parnell House
25 Wilton Road
London SW1V 1JS
United Kingdom

Staff: Permanent, 30; other, 300

Emphasis/Expertise:

Developing low cost "intermediate" technologies and industries with the objective of stimulating development and improving the quality of life, through an extensive volunteer network, qualified to comment on almost all aspects of development particularly agricultural production, transportation, housing, water supply, food technology, small industry development, rural health and hygiene

Recent/Current Projects:

Too numerous to list all. Some of the recent projects are:
Zaria: development of a factory to produce hospital equipment.
Swaziland and Botswana: research into small-scale water conservation, water storage systems. Nigeria: development of a low cost egg tray maker that can utilize waste paper as a resource

Library:

Exact holdings unknown; however an extensive collection relating to low cost, labor intensive technologies is maintained

Serial Publications: Appropriate Technology. Other non-serial publications

Keywords: industries/technology transfer/energy/
consulting/information systems/water/
United Kingdom/agriculture/health/
mechanized agriculture/methane/housing/
transportation/Nigeria/Swaziland/Botswana

35. International Development Research Centre (IDRC) SEE ALSO #65

P. O. Box 8500
Ottawa
Ontario K1G 3H9
Canada

President: Dr. W. David Hopper

Contact: Jean de Chantal, Centre Librarian

Staff: Permanent, 265; other, 97

Emphasis/Expertise:

Funding of research projects in developing nations to promote economic and social development. Emphasis is multidisciplinary

Recent/Current Projects:

Supports Technonet Asia (#65); send for Projects 1975 with 1976 supplement for complete list. Random examples include Nigeria: grain legume information center, established by the International Institute of Tropical Agriculture, Ibadan, to provide information on cowpeas and other grain legumes; Senegal: a demonstration survey to examine the relationship of economic social, and demographic factors

Library: Small collection of items relating to AT/IT

Serial Publications: Technonet Asia

Keywords: consulting/information systems/
Canada/agriculture/industries/
Nigeria/Senegal

36. International Maize and Wheat Improvement Center
(Centro Internacional de Mejoramiento de Maíz y Trigo)

Londres 40
Apto. Postal 6-641
Mexico 6
D. F.

Director General: Haldore Hanson

Contact: Steven Breth

Staff: Permanent, 80

Emphasis/Expertise: Improvement of wheat, barley, triticale, maize

Recent/Current Projects:

Maintains 7 research sites. Participates in regional work-shops. Operates germ plasm bank. Conduct training at CIMMYT for researchers and extension personnel worldwide

Keywords: crop improvement technology/
Mexico/training

37. International Plant Protection Center

Oregon State University
Corvallis
Oregon 97331

Director: Stanley F. Miller

Contact: Allan Deutsch, Information Services/Administration

Staff: Permanent, 11

Emphasis/Expertise:

Weed control research, all phases, but particularly those systems, technologies, and methods pertaining to small farmers in developing countries

Recent/Current Projects:

Weed Control Systems for Representative Farms in Developing Countries, a nine year old USAID/OSU project. Project personnel have been placed in Colombia, Ecuador, Brazil and El Salvador. Currently a two-man team of agronomists are in Costa Rica. Project expects to locate a two-man team in Asia in early 1977

Library:

Reference library relative to agronomic and socioeconomic aspects of weed control. Maintains a computerized file on world manufacturers of pesticide application equipment (not including aerial or small applicators)

Serial Publications: Infoletter. Other non-serial publications

Keywords: aquatic weed control/Brazil/
weed control/Latin America/
Ecuador/Colombia/agronomy

38. International Rice Research Institute

Agricultural Engineering Dept.
P. O. Box 933
Manila
Philippines

Director General: Dr. Nyle C. Brady
Contact: Donald O. Kuether, Associate Agricultural Engineer
Staff: Permanent, 46
Emphasis/Expertise:

Improving rice production for the small farmer. One section of the Institute, the Agricultural Engineering Dept., is interested in helping mechanized small rice farmers, and encouraging local manufacture of farm machinery

Recent/Current Projects:

Development of a low-cost gravity fed, manually pushed applicator for injecting fertilizer and insecticides into plant root zones, development of a manually operated rubber diaphragm pump, development of a 17 hp four wheel tractor, revisions of existing axial flowthresher, study on the effects of hard pan with different land tillage systems, studies into alternative techniques of rice production and post-production systems, and continuation of industrial extension effort

Serial Publications: Newsletter: IRRI Farm Machinery Newsletter
Other non-serial publications

Keywords: rice/agriculture/Philippines/
industries/consulting/crop
improvement technology/mechanized
agriculture

39. International Voluntary Services, Inc.

1555 Connecticut Ave., N. W.
Washington, D. C. 20036

Acting Executive Director: John Rigby
Contact: Young-Chang Lai, Program Director for Asia and the South Pacific
Staff: Permanent, 24; other, 67
Emphasis/Expertise:

Agricultural development, rural and village development, village technology, public health, nutrition, and family planning

Recent/Current Projects:

Algeria: supporting teachers of English as a foreign language.
Bangladesh: managing an Integrated Rural Development Program (demonstration plots). Botswana: land use surveys, advising in vocational education. Ecuador: construction of feeder roads, conducting training courses for auxiliary nurses and other health personnel. Other projects

Library: Small reference collection

Keywords: agriculture/family planning/
economic development/nutrition/
training/education/health/
rural development/Algeria/
Bangladesh/Ecuador/Botswana/
pilot projects

40. Latin-American Institute

St. Gallen Graduate School of Economics, Business and Public
Administration
Varnbuelstrasse 14, St. Gallen
Switzerland

Director: Dr. J. M. Baumer

Contact: Hans Lehne, lic. oec.

Staff: Permanent, 10; other, 5

Emphasis/Expertise: General economic, political, cultural, sociological
and historical research on Latin-America; development strategies

Recent/Current Projects: Application and research in appropriate
technology, financed by the Office for Technical Cooperation of
the Swiss Foreign Office

Library: Reference collection relating to alternative energy sources,
storage of food, small scale industry, water supply, agricultural
devices and methods

Keywords: economic development/Switzerland/
energy/Latin America

41. Lushoto Integrated Rural Development Project (LIDEP)

P. O. Box 60
Sonj
Tanzania

Project Director: S. Kahewanga

Contact: K.G. Kimela, Planning Assistant

Staff: Permanent, 135; other, 8

Emphasis/Expertise: Developing rural areas emphasizing simultaneous
advances in agriculture, construction, and general training

Recent/Current Projects:

Brick making plant: production capacity 7-9000 bricks/day.

Garage: serves as a general repair facility and training

facility. Carpentry workshop: provides production and training

opportunities. Rural development services: home economics

extension service that provides training to rural areas, and a

mobile construction unit that does "large scale" rural construction

projects to assist and train rural personnel

Library: Specialized collection relating to IT/AT, brick work, water,
wells, vegetables, population and other social factors.

Keywords: agriculture/consulting/training/
rural development/construction/
education/Tanzania

42. Luthern World Service

P. O. Box 66
150 Route de Ferney
1211 Geneva 20
Switzerland

Director: Dr. B. Muetzelfeldt

Contact: David T. Reichard, Administrative Assistant

Staff: Permanent, 30 (at Geneva); other, 2100+

Emphasis/Expertise:

Channels support to church-owned, -related, or -endorsed projects in developing countries through its Community Development Service, and in certain circumstances implements large-scale service programs. Development activities include projects relating to emergency situations, refugee resettlement and areas of endemic need with provision made for assistance in such fields as education, agriculture, water supplies, health and medical services, small-scale industries, social services, communications and transportation infrastructures

Recent/Current Projects:

Bangladesh: construction of roads, bridges and schools; river channelling; small-scale industry; resettlement; community development; disaster preparedness. Ethiopia: rehabilitation of drought victims through provision of plowing oxen and seed, tools and well drilling. India: housing, water supplies, agriculture, literacy, health services, resettlement. Jordan: provision of health care services and vocational training. Mauritania: nomad resettlement, health care services and a reforestation project. Mozambique: construction of an occupational rehabilitation center. Peru: community development program. Sudan: construction of dispensaries and veterinary stations; emphasis also on water supplies, agriculture and health care. Syria: operates three health care centers. Tanzania: operates refugee settlements which assist refugees in becoming self-reliant. Zambia: education, health, food, and clothing assistance is being provided to Namibians living in Zambia

Publications: Training for Village Renewal

Keywords: water/health/industries/education/
agriculture/rural development/
transportation/Switzerland/training/
resettlement/economic development/
construction/Bangladesh/Ethiopia/
India/Jordan/Peru/Sudan/Mauritania/
Mozambique/Syria/Tanzania/Zambia

43. M/s Garg Consultants

C-10/1
River Bank Colony
Lucknow, U. P.
India

Chief Consultant: M. K. Garg, M.Sc. (Tech.)

Staff: Permanent, 5

Emphasis/Expertise:

Primary emphasis is on development of package plants of appropriate technology complete in all respects which an entrepreneur can by slight modification apply in any country. The main field of work is the industrial and home living technologies.

Recent/Current Projects:

Small-scale sugar technology providing consulting services to 2600 producing units; white-ware manufacture at the village level; small-scale cement plant; cottage mechanized spinning plant (projects in conjunction with Appropriate Technology Development Center in India, and Intermediate Technology Development Group, London, England); research on Gobar Gas plants to make production more efficient; water seal latrine that costs only 30% of comparable septic tank systems

Library: Small reference collection

Keywords: India/industries/consulting/
food processing/methane/sugar/
health/cement

44. Marketing Development Centre

Cranfield School of Management
Cranfield
Bedfordshire
United Kingdom

Director: Dr. Malcolm Harper

Staff: Permanent, 2; other, 15

Emphasis/Expertise:

Preparation of training material for advisors, enterprise owner/managers; national or regional consulting on development and promotion of small-scale enterprise

Recent/Current Projects:

Preparation and field validation of training materials for exporters and export advisors in developing countries, including handicraft producers in conjunction with International Trade Centre, UNCTAD/GATT. Preparation and validation of training materials for small enterprise advisors in conjunction with ITDG. Research into training needs, consultancy and preparation of training material for small-scale enterprise owner/managers in Indonesia, in conjunction with University of Airlangga, Surabaya, the Government of Indonesia, and the Overseas Development Ministry

Keywords: consulting/business management/
education/United Kingdom/training/
entrepreneur development/industries/
Indonesia

National Academy of Sciences/National Research Council, *SEE #12*

45. National Institute of Agricultural Engineering

Overseas Department
Wrest Park, Silsoe
Bedford MK45 4HS
United Kingdom

Director: Professor C. J. Moss

Contact: J. B. Yates, Executive Officer

Staff: Permanent, 15

Emphasis/Expertise: Agricultural engineering

Recent/Current Projects:

Development of a cotton stalk puller. Banana aerial conveyor.
Dryland farming. Project appraisal and technical information in
developing countries

Library: Specialized holdings related to machinery and mechanized
agriculture

Serial Publications: Technical bulletins

Keywords: agriculture/United Kingdom/
mechanized agriculture/
consulting

46. National Technical Information Service

c/o U. S. Department of Commerce
425-13th St., N. W.
Washington, D. C. 20004

Director: William T. Knox

Contact: Risë L. Burggraff, Writer/Editor

Staff: Total, 417

Emphasis/Expertise:

Locating U. S. Government-sponsored research, development and
engineering reports and other analyses prepared by Federal
agencies, their contractors, or by special technology groups

Recent/Current Projects:

Maintains a distribution facility for Government technical reports.
Maintains computerized NTISearch, an information retrieval system

Library: Central repository for some half a million U. S. Government-
sponsored technical reports

Serial Publications: Weekly Government Abstracts, Government Reports Announcements and Index

Keywords: information systems/

47. Nature et Progrès

Association Européenne d'Agriculture et d'Hygiène Biologiques
3 Chemin de la Bergerie
91700 Ste-Geneviève des Bois
France

Président: Roland Chevriot

Contact: Yves Michel, Secrétaire

Staff: Permanent, 6

Emphasis/Expertise: Organic agriculture, health, soft technology

Serial Publications: Nature et Progrès

Keywords: health/France/
organic agriculture

48. New Alchemy Institute

P. O. Box 432
Woods Hole
Massachusetts 02543

Contact: Mary J. Todd

Emphasis/Expertise:

Development of ecologically derived forms of energy, agriculture, aquaculture, housing, and landscape

Serial Publications: Journal of the New Alchemists. Other non-serial publications

Keywords: agriculture/aquaculture/ecology/
conservation/housing/methane/
alternative fuels/wind power/
solar energy

49. Oxfam

272 Ganbury Rd.
Oxford
United Kingdom

Director General: Brian Walker

Contact: Paul Sherlock, Technical Education Advisor

Staff: Permanent, 150; other, 300+

Emphasis/Expertise:

A general granting agency working throughout the world in all areas of development. Areas of research are in water resources and sanitation. Also involved in introducing AT/IT into technical education in the United Kingdom and overseas

Recent/Current Projects:

Grant money supports a variety of projects of which an example is in Bangladesh where the emphasis is on equipment procurement and running costs of the rural community health program

Library: Small reference collection at headquarters

Serial Publications: Information from OXFAM

Keywords: education/United Kingdom/water/
health/Bangladesh/rural development

50. Partnership for Productivity Foundation USA, Inc. (PFP)

P. O. Box 170
Annandale
Virginia 22003

Executive Director: Andrew H. Oerke

Staff: Permanent, 2.5; other, many

Emphasis/Expertise:

Improving the capacity of people from traditional societies to organize and manage locally-owned, economic activities, both private and cooperative, especially in rural areas. The stress is on development which helps them retain their own society's personal and social values. "Intermediate Management" emphasizes practical business-like solutions to real-life problems

Recent/Current Projects:

Demonstration paddy rice farm in Nimba County, Liberia; in Kenya the "Bicycle Brigade" [the Rural Enterprise Extension System (REES)] involves training of locals as consultants, and establishment of a working credit institution

Serial Publications: Partnership for Productivity

Keywords: consulting/business management/
training/Africa/Kenya/Liberia/
entrepreneur development/rice/
rural development/cooperatives/
industries

51. Planning Research and Action Division

State Planning Institute
U. P.
Kalakankar House
Lucknow
India

Director: Sri Prabhakar Ghatе

Contact: Sri Virendar Bhasin, Specialist on Rural Industries

Staff: Permanent, 11; other, 10

Emphasis/Expertise:

The use of projects to devise and test pilot projects, new ideas and methods which can be put into general field operation. Conducts intensive seminars and training courses

Recent/Current Projects: Decentralized pottery project, Phulpur.

Mini crystal sugar production process. Biogas

Library: Access to general Institute library of over 26,000 books and about 150 Indian and foreign journals

Keywords: rural development/cooperatives/
family planning/biogas/training/
information systems/pilot projects/
technology transfer/India

52. Program for Advanced Studies in Institution Building and Technical Assistance Methodology (PASITAM)

Indiana University
1005 East 10th St.
Bloomington, Indiana 47401

Director: Professor William J. Siffin

Contact: Richard A. Steele, Coordinator PASITAM Documentation Center

Staff: Permanent, 7; other, 4

Emphasis/Expertise:

Primary emphasis on entrepreneur development, small business and cottage industry, rural and agricultural development, rural credit schemes

Recent/Current Projects:

Training and education (soft technology). Conducts workshops in LDSs for project planners using knowledge of management, some analytical skill, and organization theory to help participants design, implement, manage and evaluate a project

Library: Documentation and analysis center

Serial Publications: Series: PASITAM Design Notes; PASITAM Newsletter, the Design Process in Development

Keywords: business management/agriculture/
industries/credit and banking/
entrepreneur development/training/
rural development/education

53. Proyecto Huaylas-Ageup

Santo Toribio-Huaylas
Ancash
Peru

Executive Secretary: Humberto Bullón Campos

Staff: Permanent, 4; other, 40

Emphasis/Expertise:

This integrated development involves agro-technical, socio-political, educational and religious aspects, with special emphasis on applications of AT/IT to agro-technical industries

Recent/Current Projects:

Huaylas project is concerned with the applications of solar energy, and other appropriate energy transducers such as windmills

Library: Small reference collection. Affiliated with the Canadian Hunger Foundation's information system (SEE #14)

Keywords: mechanized agriculture/industries/
Peru/solar energy/wind power

54. Science Policy Research Unit

The University of Sussex
Mantell Building
Falmer, Brighton
Sussex, BN1 9RF
United Kingdom

Director: Professor C. Freeman

Contact: C. M. Cooper, Senior Fellow

Staff: Permanent, 4; other, 40

Emphasis/Expertise:

A research organization with three main program areas: long term forecasting and world models, technological innovation in advanced industrial economies, science and technology in the third world. The last area covers research on scientific institutions in LDCs, international transactions in technology, and the transfer of technology, and alternative technologies for LDC industry

Recent/Current Projects:

Study of machine-making industries in LDCs, teaching and training of new research workers from developing countries in science, technology and development issues, the role of machinery supply in the transfer of technology, theoretical focus of work on choice of techniques, transfer of technology to manufacturing industry in Thailand (rubber, tin cans, silk industries), choice of techniques in the manufacturing of tin cans in Kenya, Tanzania, and Thailand;

modern and traditional technologies for rural development:
connecting formal science system to rural problems; preparation
of teaching material on science, technology, and development

Keywords: industries/United Kingdom/education/
rural development/technology transfer/
systems modeling/training/Thailand/
Kenya/Tanzania

55. Self Help, Inc.

116 Sixth St., S. E.
Waverly
Iowa 50677

Executive Director: Ray C. Howland
Contact: Vern L. Schield, President and Founder
Staff: Permanent, 6; other, varies

Emphasis/Expertise: Produces small-scale farm machinery appropriate
in size, technology, and cost for the farmers of the developing
countries

Recent/Current Projects:

Hopes to contribute to a solution of the problem of world hunger
by providing machinery necessary to farm the land effeciently at
a cost within reach of the purchaser. Sells equipment at 65% of
cost, the other 35% furnished by concerned organizations and
individuals

Library: Selected files related to emphasis

Keywords: mechanized agriculture

56. Servicio de Información Técnica

Centro de Desarrollo Industrial de Ecuador (CENDES)
Apartado 5833
Guayaquil
Ecuador

Director: Dr. Victor Martínez

Staff: Permanent, 14

Emphasis/Expertise:

Scientific and technical information transfer to industries
already established to develop their capacity for technology
adaptation

Recent/Current Projects:

Evaluation of technological alternatives, specifically the
production of commodities that take into account the use of
national raw materials and export markets; preparation of manuals
that describe and analyze all the scientific and technological
information which can be tested at the pilot plant level

Library:

Library holdings concentrate on food technology, mechanized agriculture, chemical industry, and some publications on technology adaptation

Serial Publications: Noticias Tecnicas (monthly)

Keywords: technology transfer/Ecuador/
industries/pilot projects/
entrepreneur development/
marketing

57. Small Industries Corporation

229 South Street
Georgetown
Guyana

General Manager: D. Chase

Contact: M. G. McIntosh, Secretary

Staff: Permanent, 100; other, 300

Emphasis/Expertise: Loans to small business, and establishment of small and large ventures

Recent/Current Projects: Under construction: textile mill, leather tannery, bicycle plant

Serial Publications: Newsletter

Keywords: credit and banking/
industries/Guyana

58. Society for International Development

1346 Connecticut Ave., N. W.
Washington, D. C. 20036

Executive Secretary: Andrew E. Rice

Contact: Donaldine S. Finegold, Coordinator, Reference Service on Development Information

Staff: Permanent, 10; other, 2

Emphasis/Expertise: Provides a forum through world and regional conferences for the exchange of ideas, fact, and experience among all persons professionally concerned with problems of economic and social development in modernizing societies

Recent/Current Projects:

The SID Development Reference Service (49 rue de la Glacière, 75013 Paris, France) acts as a clearing house for questions, referring them to appropriate sources of information. The International Roster of Development Skills is an information retrieval system through which agencies can locate skilled personnel. SID Directory of Members provides a cross referenced listing of development experts throughout the world. Publishes handbooks such as International Guide to Directories of Resources in International Development, and Films of a Changing World. (catalog available)

Library: Reference library on IT/AT
Serial Publications: International Development Review (quarterly)
Other non-serial publications

Keywords: information systems/
consulting

59. Soil Association, Ltd.

Walnut Tree Manor
Houghley, Stowmarket
Suffolk IP14 3RS
United Kingdom

Contact: Brigadier A. W. Vickers, General Secretary

Staff: Permanent, 8; other, 50

Emphasis/Expertise:

A worldwide charity to promote a fuller understanding of the vital relationship between soil, plant, animal, and man, believing that nutrition derived from a balanced living soil is the greatest single contribution to health. It encourages an ecological approach, and offers organic husbandry as a viable alternative to modern intensive methods

Recent/Current Projects:

Educating of the public, particularly youth, in the principles and practices of organic husbandry. Conducts two courses per year, each of one week's duration, with as many as 1,000 students, 30 percent from overseas

Library: Maintains a reference collection for members only, relating to nutrition, health, and ecological matters

Serial Publications: Quarterly Review; series of educational booklets dealing with organic husbandry

Keywords: organic agriculture/agriculture/
ecology/education/nutrition/
United Kingdom/health

60. Stichting Sarvodaya Shramadana in Europe

2, Westerweg
Bergen, Nh
Netherlands

Director: P. Dijkstra

Staff: All volunteer, number varies

Emphasis/Expertise: Entrepreneur development

Recent/Current Projects:

Close relationship with Sarvodaya Movement in Sri Lanka. Includes such projects as batik making, woodwork, mat weaving, etc.

Keywords: entrepreneur development/handicrafts/
rural development/Sri Lanka/Netherlands

61. Swiss Association for Intermediate Technology (SVMT)

c/o Lateinamerikanisches Institut
Varnbuelstrasse 14
9000 St. Gallen
Switzerland

President: Annette Berweger-Kaiser

Contact: Hans Lehne

Staff: Permanent, 5; other, 50

Emphasis/Expertise:

Organization emphasizes development through promotion, diffusion, and application of appropriate small-scale technological procedures. Technical as well as socioeconomic aspects are considered. Linkages have been established with third world and industrialized countries

Recent/Current Projects:

Construction and tests of solar cookers in six developing countries, grain storage in developing countries, cheap earthquake-proof building construction in Guatemala. Publicity and sensitivity work in Switzerland

Keywords: technology transfer/construction/
Switzerland/solar energy/consulting/
grain storage/Guatemala

62. Technische Werkgroep Ontwikkelingssamenwerking (T.W.O.)

Laan 1914 nt. 35,
Postbus 85
Amersfoort
Netherlands

Chairman: Jan Oomen

Contact: Ing. Jan Jonker

Staff: Permanent, 6; volunteers, 60

Emphasis/Expertise:

Water supply, transport and storage of water, sewage treatment, chemical analysis of water irrigation, hydropower building material and construction for low-cost housing. Wind energy, solar energy

Recent/Current Projects:

Purification of drinking water, a small hydropower installation, construction of a wooden water-wheel, windmills for water supply, construction of valves for irrigation

Library: Small specialized collection

Keywords: sewage treatment/wind power/
water/solar energy/housing/
irrigation/Netherlands/construction

63. Technology Consultancy Centre

University of Science and Technology
Kumasi
Ghana

Director: Dr. J. W. Powell

Staff: Permanent, 11; other 25

Emphasis/Expertise:

Emphasis on small industrial development through intermediate technology, and means of involving the University in this field

Recent/Current Projects:

Creation and operation of pilot production units at the University including soap, bolt, ceramics, weaving, agricultural engineering, and architecture; promotion of rural industries including Ashanti villages craft development, brass casting by lost wax process, bead making at Daabar, plantations at Offinso, industrial development at Elmina, and blacksmiths training workshop at Nandom

Serial Publications: Annual reviews and a quarterly newsletter

Keywords: consulting/pilot projects/Ghana/
rural development/agriculture/
industries/soap/handicrafts

64. Technology Transfer Center (TTC)

Korea Institute of Science and Technology
P. O. Box 131
Cheong Ryang, Seoul
Korea

Director: Dr. H. W. Pack

Staff: Permanent, 30

Emphasis/Expertise:

Provide a bridge between technology-giving and technology-receiving organizations for the Korean Government and domestic industries

Recent/Current Projects: State-of-the-art report on appropriate/intermediate technology in Korea

Library: Specialized materials relating to AT/IT

Keywords: technology transfer/
consulting/Korea

65. Technonet Asia, SEE ALSO #35

International Development Research Center
Tanglin P. O. Box 160
Singapore 10
Republic of Singapore

Director: Dr. Leon V. Chico

Contact: Dr. William J. Gall, Deputy Administrator

Emphasis/Expertise:

Stimulate the transfer of industrial (technical) information between and among the 11 participating organizations which comprise the TECHNUNET co-operative network: Bangladesh, Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, Sri Lanka, Thailand

Recent/Current Projects:

Industrial extension officers' training course (to date 48 personnel have attended); conducted First Asian Industrial Extension Officers' Conference in November, 1975; maintains access to the Technical Information Service of the National Research Council of Canada (NRC/TIS)

Library: Has indirect access to NRC/TIS

Serial Publications: TECHNUNET Asia

Keywords: information systems/technology transfer/
consulting/Singapore/Bangladesh/Korea/
Hong Kong/Indonesia/Malaysia/Thailand/
Philippines/Sri Lanka

66. United Nations Industrial Development Organization (UNIDO)

P. O. Box 707
A-1010
Vienna
Austria

Executive Director: Dr. Abd-El Rahman Khane

Contact: Mr. W. H. Tanaka, Acting Head, Development and Transfer of Technology Section, International Centre for Industrial Studies, UNIDO

Staff: Permanent, 332; other, 800

Emphasis/Expertise:

As the central coordinating agency in this field in the UN system, it promotes industrial development of developing countries through technical assistance, advisory services, action-oriented studies, meetings, training programs, etc. Qualified to comment on all aspects of industrial technology

Recent/Current Projects: Planning an industrial and technological information bank; operates industrial inquiry service; many other projects too numerous to be listed completely

Library: Extensive collection on all aspects of industrial development including appropriate technology

Serial Publications: UNIDO Newsletter (monthly). Mimeographed series of compilations on technologies from developing countries

Keywords: technology transfer/industries/
consulting/information systems/

67. U.S. Department of Housing and Urban Development

Office of International Affairs
Division of Technology and Documentation
Washington, D. C. 20410

Director: Thomas R. Callaway

Staff: Permanent, 24

Emphasis/Expertise:

Program and technical information related to the full range of housing and urban development interests including technology transfer, information exchange, and support of research

Recent/Current Projects: Consulting, information searches, publications

Library: A comprehensive collection regarding housing and related subjects

Serial Publications:

HUD International Information Series, HUD International Country Profiles, HUD International Information Sources Series, HUD International Special Reports

Keywords: housing/information systems/
technology transfer/construction

68. University of Arizona

Tucson
Arizona, 85721

Emphasis/Expertise:

Interest in Appropriate Technology is widespread throughout the institution, as illustrated by the following examples:

1) Laboratory of Native Development, Systems Analysis and Applied Technology (NADSAT), administered by the University's Office of Arid Lands Studies (845 North Park Avenue, Tucson, Arizona 85719), provides technical assistance to American Indian tribes of the southwest U. S. for more effective use and economic development of their reservations' natural resources, and seeks to transfer current technology to the tribes to assist in their expressed goal of greater self-determination. To this end, the program seeks to apply technology designed to address development in arid and semiarid regions, to adopt technological solutions to the unique personnel and institutional situations on each reservation, and to present resulting recommendations in such a format as to facilitate information transfer to the tribe

Contact: Michael E. Norvelle, Natural Resources Development Specialist

2) Niger Natural Resources Planning Project, a component of the University's institutional US/AID 211(d) grant. This project seeks to assess the status of natural resources (water, soils, infrastructure, institutions, agriculture, etc.) in a region of Niger, evaluating various strategies for development and making the results of the evaluation and the methodology of the evaluation

available to the Government of Niger. Appropriate technology approaches to development will form a significant component of these strategies. As a result of field work there, team members have acquired information on technologies currently in use in the region

Contact: Dr. John E. Crow, Project Director

3) The College of Engineering, with emphasis on technology transfer through its programs in reliability, materials, energy systems, and sanitary and environmental engineering, carries out innovative research into many aspects of intermediate technology, for example: dust control through the use of electrically-charged artificial fog to suppress dust in manufacturing and earth-moving operations; evaporation control by means of small-scale floating plastic devices; dew absorption apparatus as a water-saving mechanism; methane research; sand control/soil stabilization investigations; and various energy conversion techniques

Contact: Dr. Terry Triffet, Research Director of Engineering and Associate Dean

Library:

The University's Office of Arid Lands Studies maintains a computerized arid lands information system (ALIS) plus a small specialized collection of appropriate materials not usually available in conventional libraries

Keywords: technology transfer/Niger/training/
rural development/decision making/
entrepreneur development/industries/
information systems/pilot projects/
systems modeling/consulting/methane/
industrial machines/energy

69. University of the Philippines, Institute for Small-Scale Industries (UP/ISSI)

E. Virata Hall
E. Jacinto St.
UP, Campus, Diliman
Quezon City - 3004
Philippines

Acting Director: Paterno V. Vilorio

Contact: Arturo O. Mangabat, Research Engineer

Staff: Permanent, 120

Emphasis/Expertise:

Promotion and development of low-cost automation as adaptive/appropriate technology for small and medium industries, entrepreneur development, consulting, research, and training, with emphasis on small industry

Recent/Current Projects:

State-of-the-Art Review Series conducted to determine the different levels of technology used in selected industries, including wooden furniture, shoemaking, garments, foundry, electroplating, tin container, plastics, coco-coir, food processing; project study preparation for small and medium industry; resettlement area development; establishing Marikina Shoe Trade Commission Data Bank; establishing the UP-ISSI Adaptive Technology Department; identification of potential industries for Tondo Foreshore project; and application of low-cost automation concepts and techniques, including design of machinery and equipment for small and medium industries

Library: Specialized collection of data on IT/AT

Serial Publications: Small Industry Journal

Keywords: technology transfer/consulting/
entrepreneur development/industries/
Philippines

70. Volunteers in Technical Assistance (VITA)

3706 Rhode Island Ave.
Mt. Rainier
Maryland 20822

Executive Director: Thomas H. Fox

Contact: Cynthia Conti, Administrative Assistant

Staff: Permanent, 19; volunteer, 4,500

Emphasis/Expertise:

A by-mail technical problem solver for developing countries worldwide. It is particularly qualified to comment on alternative technologies, technical delivery systems, hardware design, agriculture, food and water resources.

Recent/Current Projects:

Number of projects too numerous to list all. Two examples are:
Lime Production: VITA volunteers working with Centro Cooperativo Industrial, Honduras, and VITA-Honduras have designed a lime kiln that has reduced the required fuel by 40 percent. The design has been replicated by a commercial brick company in Honduras.
Agricultural Implements: In collaboration with the International Institute of Tropical Agriculture in Nigeria, a VITA volunteer panel has been working on a new farming system for the lowland humid tropics. Project will design and test certain implements that are essential to the system

Library:

A comprehensive collection of material and designs in most technical fields, specifically solar energy, agricultural and water resources, basic rural technologies

Serial Publications: VITA News (quarterly), and Vis-a-Vis (quarterly).
Other non-serial publications

Keywords: information systems/consulting/
technology transfer/agriculture/
industries/Honduras/Nigeria/
rural development

71. Whole Earth Truck Store

558 Santa Cruz Ave.
Menlo Park
California 94025

Contact: Pat, Kim, Nancy, George, Annie, or Benjo

Staff: Permanent, 6

Emphasis/Expertise:

Concerned about the over-consumption of energy and other resources.
Emphasize that there are other ways to exist that will allow us
to preserve the environment, and make it possible for a larger
portion of the population to rediscover meaningful work and have
rewarding lives

Recent/Current Projects: Continue to distribute literature regarding
techniques and technologies for non-exploitive living

Library: Retail books and merchandise

Serial Publications: The Coevolution Quarterly (continuation of the
Whole Earth Catalog)

Keywords: environment/conservation/
energy/ecology

72. World Council of Churches, Commission on the Churches Participation in
Development (WCC/CCPD)

105 Route de Ferney
P. O. Box 66
1211 Geneva, 20
Switzerland

Director: C. I. Itty

Contact: Pascal de Pury

Staff: Permanent, 2; other, 3

Emphasis/Expertise:

Techniques of small animal husbandry, wind and solar energy
techniques that can be mastered by village craftsmen

Recent/Current Projects:

Directory of appropriate techniques used by the WCC technical
network members; technical appraisal of projects; study of
handicrafts; grain storage training program for a year in Cameroun

Serial Publications: Occasional circulars relating to techniques appropriate to the recipient

Keywords: animal husbandry/Switzerland/
agriculture/handicrafts/
solar energy/grain storage/
wind power/ Cameroun

73. World Neighbors

5116 North Portland Ave.
Oklahoma City
Oklahoma 73122

President: James Morgan

Contact: Kenneth W. Tull, Director, Overseas Development Materials

Emphasis/Expertise: Motivational aspect of appropriate technology.

Promotion of technology already available within the concerned country

Recent/Current Projects: 90 projects on-going in 28 different countries

Serial Publications: World Neighbors in Action (a quarterly publication in both English and Spanish)

Keywords: motivation training

74. Yantra Vidyalat

Bardoli-1
Dist. Surat
India

Contact: Shri Mohan Parikh

Staff: Permanent, 15, volunteer, 2-3

Emphasis/Expertise: Improved agricultural hand tools and bullock-driven implements: design, production and sales

Recent/Current Projects: Biogas plants (using organic, i. e. farm, and factory waste); solar energy, particularly flat type ovens and water heaters; organic gardening

Library: Specialized collections on agricultural and rural engineering, rural sanitation, biogas, solar energy

Keywords: India/agricultural implements/
organic agriculture/biogas/
solar energy/

SUBJECT INDEX TO SELECTED ORGANIZATIONS

- Africa, 22, 50
 agricultural implements, 5, 14, 74
 agriculture, 1, 2, 4, 8, 14, 17, 23,
 24, 25, 29, 34, 35, 38, 39, 41,
 42, 45, 48, 52, 59, 63, 70, 72
 agronomy, 37
 Algeria, 39
 alternative fuels, 3, 6, 48
 animal husbandry, 1, 11, 14, 72
 aquaculture, 48
 aquatic weed control, 12, 37
- Bangladesh, 4, 14, 39, 42, 49, 65
 biogas, 7, 8, 25, 51, 74
 Botswana, 34, 39
 Brazil, 28, 30, 37
 business management, 15, 24, 44, 50,
 52
- Cameroun, 72
 Canada, 13, 14, 19, 35
 cement, 5, 31, 43; *SEE ALSO ferro cement*
 Colombia, 31, 37
 conservation, 3, 16, 20, 26, 32, 33,
 48, 71
 construction, 3, 5, 7, 12, 14, 31, 41,
 42, 61, 62, 67
 consulting, 1, 4, 10, 11, 12, 15, 18, 21,
 23, 24, 27, 28, 30, 32, 34, 35, 38,
 41, 43, 44, 45, 50, 58, 61, 63, 64,
 65, 66, 68, 69, 70
 cooperatives, 14, 19, 20, 24, 33, 50, 51
 credit and banking, 19, 32, 52, 57
 crop improvement technology, 36, 38
- dairy industry, 5, 14
 decision making, 19, 26, 68
 desalination, 13
- ecology, 2, 16, 18, 20, 48, 59,
 71
 economic development, 39, 40, 42
 economic plants, 12
 Ecuador, 37, 39, 56
 education, 2, 10, 14, 19, 26, 28,
 29, 30, 39, 41, 42, 44, 49, 52,
 54, 59
 electric power, 31
 energy, 3, 12, 20, 21, 25, 28, 32,
 34, 40, 68, 71; *SEE ALSO methane,*
 solar energy, wind power
 entrepreneur development, 6, 24,
 28, 44, 50, 52, 56, 60, 68, 69
 environment, 2, 27, 71
 Ethiopia, 42
- family planning, 29, 39, 51
 ferro cement, 12, 14
 fibers, 7, 18
 food processing, 7, 25, 31, 33, 43
 food production, 1, 4, 12, 14, 27
 France, 16, 17, 47
- Ghana, 28, 63
 grain storage, 10, 15, 61, 72
 greenhouses, 13, 32
 Guatemala, 61
 guayule, 12
 Guyana, 57

- habitat, 16
- handicrafts, 5, 60, 63, 72
- health, 2, 29, 32, 34, 39, 42, 43, 47, 49, 59
- Honduras, 70
- Hong Kong, 65
- housing, 5, 7, 10, 28, 30, 34, 48, 62, 67

- India, 1, 5, 6, 8, 11, 14, 18, 42, 43, 51, 74
- Indonesia, 25, 28, 44, 65
- industrial machines, 10, 28, 68
- industrial standards, 28
- industries, 6, 11, 15, 16, 18, 20, 22, 24, 28, 30, 34, 35, 38, 42, 43, 44, 50, 52, 53, 54, 56, 57, 63, 66, 68, 69, 70
- information systems, 2, 4, 14, 17, 26, 28, 33, 34, 35, 46, 51, 58, 65, 66, 67, 68, 70
- irrigation, 7, 11, 62

- Jordan, 42

- Kenya, 14, 28, 50, 54
- Korea, 28, 64, 65

- Latin America, 14, 28, 31, 37, 40
- Lesotho, 14
- Liberia, 50

- Malaysia, 65
- Mali, 14
- marketing, 14, 19, 28, 56
- Mauritania, 42
- mechanized agriculture, 4, 8, 10, 17, 23, 34, 38, 45, 53, 55
- methane, 6, 7, 8, 12, 13, 32, 34, 43, 48, 68
- Mexico, 36
- motivation training, 73
- Mozambique, 42

- Netherlands, 60, 62
- New Guinea, 23
- Niger, 14, 68
- Nigeria, 28, 34, 35, 70
- nutrition, 29, 39, 59

- organic agriculture, 27, 47, 59, 74
- organic matter, 3

- Pakistan, 7
- Peru, 42, 53
- Philippines, 24, 28, 29, 38, 65, 69
- pilot projects, 4, 39, 51, 56, 63, 68

- remote sensing, 12
- resettlement, 42
- rice, 38, 50
- rural development, 1, 5, 6, 8, 11, 14, 18, 23, 39, 41, 42, 49, 50, 51, 52, 54, 60, 63, 68, 70

Senegal, 14, 35
sewage treatment, 62
Singapore, 65
soap, 20, 63
solar energy, 3, 6, 7, 12, 13, 21,
25, 31, 32, 48, 53, 61, 62, 72,
74
Sri Lanka, 60, 65
Sudan, 42
sugar, 22, 43
Swaziland, 34
Switzerland, 40, 42, 61, 72
Syria, 42
systems modeling, 12, 21, 54, 68

Tanzania, 41, 42, 54
technology transfer, 1, 5, 8, 10,
11, 22, 24, 26, 28, 34, 51, 54,
56, 61, 64, 65, 66, 67, 68, 69,
70
Thailand, 10, 54, 65
tobacco, 24
training, 2, 6, 17, 19, 26, 28, 36,
39, 41, 42, 44, 50, 51, 52, 54,
68
transportation, 14, 34, 42

United Kingdom, 9, 21, 22, 34, 44,
45, 49, 54, 59
urban planning, 32

Venezuela, 31

water, 12, 14, 16, 25, 28, 31,
34, 42, 49, 62
weed control, 37
West Indies, 15
wind power, 3, 7, 8, 13, 21, 25,
31, 48, 53, 62, 72

Zambia, 42

QUESTIONNAIRE

1. What is the:
 - a. Name of your organization as you would like to have it appear in the guide?

 - b. Name and title of the organization's director?

 - c. Name and title of the person responding to this questionnaire?

2. How many people does your organization employ as:
 - a. Permanent staff?

 - b. Volunteer, extension, or project related personnel?

3. What is the primary emphasis of your organization?
In other words, about which subjects (i.e. alternative fuels, technology delivery systems, consulting, hardware design, entrepreneur development, etc.) would your organization be particularly qualified to comment?

4. Do you have any on-going projects? If so please list and give brief summary of project.

5. Do you publish a newsletter/journal/serial publication concerning Intermediate/Appropriate Technology or related subject such as energy, ecology, alternative fuels and power sources, etc.? If so please list.

6. Do you maintain a library or data collection relating to Intermediate/Appropriate Technology? If so provide a brief description of your holdings.

7. Would you like to receive a copy of the guide when it is completed?

NOTE: This questionnaire is already return addressed (see other side). Please fold as indicated, staple, stamp and return. Thank you for your cooperation.



THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA 85719

OFFICE OF ARID LANDS STUDIES
845 N PARK
TEL (602) 884-1955

September 30, 1976

Dear Sir:

I have just finished a state-of-the art report regarding Appropriate/Intermediate Technology as part of my graduate work at the University of Arizona, Tucson. It quickly became apparent to me that there is no comprehensive guide to the library literature for this subject. Appropriate Technology is unlikely to become established as a development strategy as long as the fundamental literature remains buried by non-specific titles in the current indices. I propose to develop a guide to Appropriate/Intermediate Technology literature, including guides to information services and practitioners, such as yourself. I am therefore soliciting your cooperation to ensure that your organization is properly listed in the guide.

Please respond to the enclosed questionnaire. If the questionnaire does not provide the opportunity for you to express some unique aspect of your organization or you need additional space to respond to a question, feel free to provide additional material.

Sincerely,

Harry L. Weaver
Research Assistant

HLW/bp

OTHER ORGANIZATIONS*

Action Research Center for
Entrepreneurship
3rd Floor, 35 New Marine Lines
Bombay 400-020
India

African Studies Center
Michigan State University
100 International Center
East Lansing, Michigan 48824
U.S.A.

Allahabad Agricultural Institute Inc.
M.O. Centre, Stony Point
New York, N.Y.
U.S.A.

Antipoverty Limited
67 Godstow Road
Wolvercote, Oxford
OX2 8NY
England

Applied Scientific Research
Corporation of Thailand
196, Phaholyothin Road
Bang Khen
Thailand

Appropriate Technology Advisory Unit
Christian Relief and Development
Association
P.O. Box 5674
Addis Ababa
Ethiopia

Appropriate Technology Development
Group
B IV/36 Safdarjung Development Scheme
New Delhi 16
India

Auroville Centre for Environmental
Studies
Auma Research and Development
Facility
3 rue Dupuy, Pondicherry
605002, India

Badan Urusan Tenaga Keya Sukatela
Indonesia (BUTSI)
(Indonesian Board for Volunteer
Service)
Jalan Halimun 4
Jakarta, Indonesia

Catholic Foreign Missions
Mary Knoll
New York 10543
U.S.A.

CECOCO
Chuo Boeki Goshi Kaisha
P.O. Box 8
Ibaraki City
Osaka
Japan

Center for International Studies
Cornell University
170 Iris Hall, Tower Road
Ithaca, New York 14850
U.S.A.

Center for Policy Alternatives
Massachusetts Institute of Technology
Room 39-551, 77 Massachusetts Ave
Cambridge, Massachusetts 02139
U.S.A.

Centre for Development Studies
Ulloor
Trivandrum 695011
Kerala
South India

*Not responding to questionnaire

Centre International Pour le
Développement Agricole (CIRDA)
19 Rue Dufrenoy
75116 Paris
France

Centre National de Promotion
de Petites et Moyennes Entreprises
B.P. 1086, Lome
Togo
West Africa

Chilean Institute of Technology
Research (INTEC)
Casilla 667
Santiago
Chile

Chilalo Agricultural Development Unit
C.A.D.U.
P.O. Box 3376
Addis Ababa, Ethiopia

ENDA
P.O. Box 3370
Dakar
Senegal

Federal Institute of Industrial
Research
Private Mail Bag 1023
Ikeja Airport
Nigeria

Food and Agriculture Organization of
the United Nations
Rural Institutions Division
Via delle Terme di Caracalla
00100 Rome
Italy

Fundación para el Fomento de la
Investigación Científica (FICITEC)
Apartado Aéreo 27872
Bogota D.F.
Colombia

Gandhian Institute of Studies
Appropriate Technology Development Unit
Post Box 116
Rajghat, Varanasi 221001
India

German Foundation for International
Development
1 Berlin 27
Reiherwarder, Berlin
Germany

Groupe de Recherches sur les
Technologies Appropriées
54 Rue de Varenne
Paris 75007
France

Indonesian Board for Volunteer Services
Butsi Secretary
Tromol Pos 3290
Jakarta
Indonesia

Industrial Research Unit
University of Ife
Ife-Ife, Western State
Nigeria

Industry Development Program
Development Academy of the Philippines
3rd Floor, BF Condominium, Aduana
Manila, Philippines

Institut Pertanian Bogor
(Bogor Agricultural University)
Fatemeta Jalan Gunung Gede
TLP BOT 571
Bogor, Malaysia

Institut for Policy Studies
1520 New Hampshire Avenue
Washington, D.C. 20036
U.S.A.

Institute of Development Studies
University of Sussex
Brighton BN1 9RE
United Kingdom

Integrative Design Associates, Inc.
1740 N Street, NW
Washington, D.C., 20036

Intercontinental Educational Media
N.V.P.O. Box 42
Aerdenhout
The Netherlands

Intermediate Technology Workshops
P.O. Box 401, Waff Road
Zaria, North-Central State
Nigeria

International Centre for Research in the
Semi-Arid Tropics (ICRISAT)
1-11-256 Begumpet, Hyderabad 50016
India

Malaysian Agricultural Research and
Development Institute (MARDI)
Jalan Marktab
Kuala Lumpur
Malaysia

Marga Institute
(Sri Lanka Centre for Development
Studies)
P.O. Box 601
Colombo
Sri Lanka

Mexican Institute of Technological
Research
Techno-Economics Division
Calzada Legaria 694
Mexico 10 D.F.
Mexico

Mindanao State University
Regional Adaptive Technology Center
Marawi City
Mindanao
Philippines

National Academy of Engineering
Office of the Foreign Secretary
2101 Constitution Avenue
Washington, D.C. 20418
U.S.A.

National Center for Appropriate
Technology (NCAT)
P.O. Box 3809
Butte, Montana 59701
U.S.A.

National Industrial Development
Corporation
P.O. Box 99
Malkerns
Swaziland
South Africa

National University
Department of Civil Engineering
Faculty of Technology
P.O. Box 518
Addis Ababa, Ethiopia

Organization of Economic Cooperation
and Development
94 rue Chardon-Lagache
75016 Paris
France

Overseas Development Council (ODC)
1717 Massachusetts Ave., N.W.
Washington, D.C. 20036
U.S.A.

Servicio de Documentación y Comunicación
Rural (SEDOC)
C.E.P.A. Ap. 2929
Managua, Nicaragua

Small Scale Industries
Office of the Development Commission
Nirman Bhavan (South Wing), 7th Floor
Maulana Azad Road
New Delhi II
India

Small Industries Development Organization
Shirika La Kuhudumia
Uwanda, Vidogo
P.O. Box 2476
Dar es Salaam
Tanzania

Société d'Aide Technique et de
Coopération (SATEC)
110 rue de l'Université
Paris 7e
France

Southeast Asia Technology Co. Ltd.
(SEATEC)
Nai Lert Building
87 Sukhumvit Rd
Bangkok
Thailand

Stichting Technische Ontwikkeling
Ontwikkelings Landen (TOOL)
Postbus 525
Eindhoven, Celebeslaan 6
Netherlands

Tanzania Agricultural Machinery
Testing Unit
P.O. Box 1389
Arusha, Tanzania

Soong Jun University
Integrated Development Center
135 Sang-do Dong
Seoul 150
Korea

Tchuba (The American Committee for
Cape Verde)
14 Beacon Street
Boston, Mass. 02108
U.S.A.

Techboserve, Inc.
36 Old King's Highway South
Darien, Connecticut 06820
U.S.A.

Technische Hogeschool Eindhoven
Division of Microprojects
Postbus 513
Eindhoven
Netherlands

Tropical Products Institute
Rural Food Technology Advisory Group
Industrial Development Department
Culham, Abingdon, Oxon OX14 3DA
United Kingdom

UNESCO
Committee for Development Planning
Department of State
Washington, D.C. 20520

UNICEF
Village Technology Unit
P.O. Box 44145
Nairobi
Kenya

United Nations Economic and Social
Commission for Africa and the Pacific
(ESCAP)
Sala Santitham
Rajdamnern Ave
Bangkok
Thailand

United Nations Economic and Social Council
Advisory Committee on the Application
of Science and Technology
Department of State
Washington, D.C. 20520
U.S.A.

United Nations Economic Commission
for Africa
Village Technology Unit
c/o Human Resources Development
Division
P.O. Box 3001
Addis Ababa
Ethiopia

U.S. Department of Agriculture
500 12th Street S.W. No. 502
Washington D.C. 20250
U.S.A.

Village Design
1545 Dwight
Berkeley, California 94703
U.S.A.

Village Technology Innovation Experiment
V.T.I.E.
P.O. Box 31
Goat Hill
Addis Ababa
Ethiopia

Village Technology Unit
P.O. Box 45
Jalan Halimun 4
Jakarta
Indonesia

Voluntary Committee on Overseas Aid
and Development (VCOAD)
International Development Centre
Parnell House
25 Wilton Road
London SW1V 1JS
United Kingdom

Volunteers for International
Development (VID)
Box 4543
Stanford, California 94305
U.S.A.

Volunteers in Asia
Appropriate Technology Project
Box 4543
Stanford, California 94305
U.S.A.

LIST OF INDEXING AND ABSTRACTING TOOLS

1. A.I.D. Research and Development Abstracts (quarterly; [e.g. v. 5, no. 1, July 1977])
US/AID Bureau for Technical Assistance, Washington, D.C. 20523
Abstracts of R&D publications by subject fields, plus separate listing of bibliographies, author index, index of issuing offices
Access to IT information through use of subject field listing in each issue, such as
 /development assistance/
 /science and technology/
 /education, extension, and advisory work/
2. Bibliography of Agriculture (monthly, with annual accumulation)
Oryx Press, 3930 E. Camelback Rd., Phoenix, Arizona 85018
[formerly issued by USDA; but see also #10 of this listing]
Data provided by National Agricultural Library from its CAIN
Access to IT information through its subject index under such terms as
 /economic development/
 /economies, developing/
3. Dissertation Abstracts International / Comprehensive Dissertation Index
University Microfilms International, Ann Arbor, Michigan 48106
Access to IT information through its Section B (the Sciences), pt. 2 (Engineering) of the Index, under such terms as
 /intermediate technology/
 /appropriate technology/
 /economic development/
 permuted from dissertation titles
4. Engineering Index (annual, with monthly update [e.g. vol. 15, no. 8, August 1977])
Engineering Index, Inc., 345 East 47th Street, New York, N.Y. 10017
Access to IT information through its subject index, pt. 4, under such terms as
 /technology/
 /technological forecasting/
5. Environment Index (annual, with monthly update)
Environment Information Center, 292 Madison Ave., New York, N.Y. 10017
Access to IT information through its index under such terms as
 /industrial development/
 /developing nations/
6. FAO Documentation-Current Bibliography (monthly) / Current Index (yearly cumulative issue)
Food and Agriculture Organization of the United Nations, Via delle Terme di Caracalla, 00100 Rome, Italy

Access to IT information through subject (KWOC) index in each issue (plus yearly cumulative index) under such terms as
/intermediate technology/
/appropriate technology/
/economic development/

7. Government Reports Announcements and Index (biweekly; cummulated)
National Technical Information Service, Springfield, Virginia 22161
Access to IT information through subject index under term
/technical assistance/
8. Journal of Economic Literature (quarterly; [e.g., vol. 15, no. 1, March 1977])
American Economic Association, 1313 21st Ave. S, Nashville, Tennessee 37212
Formerly the Journal of Economic Abstracts
Access to IT information through the following subsections of section "Current Periodicals":
#121: Economic development studies of less developed countries
#225: Social indicators and social accounts
9. Monthly Catalog of U.S. Government Publications (monthly, including subject index, with annual subject index accumulation in December issue)
U.S. Government Printing Office, Washington, D.C. 20402
Access to IT information in subject index by way of such terms as
/economic development/
/technology transfer/
10. National Agricultural Library Catalog (monthly, including subject index in each issue, with 6-months cumulation in June issue, annual in December)
U.S. Department of Agriculture, Beltsville, Maryland 20705
See also #2 of this listing
Access to IT information by way of such terms as
/economic development/
/technology transfer/
11. Public Affairs Information Service Bulletin (annual, with weekly supplements)
PAIS, 11 West 40th Street, New York, N.Y. 10018
Access to IT information through use of such index terms as
/underdeveloped states, economic planning/
/technology, social aspects/
/technology transfer/
12. Science Citation Index (annual, with quarterly updates)
Institute for Scientific Information, Inc., 325 Chestnut St., Philadelphia, Pennsylvania 19106
Access to IT information through Permuterm Subject Index volume under such keywords, permuted from article titles, as
/intermediate technology/
/appropriate technology/
/developing countries, technology/
/economic development/

13. Social Sciences Citation Index (annual, with quarterly updates)
Institute for Scientific Information, Inc., 325 Chestnut St., Philadelphia, Pennsylvania 19106
Issued in parts, of which pt. 2, Source Index and Corporate Address Index, also includes a Permuterm subject index providing access to IT information under such terms, permuted from article titles, as
/intermediate technology/
/appropriate technology/
/developing countries, technology/
/economic development/
14. Social Sciences Index (quarterly, with annual cumulation)
H.W. Wilson Co., 950 University Ave., Bronx, New York 10452
Supersedes earlier titles: International Index to Periodicals (to March 1965), Social Sciences and Humanities Index (April 1965-March 1975)
A single alphabetical arrangement, with access to IT information under such terms as
/economic development/
/technology and civilization/
/technology transfer/
/underdeveloped areas/
15. UNDEX: United Nations Document Index (10 issues per year)
United Nations Documentation Services Division, New York, N.Y. 10017
Issued in three series: A (Subject index [most useful search term: science and technology: transfer to developing countries]), B (Country index), and C (List of documents). The most comprehensive, bibliographically, is C, with best access to IT information by reference therein either to two UN Committees: UNIDO (UN Industrial Development Organization), and/or UNDP (UN Development Program); or by reference to C's monthly "Broad subject key to document series" under such terms as
/development planning/
/housing, building and planning/
/science-technology/
/technical cooperation/

A SELECTED LIST OF JOURNALS/NEWSLETTERS

1. Alternative Sources of Energy (quarterly)
ASE/Attention: Donald Marier, Rt. 2, Box 90A, Milaca, Minnesota 56353
No. 20, March 1976.* Subscription: \$5.00 (US)
2. Appropriate Technology (quarterly)
Intermediate Technology Publs., Ltd., 9 King St., London WC2E 8HN, England
Vol. 4, no. 1, May 1977.* Subscription: £4
3. Ceres: FAO Review on Development (bi-monthly)
FAO, Via delle Terme di Caracalla, 00100 Rome, Italy
v. 8, no. 5, September/October 1975.* Subscription L.3 500
4. Development Digest (quarterly)
US/AID; a quarterly journal of excerpts, summaries, and reprints of
current materials on economic and social development.
Vol. 15, no. 2, April 1977.* Subscription: \$7.90 (orders to U.S.
Government Printing Office, Washington, D.C. 20402)
5. Impact of Science on Society (quarterly)
UNESCO, Box 433, New York, N.Y. 10016
Vol. 27, no. 1, January/March 1977.* Subscription: fr 32.
6. International Development Review (quarterly)
Society for International Development, 1346 Connecticut Ave., N.W.,
Washington, D.C. 20036
Vol. 19, no. 1, 1977.* Subscription: \$25.00
7. International Labour Review (monthly)
International Labour Organization, CH1211, Geneva 22, Switzerland
Vol. 113, no. 3, May-June 1976.* Subscription: ?
8. Investment Africa
Vol. 4, no. 2, June 1976.* No charge?
United Nations Economic Commission for Africa, P.O. Box 3001,
Addis Ababa, Ethiopia
9. Mother Earth News (bi-monthly)
P.O. Box 70, Hendersonville, North Carolina 28739
No. 24, November 1973.* Subscription: \$6.00
10. OECD Observer (bi-monthly)
Organization for Economic Cooperation and Development, 2 rue Ander Pascal,
75775 Paris, France.
No. 67, December 1973.* Subscription: \$4.50

*Latest issue seen

11. Rain (monthly)
Eco-Net, Portland State University Environmental Education Center,
P.O. Box 751, Portland, Oregon 97297
12. Rural Development Network Bulletin
Overseas Liaison Committee, American Council on Education, 11 Dupont
Circle, Washington, D.C. 20036
No. 6, pt. 2, May 1977.* No charge?
13. Small Industry Development Network, A Quarterly Newsletter
Economic Development Laboratory, Engineering Experiment Station, Georgia
Institute of Technology, Atlanta Georgia 30332
Vol. 2, no. 4, 2d quarter 1976.* No charge
14. Small Industry Journal
Echanis Press, Inc., 388 Dr. J. Fernandez Avenue, Mandaluyong, Rizal,
Philippines
Vol. 9, no. 4, October/December 1976.* Subscription: \$8.00
15. War on Hunger (monthly)
U.S. Agency for International Development, Publications Division,
Office of Public Affairs, Room 4886, State Department Building,
Washington, D.C. 20523
Vol. 11, no. 7, July 1977.* No charge
16. World Hunger/Action for Development (bi-weekly)
Voluntary Committee on Overseas Aid and Development, Parnell House,
25 Wilton Rd., London SW1V 1JS, England

APPENDIX B

Annotated Bibliography

BIBLIOGRAPHY

1

ABERNATHY, W./TOWNSEND, P.

1975

TECHNOLOGY, PRODUCTIVITY AND PROCESS CHANGE.

TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE 7(4):379-396.

THIS PAPER PROPOSES A NEW MODEL TO CLARIFY THE FACTORS THAT FACILITATE OR INHIBIT SUCCESSFUL APPLICATION OF NEW TECHNOLOGICAL KNOWLEDGE TO IMPROVE PRODUCTIVITY. TECHNOLOGICAL INPUTS HAVE THE LEAST IMPACT WHERE THEY ARE NEEDED MOST. THE AUTHORS' HYPOTHESIS IS THAT THE STAGE OF DEVELOPMENT WHICH A PRODUCTIVE SEGMENT HAS REACHED ALONG THIS PROFILE WILL DETERMINE ITS PROPENSITY TO HOST PARTICULAR TYPES OF INNOVATION. A DESCRIPTIVE MODEL OF PROCESS EVOLUTION IS PROPOSED AS A NEW BASIS FOR CLARIFYING THE RELATIONSHIPS AMONG TECHNOLOGICAL INNOVATION AND PRODUCTIVITY IMPROVEMENT WITHIN AN ORGANIZATION.

FORECASTING

2

AHIMAZ, F.J.

1975

A METHODOLOGY FOR FORMULATING AND IMPLEMENTING SCIENCE POLICY FOR A SMALL DEVELOPING COUNTRY (COSTA RICA).

CORNELL UNIVERSITY, ITHACA, NEW YORK, PROGRAM ON POLICIES FOR SCIENCE AND TECHNOLOGY IN DEVELOPING NATIONS.

THREE METHODS FOR FORMULATING AND IMPLEMENTING POLICY (HUR GLASS, BUBBLE UP, SECTOR) ARE DISCUSSED. THE DEVELOPMENT OF A MODIFIED BUBBLE UP APPROACH FOR SCIENCE POLICY FOR COSTA RICA IS PRESENTED.

DEVELOPING COUNTRIES/GOVERNMENT/COSTA RICA

3

AIRYARATUE, A.T.

1976

SARVODAYA SHRAMADANA IN SRI LANKA.

DEVELOPMENT DIGEST 14(1):97-99.

THE SARVODAYA SHRAMADANA MOVEMENT IN SRI LANKA IS A PROGRAM INTENDED TO MOTIVATE A POPULATION TOWARD SELF-HELP AND IMPROVEMENT. THE CONCEPT OF EACH INDIVIDUAL'S PART AND IMPORTANCE IN THE OVERALL NATIONAL DEVELOPMENT IS STRESSED AND TRAINING CENTERS ARE DESCRIBED WHICH PROVIDE INSTRUCTION IN COMMUNITY LEADERSHIP, AGRICULTURE, VILLAGE TECHNOLOGY AND OTHER TECHNIQUES NECESSARY FOR CHANGE, BEGINNING AT THE VILLAGE LEVEL.

DEVELOPING COUNTRIES/SRI LANKA/EDUCATION

4

ALBA, M.

1975

THEMATIC FRAMEWORK OF THE TECHNOLOGY AND DEVELOPMENT INSTITUTE.

CONFERENCE AND SEMINAR ON TECHNIQUES AND METHODOLOGIES FOR STIMULATING SMALL-SCALE LABOR-INTENSIVE INDUSTRIES IN DEVELOPING COUNTRIES, ATLANTA, GEORGIA, MAY 10-14, SUMMARY OF PROCEEDINGS, 17 P.

FOCUS OBJECTIVES OF THE TECHNOLOGY DEVELOPMENT INSTITUTE (TDI) OF THE EAST-WEST CENTER ARE ON THEMATICS OF EMPLOYMENT ORIENTED DEVELOPMENT PLANNING, TECHNOLOGY ADAPTATION, ENTREPRENEURSHIP DEVELOPMENT, INSTITUTION BUILDING, PUBLIC POLICY AND DEVELOPMENT ADMINISTRATION. TDI'S GOALS ARE FURTHER IMPLEMENTED THROUGH USE OF REGIONAL ADAPTIVE TECHNOLOGICAL CENTERS IN UNIVERSITIES IN KOREA, PHILIPPINES AND INDONESIA. THE TRIAD FORMED BY TDI, THE REGIONAL ADAPTIVE TECHNOLOGY CENTER, AND CENTERS OF EXCELLENCY FORM THE ORGANIZATION FOR TRANSFER OF TECHNOLOGY TO THE SMALL FARM SECTOR. TDI WORKS IN COOPERATION WITH 23 INSTITUTIONS IN 6 COUNTRIES.

DEVELOPING COUNTRIES/KOREA/INDONESIA/PHILIPPINES/AGRICULTURE/ENTREPRENEURSHIP/TECHNOLOGY TRANSFER/CONSULTING/INDUSTRIES/EDUCATION

5

ALLAHWER, M.N.

1974

APPROPRIATE TECHNOLOGY: WHAT, AND FOR WHOM?

IMPACT SCIENCE 24(3):267.

NO ABSTRACT.

SOCIAL ASPECTS

6

ALTSCHUL, A.

1974

SOME REFLECTIONS ON CONDITIONS OF TRANSFER OF MODERN FOOD TECHNOLOGIES.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SUMMARY OF THE PROCEEDINGS OF THE SYMPOSIUM ON STRATEGIES FOR A.I.D. PROGRAMS IN SELECTED AREAS OF SCIENCE AND TECHNOLOGY, CAMBRIDGE, APRIL 1974, VOL. 1, 53 P.

THE PROBLEM OF MAINTAINING THE PROTEIN CONTENT OF DIETS UNDER CONDITIONS OF EXPANDING POPULATION IS DISCUSSED. THREE FOOD AND NUTRITION MODELS ARE PRESENTED, ALL OF WHICH REDUCE OR ELIMINATE THE NEED FOR ANIMAL PROTEIN IN A DIET. CHANCES OF TRANSFERRING FOOD TECHNOLOGY ARE BEST IN A COUNTRY EXPERIENCING ECONOMIC PROGRESS. THE NEED TO EDUCATE LEADERS REGARDING OPPORTUNITIES OFFERED BY NEW TECHNOLOGIES IS DISCUSSED.

DEVELOPING COUNTRIES/NUTRITION/FOODS/PROTEIN/TECHNOLOGY TRANSFER/COST-BENEFIT ANALYSIS

7

ALTSCHUL, R.

1976

URBANIZATION IN WEST AFRICA. PAPER PRESENTED AT

WEST AFRICA CONFERENCE, UNIVERSITY OF ARIZONA, TUCSON, APRIL 11-15, 1976,
PROCEEDINGS. P. 74-81.

URBAN GROWTH RATES IN DEVELOPING COUNTRIES, THE PROPORTION ATTRIBUTABLE TO
RURAL-URBAN MIGRATION AND RURAL-URBAN INCOME DIFFERENTIALS ARE DISCUSSED.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/LABOR MIGRATION

8

ANONYMOUS

1974

DIFFERENT DEVELOPMENT MODELS OR STYLES.

ECONOMIC BULLETIN FOR LATIN AMERICA 19(1-2):40-64.

A VERY GENERAL DISCUSSION OF A MATHEMATICAL PREDICTION MODEL. PROJECTIONS FOR
THE NEXT 30 YEARS ARE MADE REGARDING GROWTH, EMPLOYMENT AND THE DISTRIBUTION OF
INCOME IN LATIN AMERICA.

DEVELOPING COUNTRIES/DECISION MODELS/SOCIAL ASPECTS/FORECASTING/LATIN AMERICA

9

ANONYMOUS

1974

SOME CONCLUSIONS ON INTEGRATION, INDUSTRIALIZATION AND ECONOMIC DEVELOPMENT
IN LATIN AMERICA.

ECONOMIC BULLETIN FOR LATIN AMERICA 19(1-2):65-79.

THE ACTUAL CONSUMER MARKET IN LATIN AMERICA IS MUCH SMALLER THAN THE POTENTIAL
MARKET. LOW PER CAPITA INCOME TOGETHER WITH ITS UNEQUAL DISTRIBUTION MEANS THAT
A VERY LARGE PORTION OF THE POPULATION IS UNABLE TO TRANSLATE ITS NEEDS INTO
EFFECTIVE DEMAND. PERCENTAGE OF IMPORTS AND EXPORTS OF GOODS IN THE PRIMARY,
TRADITIONAL, INTERMEDIATE, AND METAL MANUFACTURE AND MACHINERY SECTORS IS
PRESENTED. THIS STATUE IS RELATED TO THE RELATIVE MATURITY OF LATIN AMERICAN
DEVELOPMENT.

DEVELOPING COUNTRIES/INDUSTRIES/ECONOMIC ASPECTS/LATIN AMERICA

10

ANONYMOUS

1975

APPROPRIATE TECHNOLOGY: EFFORTS TO DEVELOP TECHNOLOGICAL PLURALISM WITH EACH
SOCIAL SYSTEM, POLITICAL IDEOLOGY AND CULTURE FREE TO DEVELOP ITS OWN
PARTICULAR LINE.

IMPACT OF SCIENCE ON SOCIETY 23:251-255.

SOCIAL ASPECTS/POLITICAL ASPECTS

11

ANONYMOUS

1975

ECONOMICS OF ORGANIC FARMING.

APPROPRIATE TECHNOLOGY 2(4):4.

A REPORT ON A STUDY PUBLISHED BY THE CENTER FOR THE BIOLOGY OF NATURAL SYSTEMS AT WASHINGTON UNIVERSITY, SAINT LOUIS, MISSOURI, THAT FINDS ORGANIC FARMING CAN BE AS ECONOMICAL AS CONVENTIONAL METHODS. SIXTEEN CORN-BELT ORGANIC FARMS WERE SURVEYED.

ORGANIC FARMING/COST-BENEFIT ANALYSIS/ENERGY/CONSERVATION

12

ANONYMOUS

1975

INTERMEDIATE TECHNOLOGY: A NEW APPROACH TO DEVELOPMENT PROBLEMS.

OECD OBSERVER 75:26-28.

A REPORT ON THE DEVELOPMENT OF INTERMEDIATE TECHNOLOGY IS PRESENTED. DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/SOCIAL ASPECTS/AGRICULTURE/INDUSTRIES

13

ANONYMOUS

1975

MINI-GRAIN DRYER.

APPROPRIATE TECHNOLOGY 2(4):2.

A REPORT ON THE DEVELOPMENT AT THE UNIVERSITY OF AGRICULTURAL SCIENCES, BANGALORE, OF A MINI-GRAIN DRYER USEFUL FOR REMOVING MOISTURE FROM SMALL LOTS OF FOOD GRAINS OR OTHER FARM PRODUCE IS PRESENTED. THIS DRYER IS ALSO USEFUL FOR THE DRYING OF FOOD GRAINS HARVESTED IN RAINY WEATHER, AND FOR DRYING GROUNDNUTS IMMEDIATELY AFTER HARVEST TO PREVENT MOLDING.

DEVELOPING COUNTRIES/DRYING/GROUNDNUTS/CROP PRODUCTION/GRAINS/MACHINE DESIGN/FARM EQUIPMENT

14

ANONYMOUS

1975

SIMPLE FILTER FOR INDIVIDUAL HOUSEHOLDS.

APPROPRIATE TECHNOLOGY 2(4):4.

A REPORT ON THE DEVELOPMENT OF A SIMPLE FILTER FOR HOUSEHOLD USE AT THE PAHLAVI UNIVERSITY DEPARTMENT OF COMMUNITY MEDICINE, SHIRAZ, IRAN. BASIC CONSTRUCTION IS OF GRAVEL, SAND, AND CHARCOAL. ABOUT 97 PERCENT OF ALL SUSPENDED MATTER AND BACTERIA CAN BE REMOVED.

DEVELOPING COUNTRIES/IRAN/SANITATION/WATER

15

ANONYMOUS

1975

STRATEGIES FOR CHOOSING WHICH VILLAGES OF AREAS SHOULD RECEIVE WATER FIRST.

VAIKUNT BHAT JHATA SHAKAR TRUST, BOMBAY, INDIA. DOCUMENTATION BULLETIN 20:1-5.

RELATIVE CHARACTERISTICS OF URBAN AND RURAL AREAS ARE DISCUSSED. SPATIALLY CONCENTRATED GOVERNMENT INVESTMENT IS COMPARED WITH SMALLER QUANTITY RURAL DISTRIBUTION. THE GOAL OF REDISTRIBUTING INCOME AND WORST-FIRST STRATEGIES IS DISCUSSED. A PRIORITY FORMULA USED BY THE INTER AMERICAN DEVELOPMENT BANK FOR VILLAGE PROJECTS IS PRESENTED.

DEVELOPING COUNTRIES/INDIA/COST-BENEFIT ANALYSIS/WATER/SOCIAL ASPECTS

16

ANONYMOUS

1975

VITA: APPROPRIATE TECHNOLOGY FOR THE THIRD WORLD.

SCIENCE 188(4142):1000.

A BRIEF SUMMARY OF THE PURPOSE AND CONTRIBUTIONS OF VOLUNTEERS IN TECHNICAL ASSISTANCE (VITA) IS PRESENTED. VITA IS AN ASSOCIATION OF VOLUNTEERS WHO SOLVE DEVELOPMENT PROBLEMS AT THE REQUEST OF DEVELOPING COUNTRIES.

DEVELOPING COUNTRIES/CONSULTING

17

ARIZONA STATE DEPARTMENT OF HEALTH, PHOENIX, ENVIRONMENTAL HEALTH SERVICES

1973

EARTH-PIT PRIVY.

SAPP AS AUTHOR. ENGINEERING BULLETIN 2. 12 P.

DESIGN AND CONSTRUCTION OF AN EARTH-PIT PRIVY COMPLETE WITH DRAWINGS. OTHER TYPES OF PRIVIES ARE BRIEFLY DISCUSSED.

EXCREMENT/SANITATION/BUILDING DESIGN/CONSTRUCTION METHODS

18

ASCHMANN, H.

1962

EVALUATIONS OF DRY LAND ENVIRONMENTS BY SOCIETIES AT VARIOUS LEVELS OF TECHNICAL COMPETENCE. IN

CIVILIZATIONS IN DESERT LANDS, RICHARD B. WOODBURY, ED., UNIVERSITY OF UTAH, SALT LAKE CITY, DEPARTMENT OF ANTHROPOLOGY, ANTHROPOLOGICAL PAPER 62:1-14.

NO ABSTRACT.

TECHNOLOGY MEASUREMENT

19

ASHLEY, J.

1975

THE MWANAMUGIMU NUTRITION CLINIC.

APPROPRIATE TECHNOLOGY 2(1):16-18.

THE OPERATIONAL AND SOCIAL ASPECTS OF THE MWANAMUGIMU CLINIC IN KAMPALA, UGANDA, ARE DISCUSSED. INFORMATION ON EDUCATION, SPECIFIC NUTRITION DEFICIENCIES, AND TREATMENT PROGRAMS IS PRESENTED.

NUTRITION/UGANDA/DEVELOPING COUNTRIES/DISEASE CONTROL

20

AUCIELLO, K.E./JOHNSTON, R./WAGENVELD, L.M. COMP.

1975

EMPLOYMENT GENERATION THROUGH STIMULATION OF SMALL INDUSTRIES: AN INTERNATIONAL COMPILATION OF SMALL-SCALE INDUSTRY DEFINITIONS.

GEORGIA INSTITUTE OF TECHNOLOGY, ATLANTA. 71 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/CONSULTING/ENTREPRENEURSHIP

21

AUSTIN, A.L./BREWER, J.W.

1971

WORLD POPULATION GROWTH AND RELATED PROBLEMS.

TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE 3(1):23-49.

MOMENTOUS TECHNOLOGICAL ADVANCES HAVE OCCURRED DURING THE PAST CENTURY BUT THE PENALTIES ARE BEGINNING TO APPEAR. IF SUCH A RATE OF TECHNOLOGICAL GROWTH CONTINUES, SOCIAL SYSTEMS WILL BECOME MORE COMPLEX WITH AN INCREASING PROBABILITY OF MALFUNCTION. VARIOUS MATHEMATICAL MODELS ARE ANALYZED FOR THEIR ABILITY TO PREDICT POPULATION GROWTH. GARBAGE DISPOSAL, ENERGY AND FOOD REQUIREMENTS OF FUTURE TIMES ARE DISCUSSED. DATA ARE EXTRAPOLATED TO SHOW PREDICTED TRENDS.

DEVELOPING COUNTRIES/POPULATION CONTROL/ENERGY/SOCIAL ASPECTS/FORECASTING/CROP PRODUCTION/REFUSE/FOODS/DECISION MODELS

22

BAKER, R.L. ET AL

1976

THE EVALUATION OF ALTERNATIVE DEVELOPMENT STRATEGIES RELATIVE TO THEIR ECONOMIC, POLITICAL, AND TECHNICAL FEASIBILITY IN LDCS.

UNIVERSITY OF ARIZONA, TUCSON, NATURAL RESOURCES PROGRAM. 46 P. (UNPUBLISHED MANUSCRIPT)

A PROPOSAL FOR AN INTERDISCIPLINARY TEAM TO CONCEIVE AND VALIDATE A PORTABLE METHODOLOGY OR MODEL OF STRATEGIES OPEN TO LDCS IN DEVELOPMENT OF NATURAL RESOURCES.

DEVELOPING COUNTRIES/DECISION MODELS/POLITICAL ASPECTS/NATURAL RESOURCES

23

BALLET, G.

1975

INTERMEDIATE TECHNOLOGIES AND PROBLEMS OF DEVELOPMENT.

GIORNALE DEGLI ECONOMISTI E ANNALI DI ECONOMIA 34(5-6):291-303.

NO ABSTRACT.

SOCIAL ASPECTS

24

BAKARSON, J.

1964

IS THERE A DIRECT ROUTE TO DEVELOPMENT? TRANSMITTING AND ADAPTING TECHNOLOGY.

CHALLENGE 12:32-35.

NO ABSTRACT.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/SOCIAL ASPECTS

25

BAKARSON, J.

1966

ENGINEERING FOR UNDERDEVELOPED COUNTRIES.

MECHANICAL ENGINEERING 88(3):32-34.

DISCUSSES ADVERSE EFFECTS OF HIGH CAPITAL OUTPUT RATIOS, A PROBLEM ASSOCIATED WITH SMALL MARKETS, LACK OF SUPPORTING INDUSTRIES, AND INADEQUATE SUPPLIERS. PROBLEMS IN QUALITY AND PRODUCTION CONTROL ARE RELATED TO HUMAN ATTITUDES AND INORDINATE LEAD TIMES TO PROCURE ADDITIONAL MATERIAL, POWER, OR QUALIFIED LABOR. FACTORS SUCH AS INFANT SUBSTITUTION AND PROTECTION TARIFFS ARE PRESENTED AS CAUSES OF HIGH COST TO SMALL SCALE INDUSTRY. SOLUTIONS MAY BE FOUND IN TECHNICAL DOWNGRADING AND PRODUCT LIMITATION.

DEVELOPING COUNTRIES/ECONOMIC ASPECTS/LABOR/INDUSTRIES

26

BARONGAN, E.

1975

LOW-COST AUTOMATION AT WORK: THE PHILACOR EXPERIENCE.

SMALL INDUSTRY JOURNAL 8(1):30-34.

THE CONCEPT OF LOW COST AUTOMATION IS DISCUSSED (A MACHINE-OPERATOR TO REPLACE A PURELY MANUAL TASK). THIS CONCEPT IS APPLIED TO THE PHILIPPINE APPLIANCE CORPORATION'S PLASTIC REFRIGERATOR DOOR VACUUM FORMING OPERATION.

DEVELOPING COUNTRIES/INDUSTRIES/MACHINE DESIGN/ENTREPRENEURSHIP

27

BARRY, L.

1976

IMPLICATIONS, INTERACTIONS AND IMPACTS OF TECHNOLOGY, ENVIRONMENT AND SOCIAL CONDITIONS ON NATURAL RESOURCES DEVELOPMENT.

UNPUBLISHED MANUSCRIPT, 17 P.

ERTS/LANDSAT DATA CAN PROVIDE AN INVALUABLE TOOL TO PLANNERS REGARDING THE IMPACT OF TECHNOLOGY ON NATURAL RESOURCES. IN TOO MANY CASES NATURAL RESOURCES DECISIONS ARE MADE IN THE POLITICAL ARENA. RESOURCE DEVELOPMENT/MONITORING PROGRAMS ARE PARTICULARLY IMPORTANT TO THE SURVIVAL OF REGIONS IN DELICATE ECOLOGICAL BALANCE. THE ROLE OF APPROPRIATE TECHNOLOGIES IN IMPLEMENTING PROGRAMS IS DISCUSSED.

DEVELOPING COUNTRIES/NATURAL RESOURCES/CONSERVATION/SOCIAL ASPECTS/REMOTE SENSING

28

BAR-ZAKAY, S.N.

1971

TECHNOLOGY TRANSFER MODELS.

TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE 2(3/4):321-335.

SUGGESTS A LIST OF ACTIVITIES TO BE UNDERTAKEN IN A SPECIFIED SEQUENCE BY INDIVIDUALS OR ORGANIZATIONS INTENDING TO ENGAGE IN A TECHNOLOGY TRANSFER PROJECT. OFTEN TECHNOLOGY TRANSFER IS ATTEMPTED WITH ONLY THE DONOR'S REQUIREMENTS IN MIND. THE TECHNOLOGY TRANSFER MODEL IS PRESENTED VIA A SEMI-PERT CHART. DONOR AND RECIPIENT RESPONSIBILITIES ARE HIGHLIGHTED. EFFECTS OF UNDESIRABLE SHORTCUTS BY EITHER PARTY ARE DISCUSSED.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/SOCIAL ASPECTS/POLITICAL ASPECTS

29

BASS, L.W.

1975

TECHNICAL AND MANAGERIAL HELP FOR SMALL ENTERPRISES.

SMALL INDUSTRY DEVELOPMENT NETWORK NEWSLETTER 2(1):2.

DISCUSSES THE TYPES OF ASSISTANCE RELEVANT TO SMALL ENTERPRISES. A PLAN FOR A NATIONAL HELP SERVICE IS OUTLINED.
DEVELOPING COUNTRIES/INDUSTRIES/BUSINESS MANAGEMENT/CONSULTING

30

BATEMAN, G.H.

1974

A BIBLIOGRAPHY OF LOW-COST WATER TECHNOLOGIES.

INTERMEDIATE TECHNOLOGY PUBLICATIONS, LTD., LONDON. 43 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/BIBLIOGRAPHIES/WATER

31

BAUMAN, G.F.

1975

FENCE POST DRIVER.

APPROPRIATE TECHNOLOGY 2(1):24.

A DESIGN FOR A MANUAL FENCE POST DRIVER PARTICULARLY SUITED FOR HILLY TERRAIN IS PRESENTED.

DEVELOPING COUNTRIES/CONSTRUCTION METHODS/PERU/FARM EQUIPMENT/TOOLS

32

BEACH, J.P.

1971

SIMPLIFIED SMALL FISHING BOAT CONSTRUCTION.

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME. 16 P.

THIS PAPER CONSIDERS SEVERAL CONSTRUCTION FEATURES OF SMALL FISHING BOATS AND ASSESSES LEVELS OF CONSTRUCTION DIFFICULTIES FOR RURAL LARIP. DRAWINGS ARE INCLUDED.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/CONSTRUCTION METHODS/BOATS

33

BENDER, K.

1974

INCREMENTAL INFRASTRUCTURE. IN

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SYMPOSIUM ON STRATEGIES FOR A.I.D. PROGRAMS IN SELECTED AREAS OF SCIENCE AND TECHNOLOGY, CAMBRIDGE, APRIL 1974, PROCEEDINGS, VOL. 2, 58 P.

INCREMENTAL CONSTRUCTION IS IDENTIFIED AS A MAJOR TOOL IN THE ATTACK ON THE WORLD HOUSING PROBLEM. WHILE THREE TECHNIQUES HAVE PROVEN EFFECTIVE IN PRODUCTION OF DWELLINGS, THEIR USE HAS BEEN RESTRICTED BY LACK OF PARALLEL TECHNOLOGIES FOR INFRASTRUCTURE. THE AUTHOR ANALYZES PROBLEMS AND COMPARES CAPITAL VS LABOR INTENSIVE TECHNOLOGIES, AND TRICKLE-DOWN VS DIRECT ACTION POLICIES.

TECHNOLOGY TRANSFER/SOCIAL ASPECTS/BUILDING DESIGN/CONSTRUCTION METHODS/ CONSTRUCTION MATERIALS/DEVELOPING COUNTRIES

34

BERGER, L.

1974

COMMENTS ON THE TRANSPORTATION PAPERS. IN

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SYMPOSIUM ON STRATEGIES FOR A.I.D. PROGRAMS IN SELECTED AREAS OF SCIENCE AND TECHNOLOGY, CAMBRIDGE, APRIL 1974, PROCEEDINGS, VOL. 2, 58 P.

THE COSTLY NATURE OF DEVELOPED COUNTRY APPROACHES TO THE URBAN TRANSPORTATION PROBLEM, AS COMPARED TO THE INCOMES OF PEOPLE IN LESS DEVELOPED COUNTRIES IS EMPHASIZED. FEEDER ROAD CONSTRUCTION IN RURAL AREAS WOULD BENEFIT FROM RESEARCH LEADING TO LOW COST METHODS OF PROTECTING DIRT ROADS FROM WEATHER. THE COSTS AND BENEFITS OF DRIVING LOW COST ROADS INTO ISOLATED AREAS ARE DISCUSSED IN CONNECTION WITH BRAZIL'S TRANSAMAZONAS AND NORTH PERIMETRAL ROADS.

TRANSPORTATION/ROADS/COST-BENEFIT ANALYSIS/BRAZIL/DEVELOPING COUNTRIES

35

BHALLA, A.S. ED.

1975

TECHNOLOGY AND EMPLOYMENT IN INDUSTRY.

INTERNATIONAL LABOR OFFICE, GENEVA. 324 P.

A COLLECTION OF CASE STUDIES INTENDED TO FILL THE GAP IN REPRESENTATIVE INFORMATION ON INTERMEDIATE/APPROPRIATE TECHNOLOGIES. CONCEPTUAL ISSUES AND QUESTIONS OF MEASUREMENT ARE ADDRESSED.

DEVELOPING COUNTRIES/LABOR/SOCIAL ASPECTS/INDUSTRIES/ECONOMIC ASPECTS

36

BOULDING, C. ET AL

1967

INTRODUCING INNOVATIONS IN DEVELOPING COUNTRIES. PAPER INCLUDED AS COURSEWORK IN

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MECHANICAL ENGINEERING DEPARTMENT, ENGINEERING PROJECTS LABORATORY, COURSE 2.67: DESIGN AND EXPERIMENT. SPRING, 1967.

A MANUAL TO HELP FIELD WORKERS INTRODUCE NEW IDEAS AND TECHNOLOGIES IN DEVELOPING COMMUNITIES. TAKES INTO ACCOUNT SUCH FACTORS AS THE ECONOMIC, SOCIAL AND POLITICAL DISPOSITION RELEVANT TO THE RECEIVING AREA. CONTAINS AN APPENDIX OF THREE CASE STUDIES.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/TECHNOLOGY TRANSFER/POLITICAL ASPECTS

37

BRAVO, A.

1975

BUILDING BRICKS.

SMALL INDUSTRY JOURNAL 8(1):33-36.

ECONOMIC FEASIBILITY OF BRICK MAKING IN THE PHILIPPINES IS PRESENTED VIA A COST-INCOME BALANCE SHEET.

DEVELOPING COUNTRIES/CONSTRUCTION MATERIALS/ECONOMIC ASPECTS/PHILIPPINES/BRICKS

38

BRESNIK, B. ET AL

1967

LOCAL RESOURCE UTILIZATION: A BAMBOO WHEELBARROW. PAPER INCLUDED AS COURSEWORK IN

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MECHANICAL ENGINEERING DEPARTMENT, ENGINEERING PROJECTS LABORATORY, COURSE 2.67: DESIGN AND EXPERIMENT. SPRING, 1967.

DESCRIBES THE DESIGN, CONSTRUCTION AND TESTING OF A WHEELBARROW MADE FROM NATIVE MATERIALS OF NEPAL, PARTICULARLY BAMBOO. WORK IS DIVIDED INTO FOUR MAJOR AREAS: FRAME, WHEEL, BEARINGS, AND BASKET.

DEVELOPING COUNTRIES/INDIA/TOOLS/TRANSPORTATION/CONSTRUCTION MATERIALS/BAMBOO/CONSTRUCTION METHODS

39

BRUCE, R.

1975

SOME NEW INDIAN DEVELOPMENTS IN SMALL SCALE SPINNING AND WEAVING.

APPROPRIATE TECHNOLOGY 2(3):9-10.

DISCUSSES ECONOMIC AND SOCIAL IMPACTS OF CENTRALIZED (LARGE INDUSTRY) VS DECENTRALIZED (SMALL INDUSTRY) TECHNOLOGIES RELATIVE TO KHANDI, INDIAN COARSE WOVEN CLOTH. A NEW MODEL OF MINI SPINNING AND WEAVING MACHINERY IS COMPARED WITH THE OLD.

DEVELOPING COUNTRIES/INDUSTRIES/CLOTHING/INDIA/COST-BENEFIT ANALYSIS/MACHINE DESIGN/TEXTILES

40

BUCKELE, W.F./CAMPBELL, J.K.

1975

FEASIBILITY OF USING INTERMEDIATE TECHNOLOGY TO PRODUCE AGRICULTURAL TOOLS AND MACHINERY IN GHANA. PAPER PRESENTED AT

AFRICAN STUDIES ASSOCIATION CONFERENCE, SAN FRANCISCO, OCTOBER 29-NOVEMBER 1, 1975, 100 P.

DESCRIBES EXISTING GHANAIAN INDUSTRIES SUITABLE FOR PRODUCING TECHNOLOGICALLY INTERMEDIATE AGRICULTURAL TOOLS AND EQUIPMENT. DISCUSSES THE SELECTION CRITERIA FOR THE TYPES OF ITEMS THAT COULD BE PRODUCED, AND PRESENTS PLANS AND ORGANIZATIONAL ALTERNATIVES FOR INSTIGATION OF TECHNOLOGICAL DEVELOPMENT. CONDITIONS TO AID SUCCESS OF MACHINERY PRODUCTION ARE DISCUSSED. CONCEPTS REGARDING TARIFFS AND PROTECTION OF DOMESTIC GOODS ARE PRESENTED.

DEVELOPING COUNTRIES/GHANA/AGRICULTURE/HARVESTING/CRBP PRODUCTION/INDUSTRIES/
FARM EQUIPMENT/GOVERNMENT/SOCIAL ASPECTS/BUSINESS MANAGEMENT/RICE/COCOA/MAIZE/
TOOLS/ECONOMIC ASPECTS

41

BURAS, N.

1972

SCIENTIFIC ALLOCATION OF WATER RESOURCES.

ELSEVIER PUBLISHING CO., NEW YORK. 208 P.

AFTER DISCUSSING THE BACKGROUND OF WATER RESOURCES ENGINEERING, THE AUTHOR DESCRIBES THE APPLICATION OF SYSTEMS THEORY TO GROUNDWATER MANAGEMENT. PROBLEMS ASSOCIATED WITH DEVELOPMENT DESIGNING AND OPERATIONS ARE ANALYZED. PROBABILITY THEORY, LINEAR AND DYNAMIC PROGRAMMING MODELS, AND SIMULATION METHODS ARE APPLIED FOR THE SOLUTION OF WATER RESOURCES PROBLEMS AND DESIGN OF WATER RESOURCES SYSTEMS. SOURCE BIBLIOGRAPHY IS INCLUDED.

WATER/RESOURCE MANAGEMENT/DECISION MODELS/ECONOMIC ASPECTS/BIBLIOGRAPHIES

42

BURCHARD, P.

1976

WHAT DO WE MEAN BY INTERMEDIATE TECHNOLOGY?

INTERMEDIATE TECHNOLOGY GROUP, MENLO PARK, CALIFORNIA, INTERMEDIATE TECHNOLOGY REPORT 1.

INTERMEDIATE TECHNOLOGY (IT) MEANS A RETURN TO SIMPLER TECHNOLOGY, DECENTRALIZATION, AND NON VIOLENCE. THE 'PRIMITIVE' VIEW (WE SHOULD ABANDON ALL TECHNOLOGY) AND THE 'ADAPTIVE' VIEW (ADAPT SOCIETY TO MORE HUMANE WAYS OF LIVING) ARE DISCUSSED. IT IS DEFINED AS BEING NO SPECIFIC PLACE BETWEEN HIGH AND LOW TECHNOLOGY RATHER IT IS UP FROM SMALL, DOWN FROM LARGE AND TOTALLY NEW.

SOCIAL ASPECTS

43

BURTON, I.

1974

TECHNOLOGY UTILIZATION IN WATER RESOURCE DEVELOPMENT AND MANAGEMENT. IN

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SYMPOSIUM ON STRATEGIES FOR A.I.D. PROGRAMS IN SELECTED AREAS OF SCIENCE AND TECHNOLOGY, CAMBRIDGE, APRIL 1974, PROCEEDINGS, VOL. 2, 58 P.

TECHNOLOGY THAT HAS PROVIDED SAFE, LOW COST AND ABUNDANT WATER SUPPLIES IN DEVELOPED COUNTRIES HAS NOT BEEN TRANSFERRED TO DEVELOPING ONES. DUE TO MONETARY RESTRICTIONS, CRITERIA FOR THE SELECTION OF APPROPRIATE TECHNOLOGY ARE DEVELOPED CONCENTRATING ON INCREMENTAL IMPROVEMENTS THAT CAN BE ORGANIZED AND IMPLEMENTED AT THE COMMUNITY LEVEL. IRRIGATION AND FLOOD CONTROL ARE DISCUSSED BRIEFLY.

DEVELOPING COUNTRIES/RESOURCE MANAGEMENT/WATER/COST-BENEFIT ANALYSIS

44

CAIN, A./AFSHAR, F./NORTON, J.

1975

INDIGENOUS BUILDING METHODS: MUD BRICK VAULT AND DOME BUILDING.

APPROPRIATE TECHNOLOGY 2(2):18-19.

DISCUSSES UPGRADING OF TRADITIONAL MUD BRICK BUILDING INDUSTRY BY INTRODUCTION OF VAULT AND DOME TECHNOLOGY. THE ECONOMY OF MUD BRICK BUILDING IS DISCUSSED. COMPARES INSIDE TEMPERATURE GRADIENT OF FLAT ROOFED AND DOMED ROOFED STRUCTURES.

ECONOMIC ASPECTS/COST-BENEFIT ANALYSIS/CONSTRUCTION METHODS/CONSERVATION/ DEVELOPING COUNTRIES/BUILDING DESIGN/BRICKS

45

CAMPBELL, J.K.

1975

DEVELOPMENT AND MANUFACTURE OF A THRESHER FOR DEVELOPING COUNTRIES OF SOUTH EAST ASIA.

AMERICAN SOCIETY OF AGRICULTURAL ENGINEERS, ST. JOSEPH, MICHIGAN, PAPER 75-1539. 7 P.

AN AXIAL-FLOW THRESHER WITH A CAPACITY OF ONE TON OF ROUGH RICE PER HOUR, DESIGNED TO BE MANUFACTURED IN COUNTRIES OF S.E. ASIA HAS BEEN DEVELOPED BY THE INTERNATIONAL RICE RESEARCH INSTITUTE.

DEVELOPING COUNTRIES/RICE/FARM EQUIPMENT/MACHINE DESIGN

46

CANADIAN HUNGER FOUNDATION, ONTARIO

1967

A HANDBOOK ON APPROPRIATE TECHNOLOGY.

SAME AS AUTHOR. 246 P.

A CONTRIBUTION TO COMMUNICATION IN THE FIELD OF APPROPRIATE TECHNOLOGY. PHILOSOPHICAL ASPECTS, CASE STUDIES, A BIBLIOGRAPHY, AND A SOURCE LIST ARE PRESENTED.

SOCIAL ASPECTS/DEVELOPING COUNTRIES/ANAEROBIC DIGESTORS/SOLAR ENERGY/METAL WORKING/GROUNDWATER/TOOLS/FARM EQUIPMENT/CEMENT/COOPERATIVES/BIBLIOGRAPHIES/ TECHNOLOGY TRANSFER

47

CAREY, R.G.

1970

THE PEACE CORPS.

PRAGER, NEW YORK. 274 P.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/CONSULTING

48

CASHMAN, T.

1975

THE NEW ALCHEMY INSTITUTE: SMALL SCALE ECOSYSTEM FARMING.

APPROPRIATE TECHNOLOGY 2(2):20-22.

SHOWS THE DEVELOPMENT OF A CLOSED ECOSYSTEM. DISCUSSES THE BENEFIT OF USING SELECTED KINDS OF FISH AND AGRICULTURE PRODUCTS. DISCUSSES USE OF SOLAR AND WIND POWER.

ECOLOGY/WIND POWER/SOLAR HEATING/WATER CONVEYANCE/AGRICULTURE/AQUACULTURE/
CONTROLLED ENVIRONMENT/ECOSYSTEMS/FOODS/FERTILIZERS/CROP PRODUCTION/IRRIGATION/
ALGAE

49

CLARAMITARO, B.

1974

THE NEED FOR ORGANIC FARMS DECLARED AT NORTHWEST MEETING.

ENVIRONMENT ACTION BULLETIN 23:1-8.

MOST U.S. FARMS HAVE BECOME ENERGY SINKS. FOSSIL FUELS ARE KNOWN TO BE ON A SHAKY BASE. SOLUTIONS TO THESE PROBLEMS LIE IN MORE MANUAL WORK, INCREASING THE SMALL FARM COMMUNITY, AND ESTABLISHING FOOD TRADING NETWORKS.

AGRICULTURE/ENERGY/CONSERVATION/FOODS/CROP PRODUCTION/FERTILIZERS/NITROGEN
COMPOUNDS/ORGANIC FARMING

50

CLARK, W.

1974

KEYNOTE ADDRESS. PAPER PRESENTED AT

NORTHWEST CONFERENCE ON ALTERNATIVE AGRICULTURE, CENTRAL WASHINGTON STATE
COLLEGE, ELIENSBURG, NOVEMBER 21-23, 1974.

TODAY'S AGRICULTURE IS HEAVILY DEPENDENT ON PETROLEUM PRODUCTS. CONFLICT
BETWEEN THE ENVIRONMENTALIST RESTRICTING PESTICIDES AND THE CONSUMER DEMANDING
HIGH QUALITY FOOD MUST BE RESOLVED THROUGH ALTERNATIVE FORMS OF AGRICULTURE.
GOVERNMENT POLICIES THAT PROMOTE LARGE FARMS, AND UNECONOMIC WATER PROJECTS
MUST BE CHANGED.

AGRICULTURE/ENERGY/GOVERNMENT/IRRIGATION/NITROGEN COMPOUNDS/ORGANIC FARMING/
CONSERVATION/FOODS

51

CLEMENT, G.H.

1975

INTERNATIONAL DEVELOPMENT RESEARCH CENTER OTTAWA, ONTARIO, CANADA.

CONFERENCE AND SEMINAR ON TECHNIQUES AND METHODOLOGIES FOR STIMULATING SMALL-SCALE LABOR-INTENSIVE INDUSTRIES IN DEVELOPING COUNTRIES, ATLANTA, GEORGIA, MAY 10-14, SUMMARY OF PROCEEDINGS, 17 P.

THE INTERNATIONAL DEVELOPMENT RESEARCH CENTER (IDRC) WAS ESTABLISHED TO ENCOURAGE, SUPPORT AND CONDUCT RESEARCH INTO THE PROBLEMS OF DEVELOPING COUNTRIES. ORGANIZATION, STRUCTURE AND FUNDING METHODS ARE PRESENTED. AS AN INDEPENDENT CORPORATION RATHER THAN AN ARM OF GOVERNMENT, THE IDRC OPERATES WITH SEVERAL ADVANTAGES. IDRC'S WORK IN THE ANDES REGION IS HIGHLIGHTED. IDRC'S CRITERIA FOR ACCEPTING PROJECTS ARE DISCUSSED.

DEVELOPING COUNTRIES/INDUSTRIES/ENTREPRENEURSHIP/CONSULTING/AGRICULTURE/TECHNOLOGY TRANSFER

52

COE, B.P.

1966

HOW TO HELP WORLD DEVELOPMENT WITHOUT LEAVING HOME.

CHEMICAL ENGINEERING 73(24):140-146.

THE HISTORY OF VOLUNTEERS IN TECHNICAL ASSISTANCE (VITA) IS PRESENTED AS WELL AS CONCEPTS AND OPERATIONS OF THE ORGANIZATION. TWO VITA PROJECTS ARE PRESENTED: A SOLAR COOKER AND WATER SUPPLY LINE.

DEVELOPING COUNTRIES/CONSULTING/SOLAR ENERGY/WATER CONVEYANCE

53

COLE, H.S.D. ET AL

1973

MODELS OF DOOM: A CRITIQUE OF THE LIMITS TO GROWTH.

UNIVERSE BOOKS, NEW YORK. 244 P.

NO ABSTRACT.

ENERGY/NATURAL RESOURCES/CONSERVATION/SOCIAL ASPECTS

54

COLLETT, J.

1975

OIL SOAKED BEARINGS: HOW TO MAKE THEM.

APPROPRIATE TECHNOLOGY 2(4):11-13.

THE ADVANTAGES OF OIL SOAKED WOOD BEARINGS ARE DISCUSSED. HARD WOODS SHOULD BE USED AND SOME SUITABLE WOODS ARE LISTED. PREPARATION METHODS ARE PRESENTED.

DEVELOPING COUNTRIES/CONSTRUCTION MATERIALS

55

CONGDON, R.J.

1975

DRAFT PROJECT PROPOSAL FOR A DOCUMENTATION EXERCISE IN SOCIALLY APPROPRIATE TECHNOLOGY AND THREE EXPERT MEETINGS.

TECHNISCHE HOOGESCHOOL, EINDHOVEN, THE NETHERLANDS. (UNPUBLISHED)

THE PROJECT IS DESIGNED TO ASSEMBLE AND DISSEMINATE INFORMATION ABOUT TECHNOLOGIES APPROPRIATE TO RURAL AREAS OF DEVELOPING COUNTRIES. AREAS OF CONCERN ARE: COTTAGE INDUSTRIES, ENERGY SUPPLIES AND THE MANUFACTURE OF PLANTS AND EQUIPMENT. INCLUDED IS A SUGGESTION AND PLAN TO ORGANIZE A MEETING OF EXPERTS REPRESENTATIVE OF GLOBAL GEOGRAPHIC REGIONS.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/CONSULTING/ENERGY/MACHINE DESIGN

56

CONGDON, R.J. ED.

1975

LECTURES ON SOCIALLY APPROPRIATE TECHNOLOGY.

COMMITTEE FOR INTERNATIONAL COOPERATION ACTIVITIES, TECHNISCHE HOOGESCHOOL, EINDHOVEN, THE NETHERLANDS. 235 P.

TWELVE LECTURES ON APPROPRIATE TECHNOLOGY ARE PRESENTED WHICH PROVIDE A TECHNICALLY DETAILED INTRODUCTION TO SOCIALLY APPROPRIATE TECHNOLOGY. APPLICATION AND PHILOSOPHICAL ASPECTS ARE DISCUSSED.

SOCIAL ASPECTS/DEVELOPING COUNTRIES/TOOLS/FARM EQUIPMENT/EDUCATION/ENERGY/ CONSTRUCTION MATERIALS/TECHNOLOGY TRANSFER/WIND POWER/SOLAR ENERGY/MACHINE DESIGN

57

COLPER, S.W.

1965

MECHANIZATION ON SMALL SCALE FARMS AND OX DRAWN EQUIPMENT.

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME. 9 P.
EI 62473.

NOTES FROM PUBLISHED AND UNPUBLISHED REPORTS OF THE KENYA AGRICULTURAL MACHINERY UNIT, INTENDED TO GUIDE EDUCATORS ON THE SELECTION OF MACHINERY FOR SMALL SCALE FARMERS. PROS AND CONS OF VARIOUS FARM EQUIPMENT ARE GIVEN, INCLUDING SEEDERS, TRACTORS, AND OX DRAWN PLOWS.

DEVELOPING COUNTRIES/FARM EQUIPMENT/COST-BENEFIT ANALYSIS/ANIMAL POWER/KENYA

58

CORNELIUS, J.A./DE, S.S.

1971

TECHNOLOGY OF PRODUCTION OF EDIBLE FLOURS AND PROTEIN PRODUCTS FROM GROUNDNUT.

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME. 95 P.

THIS PUBLICATION IS MEANT FOR INVESTORS OR GOVERNMENT DEPARTMENTS INTERESTED IN SETTING UP FACILITIES FOR PRODUCTION OF PROTEIN FOODS BASED ON GROUNDNUTS. OTHER REPORTS ARE AVAILABLE FOR SOYBEAN AND COTTON SEED. EACH PORTION OF THE GROUNDNUT IS ANALYZED AND ITS COMPOSITION AND UTILITY NOTED. OIL MILLING, PRINCIPLES OF PRODUCTION, PRODUCTION OF PROTEIN PRODUCTS, AND THE INDUSTRIAL PRODUCTION OF EDIBLE FLOUR ARE DISCUSSED. THE ECONOMICS OF THE PROCESS ARE ALSO PRESENTED. SELECTED OPERATING PLANTS ARE ANALYZED. FORMULATION, PACKAGING AND STORAGE ARE ALSO ADDRESSED. AFLATOXIN, THE MAJOR CONTAMINANT IN GROUNDNUT FLOUR IS DISCUSSED SPECIFICALLY.

DEVELOPING COUNTRIES/NUTRITION/GROUNDNUTS/PROTEIN/FOODS/INDUSTRIES

59

CROSS, D.

1975

AQUACULTURE IN RESOURCE DEVELOPMENT.

APPROPRIATE TECHNOLOGY 2(4):26-27.

THE AIM OF MODERN AGRICULTURE IS TO PRODUCE THE HIGHEST POSSIBLE PLANT OR ANIMAL CROP FROM AVAILABLE LAND. WHILE THERE ARE MANY SPECIES OF PLANTS WHICH ARE USED FOR FOOD BY MAN, HE HAS MADE DO WITH AN ASTONISHINGLY SMALL NUMBER OF ANIMALS FOR STAPLE MEATS. IT IS ESSENTIAL TO LOOK AT AQUACULTURE AS A LIVE-STOCK-REARING OPERATION, LIMITED IN ITS PRODUCTIVITY AND PROFITABILITY BY EXACTLY THE SAME FACTORS WHICH AFFECT CONVENTIONAL AGRICULTURE. INTERMEDIATE TECHNOLOGY METHODS ARE HIGHLY APPROPRIATE TO THE WIDESPREAD DEVELOPMENT OF AQUACULTURE IN RURAL ECONOMIES.

DEVELOPING COUNTRIES/AQUACULTURE/FOODS

60

CUENOD, M.A./KAHNE, S. EDS.

1973

IFAC/IFORS CONFERENCE ON SYSTEMS APPROACHES TO DEVELOPING COUNTRIES, ALGIERS, MAY 28-31, PROCEEDINGS.

INSTRUMENT SOCIETY OF AMERICA, PITTSBURGH. 515 P.

PAPERS REGARDING SYSTEMS APPROACHES TO THE SOLUTION OF PROBLEMS IN LDCS ARE PRESENTED. MAJOR CATEGORIES ARE: MANAGEMENT AND DEVELOPMENT POLICIES; AGRICULTURE AND FOODS; POWER, WATER AND POLLUTION CONTROL; TRANSPORTATION, URBAN PLANNING AND COMMUNICATION; GAS, OIL AND CEMENT INDUSTRIES; METHODOLOGY; EDUCATION AND HEALTH; HUMAN RESOURCES; INTERNATIONAL COOPERATION AND DEVELOPMENT.

DEVELOPING COUNTRIES/DECISION MODELS/ALGERIA/AGRICULTURE/INDUSTRIES/WATER/ EDUCATION/TRANSPORTATION/ENERGY/FOODS/NATURAL RESOURCES

61

DALTON, A.J.P.

1973

CHEMICALS FROM BIOLOGICAL RESOURCES.

INTERMEDIATE TECHNOLOGY DEVELOPMENT GROUP, LTD., LONDON. 24 P.

AN ATTEMPT TO STIMULATE THOSE PEOPLE SURROUNDED BY ABUNDANT, AND RENEWABLE NATURAL RESOURCES TO SEE THEM AS RAW CHEMICAL MATERIALS, WHICH BY SIMPLE PROCESSING OFTEN ARE SUITABLE FOR COTTAGE INDUSTRIES. CHEMICALS FROM PLANT, MARINE AND ANIMAL SOURCES ARE DISCUSSED.

DEVELOPING COUNTRIES/MARINE PRODUCTS/NATURAL RESOURCES

62

DALY, H.E.

1974

STEADY-STATE ECONOMICS VS. GROWTHMANIA: A CRITIQUE OF THE ORTHODOX CONCEPTIONS OF GROWTH, WANTS, SCARCITY, AND EFFICIENCY.

POLICY SCIENCES 5(2):149-167.

THE CONCEPT OF GROWTHMANIA IS COMPARED TO THE CHAIN LETTER SWINDLE. LIMITS TO GROWTH ARE ANALYZED. SCARCITY IS DEFINED. THE ALTERNATIVE TO GROWTHMANIA, A STEADY STATE ECONOMY, IS DISCUSSED. TOTAL EFFICIENCY (SERVICE/THROUGHPUT) IS DESCRIBED AS A MORE DESIRABLE FACTOR TO MAXIMIZE THAN GROSS NATIONAL PRODUCT. THE PROBLEMS OF TRANSITION TO A STEADY STATE ARE DISCUSSED. THE ROLE OF DEPLETION QUOTAS FOR CONSERVING NATURAL RESOURCES IS PRESENTED.

POLITICAL ASPECTS/SOCIAL ASPECTS/CONSERVATION/ENERGY/NATURAL RESOURCES/
ECONOMIC ASPECTS

63

DESCHAMPS, I.

1975

CASE HISTORIES OF SUCCESSFUL OPERATIONAL PROGRAMS. CASE 5: MEXICAN INSTITUTE OF TECHNOLOGICAL RESEARCH, MEXICO CITY.

CONFERENCE AND SEMINAR ON TECHNIQUES AND METHODOLOGIES FOR STIMULATING SMALL-SCALE LABOR-INTENSIVE INDUSTRIES IN DEVELOPING COUNTRIES, ATLANTA, GEORGIA, MAY 10-14, SUMMARY OF PROCEEDINGS, 17 P.

A HISTORY OF THE DEVELOPMENT OF THE MEXICAN INSTITUTE OF TECHNOLOGICAL RESEARCH (IMIT) IS PRESENTED, HIGHLIGHTING THE PROBLEMS OF RESISTANCE THAT HAD TO BE OVERCOME. EXPANDING THE SCOPE OF IMIT TO INCLUDE THE SOCIAL AND ECONOMICAL ASPECTS OF TECHNOLOGY IS CITED AS THE MEASURE THAT WAS NECESSARY FOR SUCCESS.

DEVELOPING COUNTRIES/EDUCATION/TECHNOLOGY TRANSFER/ECONOMIC ASPECTS/
ENTREPRENEURSHIP/INDUSTRIES

64

DEVELOPMENT ACADEMY OF THE PHILIPPINES, MANILA

1975

MEASURING THE QUALITY OF LIFE: PHILIPPINE SOCIAL INDICATORS.

SAME AS AUTHDR. 28 P.

DESCRIBES REPRESENTATIVE SOCIAL INDICATORS USED TO MEASURE ECONOMIC TRENDS IN THE PHILIPPINES.

DEVELOPING COUNTRIES/TECHNOLOGY MEASUREMENT/SOCIAL ASPECTS/ECONOMIC ASPECTS

65

DICKENSON, H./WINNINGTON, T.L.

1975

RURAL TECHNOLOGY IN CHINA.

DEVELOPMENT DIGEST 13(4):52-54.

NO ABSTRACT.

CHINA/SOCIAL ASPECTS

66

DOMMEN, A.J.

1975

THE BAMBOO TUBE WELL.

DEVELOPMENT DIGEST 13(4):47-51.

NO ABSTRACT.

BAMBOO/GROUNDWATER/WELLS

67

DONALD, G.

1973

SOCIAL VALUES AND THE GNP.

DEVELOPMENT DIGEST 11(2):120-124.

NO ABSTRACT.

SOCIAL ASPECTS/ECONOMIC ASPECTS

68

DONKIN, D.J.

1975

A SIMPLE, CHEAP AND EFFECTIVE CATTLE BAIL.

APPROPRIATE TECHNOLOGY 2(1):15.

DESCRIBES THE DESIGN, OPERATION, AND CONSTRUCTION OF THE PRATT CATTLE BAIL.

DEVELOPING COUNTRIES/RHODESIA/CATTLE/FARM EQUIPMENT/LIVESTOCK

69

DUFF, B.

1975

CASE HISTORIES OF SUCCESSFUL OPERATIONAL PROGRAMS. CASE 2: INTERNATIONAL RICE RESEARCH INSTITUTE, MANILA, PHILIPPINES.

CONFERENCE AND SEMINAR ON TECHNOLOGIES AND METHODOLOGIES FOR STIMULATING SMALL-SCALE LABOR-INTENSIVE INDUSTRIES IN DEVELOPING COUNTRIES, ATLANTA, GEORGIA, MAY 10-14, SUMMARY OF PROCEEDINGS, 17 P.

THE GENERAL CONCERNS OF THE INTERNATIONAL RICE RESEARCH INSTITUTE (IRRI) ARE PRODUCTION AND POST PRODUCTION ACTIVITIES. THE AGRICULTURAL ENGINEERING DEPARTMENT FOCUSES ON THE DESIGN, PRODUCTION AND MARKETING OF SMALL SCALE AGRICULTURAL MACHINERY. SPECIFIC EQUIPMENT DESIGNED TO-DATE INCLUDE IRRIGATION PUMPS, A SIVONIUS ROTOR WINDMILL, TRACTORS, SEEDERS, COMBINES, THRESHERS, POWER TILLERS, DRYERS, MILLING EQUIPMENT AND FERTILIZERS.

DEVELOPING COUNTRIES/RICE/FARM EQUIPMENT/CROP PRODUCTION/THRESHING/HARVESTING/ TECHNOLOGY TRANSFER/MACHINE DESIGN/FERTILIZERS/WIND POWER/IRRIGATION

70

DUNN, P.D.

1975

THE HUMPHREY PUMP.

APPROPRIATE TECHNOLOGY 2(1):20-21.

THE OPERATION OF THE HUMPHREY PUMP FOR LOW HEAD PUMPING APPLICATIONS IS DESCRIBED. MAINTENANCE CHARACTERISTICS AND APPLICABILITY POTENTIAL FOR DEVELOPING COUNTRIES ARE PRESENTED.

DEVELOPING COUNTRIES/WATER CONVEYANCE/IRRIGATION/MACHINE DESIGN/WATER PUMPING/GROUNDWATER

71

EBRIGHT, J./PELCOVITS, M.

1967

FINAL REPORT: A SIMPLE SOIL PERMEABILITY TESTER. PAPER INCLUDED AS COURSEWORK IN

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MECHANICAL ENGINEERING DEPARTMENT, ENGINEERING PROJECTS DEPARTMENT, COURSE 2.67: DESIGN AND EXPERIMENT. SPRING, 1967.

REPORT DESCRIBES A SIMPLE SOIL TESTER CAPABLE OF MEASURING A WIDE RANGE OF PERMEABILITIES. A DESIGN FOR USE OF UNSKILLED PERSONS IS PRESENTED AND RESULTS OF PERMEABILITY TESTS ON SEVERAL TYPES OF SOIL ARE PROVIDED.

DEVELOPING COUNTRIES/IRRIGATION/TOOLS

72

ECCLI, S. ET AL, EDS.

1974

ALTERNATIVE SOURCES OF ENERGY: PRACTICAL TECHNOLOGY AND PHILOSOPHY FOR A DECENTRALIZED SOCIETY.

SEABURY PRESS, NEW YORK. 277 P.

SEVERAL DECENTRALIZED, SELF SUPPORTING COMMUNITIES ARE DESCRIBED. COMMUNITY ENERGY REQUIREMENTS AND METHODOLOGIES FOR OBTAINING IT ARE PRESENTED. SEPARATE CHAPTERS ON SOLAR, WIND, WATER AND FUEL POWER ARE PRESENTED. OTHER ENERGY SYSTEMS AND PHILOSOPHICAL AND POLITICAL ASPECTS ARE DISCUSSED.

ENERGY/WIND POWER/SOLAR ENERGY/WATER POWER/SOLAR HEATING/ALTERNATIVE FUELS/
POLITICAL ASPECTS/SOCIAL ASPECTS

73

EGGERS, H.

1975

CONSULTANTS IN DEVELOPING COUNTRIES: A CONTRIBUTION TO THE DEBATE.

INTERNATIONAL DEVELOPMENT REVIEW: FOCUS 17(4):3-8.

THREE SCENARIOS ARE OFFERED FOR THE INTERACTION OF GOVERNMENT, CONSULTANTS AND AID DONORS. THE EUROPEAN DEVELOPMENT FUND'S (EDF) PROCEDURES ARE EXAMINED. THE KEY POINTS OF EDF'S DEVELOPMENT PLAN ARE DEFINING PROJECT CRITERIA, RESPONSIBILITIES, AND TRAINING. THE INFLUENCE OF SOCIO-POLITICAL PRESSURES ON THE LONGEVITY OF A CONSULTANT'S WORK IS DISCUSSED.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/CONSULTING

74

EMERY, K.O.

1975

OIL AND GAS RESOURCES.

SCIENCE 188(4192):973.

NO ABSTRACT.

NATURAL RESOURCES

75

ENKE, S.

1969

COST-BENEFIT ANALYSIS OF BIRTH CONTROL IN LESS DEVELOPED COUNTRIES. IN INTERNATIONAL CONFERENCE ON OPERATIONAL RESEARCH, 5TH, VENICE, JUNE 22-27, PROCEEDINGS, P. 741-750.

TAVISTOCK PUBLICATIONS, LONDON.

THE MODEL PRESENTED HAS TWO INTERACTING PORTIONS, DEMOGRAPHIC AND ECONOMIC. THE CRUX OF THE ECONOMIC MODEL IS A COBBS-DOUGLAS TYPE AGGREGATE (NATIONAL) PRODUCTION FUNCTION THAT RELATES CAPITAL, LABOR AND TECHNOLOGY TO OUTPUT. IT IS SHOWN THAT A SLOWING RATE OF POPULATION INCREASE IS DESIRABLE. RESULTS OF THE MODEL AT FIVE YEAR INTERVALS ARE PRESENTED. RESOURCES INVESTED IN BIRTH CONTROL CAN BE 100 TIMES MORE EFFECTIVE THAN INCREASING GNP OR OTHER TRADITIONAL INVESTMENTS.

DEVELOPING COUNTRIES/DECISION MODELS/COST-BENEFIT ANALYSIS/POPULATION CONTROL

76

EREZ, A.

1975

NOTE FROM THE FIELD: ADVISOR SITUATION AND THE LDC BRAIN DRAIN.

INTERNATIONAL DEVELOPMENT REVIEW: FOCUS 17(4):26:27.

PHENOMENON OF LDC BRAIN DRAINAGE IS DISCUSSED. SOLUTIONS MAY BE FOUND IN SHIFTING GOVERNMENT SERVICES TO THE PRIVATE OR SEMI-PRIVATE SECTOR AND ESTABLISHING LOCAL BRAIN TRUSTS (CONSULTING CENTERS).

DEVELOPING COUNTRIES/CONSULTING/LABOR MIGRATION

77

ESMAY, M./GAISER, D.

1975

SELECTED AGRICULTURAL MECHANIZATION FOR LOCAL MANUFACTURE. PAPER PRESENTED AT

ANNUAL MEETING OF THE AMERICAN SOCIETY OF ENVIRONMENTAL ENGINEERS, FT. COLLINS, COLORADO, JUNE 19, 1975, 16 P.

DEVELOPING COUNTRIES CANNOT ATTEMPT TO IMPLEMENT LONG TERM AGRICULTURAL MECHANIZATION PROGRAMS BASED SOLELY ON IMPORT OF CAPITAL INTENSIVE EQUIPMENT. WHEN NECESSARY, POLICY SHOULD BE ESTABLISHED THAT WILL ALLOW THE SMALL MANUFACTURER TO COMPETE WITH THE MODERN TECHNOLOGY SECTOR. THREE CASE STUDIES ARE DISCUSSED.

DEVELOPING COUNTRIES/FARM EQUIPMENT/ENTREPRENEURSHIP/LABOR/ECONOMIC ASPECTS

78

ETEIGER, J.T.

1975

BUILDING METHODS FOR POPULAR HOUSING.

VAIKUNTHBHA) MEHTA SMARAK TRUST, BOMBAY, INDIA, DOCUMENTATION BULLETIN 20:9-13.

SEVERAL BUILDING MATERIALS FOR LOW COST HOUSING ARE DISCUSSED, INCLUDING 100 PERCENT CLAY (CEILING BEAMS); CONCRETE PREFAB; LIGHT WEIGHT FOAM BRICK; AND CALIBRATED BRICK.

DEVELOPING COUNTRIES/CONSTRUCTION MATERIALS/CONSTRUCTION METHODS/BRICKS

79

FATHY, H.

1973

ARCHITECTURE FOR THE POOR.

UNIVERSITY OF CHICAGO PRESS. 233 P.

THE AUTHOR EXAMINES THE ARCHITECTURE IN LESS DEVELOPED COUNTRIES IN TERMS OF THE NORMS OF THESE COUNTRIES, WITH THE CONVICTION THAT EVEN POOR PEOPLE SHOULD NOT HAVE TO PAY MORE THAN A FEW YEARS WAGES FOR DECENT HOUSING. ESSENTIALLY HE HAS APPLIED MODERN KNOWLEDGE AND SKILLS TO TRADITIONAL BUILDING MATERIAL.

CONSTRUCTION/BUILDING DESIGN/DEVELOPING COUNTRIES/CONSTRUCTION MATERIALS

80

FERNANDO, D.

1975

LOW COST TUBE WELLS.

APPROPRIATE TECHNOLOGY 2(4):5-7.

THE BENEFITS AND CAPACITY OF TUBE WELLS ARE DISCUSSED. THE METHOD OF MANUALLY BORING THE HOLES WITH DESCRIPTION OF THE CORRECT TOOLS IS PRESENTED. THE COST OF THE DRILLING OPERATION AND MATERIALS FOR DIFFERENT TYPES OF TUBE SLEEVES ARE DISCUSSED. THE USE OF A CENTRALIZED TUBE WELL CONSTRUCTION PROGRAM IS DISCOURAGED AS IT DOUBLES THE COST.

DEVELOPING COUNTRIES/ETHIOPIA/GROUNDWATER/CONSTRUCTION MATERIALS/ANIMAL POWER/CONSTRUCTION METHODS

81

FIRTH, R.

1939

PRIMITIVE POLYNESIAN ECONOMY.

GEORGE ROUTLEDGE AND SONS, LTD., LONDON. 387 P.

DEFINES PRIMITIVE ECONOMICS AND DISCUSSES THE INFLUENCE OF CULTURAL ASPECTS ON RATIONAL DECISION PROCESSES. THE NATURE OF MODERN ANTHROPOLOGICAL STUDY IS DISCUSSED. DEVELOPMENT OF THE TIKOPIA ECONOMY IS TRACED INCLUDING DISCUSSIONS ON POPULATION CONTROL THROUGH CONTRACEPTION AND INFANTICIDE, AGRICULTURAL PROSPECTS WITH ASSOCIATED RELIGIOUS RITES, AND TECHNOLOGICAL STATE. THE LACK OF TECHNOLOGICAL AMBITION IS DISCUSSED. THE KNOWLEDGE TRANSFER PROCESS, DIVISION OF LABOR AND SOCIAL STRUCTURES ARE PRESENTED.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/EDUCATION/LABOR/POPULATION CONTROL/SOCIAL ASPECTS/ECONOMIC ASPECTS

82

FISCHER, J.L.

1973

LETTER TO MR. ORHAM UGOK, MEMBER OF THE EXECUTIVE COMMITTEE, SUGAR CORPORATION, ANKARA, TURKEY, FEBRUARY 26, 1973.

PERSONAL CORRESPONDENCE. (UNPUBLISHED)

ADVICE ON THE PURCHASE OF A SMALL TRACTOR FOR THE ARID ENVIRONMENT IN TURKEY. THE IMPORTANT REQUIREMENTS OF SUCH A TRACTOR ARE PRESENTED.

FARM EQUIPMENT/DEVELOPING COUNTRIES/AGRICULTURE/COST-BENEFIT ANALYSIS/SOCIAL ASPECTS/TURKEY/MACHINE DESIGN

83

FISK, E.K.

1961

THE CASE FOR THE SELECTIVE MECHANIZATION OF AGRICULTURAL SMALL HOLDINGS IN UNDERDEVELOPED AREAS.

MALAYAN ECONOMIC REVIEW 4(2):53-60.

NO ABSTRACT.

DEVELOPING COUNTRIES/FARM EQUIPMENT/SOCIAL ASPECTS/AGRICULTURE/TECHNOLOGY TRANSFER

84

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME

1962

SPARE-TIME PRODUCTION FOR GAIN.

SAME AS AUTHDR. 40 P.

THIS BROCHURE EXPLAINS IN SIMPLE TERMS THE PRACTICAL STEPS WHICH MAY BE TAKEN TO BRING PEOPLE TOGETHER IN LOCAL GROUPS SO THAT THEY MAY PRODUCE GOODS AND PROVIDE SERVICES FOR ONE ANOTHER IN THEIR SPARE TIME.

DEVELOPING COUNTRIES/ENTREPRENEURSHIP/ECONOMIC ASPECTS

85

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME

1970

BETTER FARMING SERIES.

SAME AS AUTHDR. VARIDUS PAGINGS.

THIS SERIES OF SMALL HANDBOOKS IS INTENDED FOR INTERMEDIATE LEVEL AGRICULTURAL EDUCATION AND TRAINING. SERIES INCLUDES HANDBOOKS ON STEMS, ROOTS, LEAVES, FLOWERS, SOIL PHYSICAL PROPERTIES, SOIL MANAGEMENT, SOIL IMPROVEMENT AND CULTIVATION.

DEVELOPING COUNTRIES/EDUCATION/AGRICULTURE/SOIL TYPES

86

FRAENKEL, P.

1975

FOOD FROM THE WIND.

APPROPRIATE TECHNOLOGY 2(4):8-10.

THE AMERICAN PRESBYTERIAN MISSION'S FOOD FROM WIND PROJECT TO IRRIGATE THE LAND OF THE GELEB FROM A LARGE RIVER DURING 6 MONTHS OF NO RAIN EACH YEAR IS DISCUSSED. THE CRETAN SAIL WIND WHEEL DESIGN WAS MODIFIED FOR USE, AND THE OPTIMUM SAIL SIZE AND PUMP ACTION ARE DISCUSSED.

DEVELOPING COUNTRIES/ETHIOPIA/WIND POWER/IRRIGATION

87

FRANK, A.G.

1967

CAPITALISM AND UNDERDEVELOPMENT IN LATIN AMERICA.

MONTHLY REVIEW PRESS, NEW YORK. 298 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/SOCIAL ASPECTS

88

FRITS, J.

1976

RESULTS OF MOTIVATIONAL TRAINING IN ECUADOR.

DEVELOPMENT DIGEST 14(1):81-86.

NO ABSTRACT.

DEVELOPING COUNTRIES/ECUADOR/EDUCATION

89

FRY, J.L.

1974

PRACTICAL BUILDING OF METHANE POWER PLANTS FOR RURAL ENERGY INDEPENDENCE.

D.A. KNOX, ANDOVER, ENGLAND. 96 P.

AN IN DEPTH ANALYSIS OF FERTILIZER AND METHANE GAS PRODUCTION FROM ANAEROBIC DIGESTORS.

DEVELOPING COUNTRIES/ANAEROBIC DIGESTORS/EXCREMENT

90

FULFORD, D.

1975

LETTER TO APPROPRIATE TECHNOLOGY.

APPROPRIATE TECHNOLOGY 2(1):19.

DISCUSSES THE BENEFIT OF USING INTERMEDIATE TECHNOLOGICAL IDEAS BY SHORT-TERM VOLUNTEERS (HOW AND WHY).

DEVELOPING COUNTRIES/SOCIAL ASPECTS/TECHNOLOGY TRANSFER

91

GANDHI, M.K.

1948

CENT PER CENT SWADESHI.

NAVAJIVAN PUBLISHING HOUSE, AHMEDABAD, INDIA. 146 P.

GANDHI EXPLAINS WHAT SWADESHI IS AND QUESTION AND ANSWER SESSIONS REGARDING THIS TOPIC ARE PRESENTED. BASICALLY SWADESHI IS A STRIVING TO IDENTIFY ONE'S SELF WITH ALL CREATION AND MANIFESTS ITSELF IN VILLAGE INDUSTRIES (MAKING GOODS FOR ONE'S OWN CONSUMPTION). SWADESHI REJECTS THE USE OF GOODS MADE BY HIGHLY INDUSTRIALIZED PROCESSES. THE OBJECTIVE IS TO REPLACE POPULATION IDLENESS WITH CONSTRUCTIVE WORK AND TO IMPROVE NUTRITION. CLOTHING, MILLING AND TANNING INDUSTRIES ARE DISCUSSED.

DEVELOPING COUNTRIES/INDIA/SOCIAL ASPECTS/LABOR/CLOTHING/MILLING/LEATHER

92

GEARING, C.F./SWART, W.W./TURGUT, U.

1973

DETERMINING THE OPTIMAL INVESTMENT POLICY FOR THE TOURISM SECTOR OF A DEVELOPING COUNTRY.

MANAGEMENT SCIENCE 20(4):487-497.

FOR DEVELOPING COUNTRIES TRYING TO INCREASE THEIR BUYING POWER IN THE COMMUNITY OF NATIONS, THE ESTABLISHMENT OF A TOURISM INDUSTRY IS AN IMPORTANT STRATEGY FOR THE GENERATION OF FOREIGN EXCHANGE EARNINGS. A DECISION STRUCTURE WHEREBY INVESTMENT ALLOCATION DECISIONS FOR TOURISTIC PROJECTS CAN BE MADE IS PRESENTED. THE DECISION STRUCTURE CONSISTS OF A PROCEDURE TO QUANTIFY THE CONCEPTS OF TOURISTIC ATTRACTIVENESS, A MATHEMATICAL MODEL REPRESENTING THE ALLOCATION PROBLEM AND AN ALGORITHM FOR THE PROBLEM'S SOLUTION.

DEVELOPING COUNTRIES/TURKEY/TOURISM/DECISION MODELS/ECONOMIC ASPECTS

93

GEORGIA INSTITUTE OF TECHNOLOGY, ATLANTA, ECONOMIC DEVELOPMENT LABORATORY,
ENGINEERING EXPERIMENT STATION

1975

DISCUSSION PAPERS ON THE PROBLEMS OF SCIENCE AND TECHNOLOGY.

ANNUAL STRATEGY AND PLANNING SYMPOSIUM AGENCY FOR INTERNATIONAL DEVELOPMENT,
OFFICE OF SCIENCE AND TECHNOLOGY, ATLANTA, GEORGIA, MAY 6-9, 1975, 129 P.

REPORTS ON THE CONSENSUS OF THE WORKING GROUPS ON EDUCATION, EMPLOYMENT,
HOUSING, RURAL DEVELOPMENT, ENVIRONMENTAL CONCERNS, ENERGY AND FOOD ARE
PRESENTED.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/EDUCATION/LABOR/FOODS/ENERGY

94

GEORGIA INSTITUTE OF TECHNOLOGY, ATLANTA, INDUSTRIAL DEVELOPMENT DIVISION,
ENGINEERING EXPERIMENT STATION

1975

PROCEEDINGS OF THE CONFERENCE AND SEMINAR ON TECHNIQUES AND METHODOLOGIES
FOR STIMULATING SMALL-SCALE LABOR-INTENSIVE INDUSTRY IN DEVELOPING COUNTRIES,
ATLANTA, GEORGIA, MARCH 10-14.

SAME AS AUTHOR. 314 P.

TEXT IS COMPRISED OF PARTICIPANT ADDRESSES, PAPERS AND REPORTS PRESENTED AT
THE MEETING AS WELL AS DISCUSSION SESSIONS. CONFERENCE AND SEMINAR PROGRAMS
AND PHOTOGRAPHS ARE INCLUDED.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/CONSULTING/ENTREPRENEURSHIP/
AGRICULTURE

95

GHASWALA, S.K.

1975

CATTLE DUNG OFFERS ENERGY RELIEF FOR RURAL INDIA.

ENERGY INTERNATIONAL 12(4):25.

THE AUTHOR PRESENTS A BRIEF DISCUSSION ON THE DEVELOPMENT OF A GOBAR GAS PLANT
AND DISCUSSES THE CURRENT WIDESPREAD USE OF THIS FOR LP GAS PRODUCTION IN
INDIA. THE RELATIVE THERMAL EFFICIENCY OF GOBAR GAS VS OTHER FUELS IS
PRESENTED. RETURN IN GAS AND FERTILIZER PER GIVEN POPULATION DENSITY IS
PREDICTED.

DEVELOPING COUNTRIES/ANAEROBIC DIGESTORS/INDIA/EXCREMENT

96

GIBBON, D./HARVEY, J./HUBBARD, K.

1974

A MINIMUM TILLAGE SYSTEM FOR BOTSWANA.

WORLD CROPS 26(5):229-234.

CONSIDERABLE IMPROVEMENT IN AGRICULTURAL PRODUCTIVITY CAN BE MADE IF
TECHNIQUES ARE ADOPTED THAT 1) IMPROVE SOIL STRUCTURE, 2) REDUCE BULK DENSITY,
3) CONTROL WEEDS, 4) REDUCE RUNOFF, AND 5) INCREASE INFILTRATION AND REDUCE
MOISTURE LOSS. A TILLAGE SYSTEM FOR BOTSWANA, A SUBTROPICAL REGION, IS
DEVELOPED AROUND THE VERSATOOL, AN ANIMAL DRAWN TOOL. THE VARIOUS
CONFIGURATIONS OF THE VERSATOOL ARE DESCRIBED WITH PICTURES AND TEXT.
FERTILIZATION TECHNIQUES AND ROTATION CROPS ARE DESCRIBED. OTHER ASPECTS OF
CROP PRODUCTION ARE DISCUSSED.

DEVELOPING COUNTRIES/BOTSWANA/FARM EQUIPMENT/ANIMAL POWER/CROP PRODUCTION/
RUNOFF

97

GILES, G.W.

1975

THE REORIENTATION OF AGRICULTURAL MECHANIZATION FOR THE DEVELOPING COUNTRIES.
PART I: POLICIES ATTITUDES FOR ACTION PROGRAMS.

AGRICULTURAL MECHANIZATION IN ASIA, (AUTUMN). JOURNAL AVAILABLE FROM FARM MACHINERY INDUSTRIAL CORP. LTD., 7,2-CHROME KANDA, NISHIKI-CHO, CHIYODA-KU, TOKYO 101, JAPAN.

NO ABSTRACT.

DEVELOPING COUNTRIES/AGRICULTURE/FARM EQUIPMENT

98

GLASER, W.A.

1975

MAKING BETTER USE OF TECHNICAL ASSISTANCE EXPERTS.

INTERNATIONAL DEVELOPMENT REVIEW: FOCUS 17(4):21-25.

RECURRENT VISITS BY SHORT TERM REGIONAL EXPERTS MAY BE A SENSIBLE ALTERNATIVE TO THE PREVAILING SYSTEM OF FULL-TIME, LONG-TERM EXPERTS ASSIGNED TO ONE PLACE. THIS PAPER TAKES UP TWO DISTINCT ISSUES: 1) THE IMPROVEMENT WHICH CAREER BENEFITS AND PROFESSIONAL AWARDS WOULD BRING TO THE PRESENT EXPERT-COUNTERPART SYSTEM, AND 2) POSSIBLE ALTERNATIVES TO THAT SYSTEM.

DEVELOPING COUNTRIES/CONSULTING

99

GOODMAN, L./BURIAN, F.

1975

A COOPERATIVE PROBLEM-SOLVING APPROACH TO LOW-COST HOUSING TECHNOLOGY.

TECHNOS 4(2):33-35.

LOW-COST HOUSING FOR LOW-INCOME FAMILIES CLEARLY REPRESENTS A HIGH PRIORITY PROGRAM URGENTLY NEEDED IN ALL COUNTRIES IN THE WORLD. THE BASIC INTENT OF THIS PAPER IS TO SUMMARIZE THE MANY INTERRELATED PROBLEMS AND ISSUES, STRESSING THE NEED FOR MULTI-NATIONAL AND MULTI-DISCIPLINARY RESEARCH AND DEVELOPMENT ON A COOPERATIVE AND COORDINATED BASIS. AN EMERGING PROGRAM IN THIS FIELD CATALYZED AND COORDINATED BY THE EAST-WEST CENTER'S TECHNOLOGY AND DEVELOPMENT INSTITUTE IS DISCUSSED. EXAMPLES OF LOW-COST HOUSING IN FIVE COUNTRIES ARE PRESENTED, ALONG WITH PICTORIAL DOCUMENTATION.

HAWAII/BUILDING DESIGN/CONSTRUCTION METHODS/CONSTRUCTION MATERIALS

100

GROSS, B.

1974

DESTRUCTIVE DECISION MAKING IN DEVELOPING COUNTRIES.

POLICY SCIENCES 5(2):213-236.

IN MOST DEVELOPING COUNTRIES STRATEGIC DECISION MAKING HAS BEEN MADE LARGELY ON FALSE PREMISES THAT HAVE LEAD TO DESTRUCTIVE RESULTS. MORE SUCCESSFUL DEVELOPMENT REQUIRES REDISTRIBUTION AND NONMATERIAL GROWTH, A SLOWING DOWN OF MATERIAL CONSUMPTION (IN DEVELOPED COUNTRIES), LARGE SCALE EMPLOYMENT PROJECTS AND THE FOSTERING OF MORE PRODUCTIVE TECHNOLOGIES.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/NATURAL RESOURCES/CONSERVATION/ECONOMIC ASPECTS

101

GUGGENHEIM, H.

N.D.

FIGHTING THE DROUGHT: INTRODUCING AN INVISIBLE TECHNOLOGY INTO THE DOGON ENVIRONMENT.

WUNDERMAN FOUNDATION, NEW YORK. 21 P.

A PROPOSAL FOR A PILOT PROJECT TO AID THE DOGON VILLAGERS OF THE BANDIAGARA CLIFFS IN MALI TO CONVERT TRADITIONAL, CLAY-BUILT GRANARIES INTO WATERPROOF CISTERNS BY LINING THEM WITH A THIN COAT OF FERROCEMENT.

DEVELOPING COUNTRIES/MALI/WATER STORAGE/CATCHMENTS/CEMENT

102

GUGGENHEIM, H.

1974

FIGHTING THE DROUGHT WITH INVISIBLE TECHNOLOGY.

WUNDERMAN FOUNDATION, NEW YORK. 65 P.

THE AUTHOR'S STUDY OF WATER SUPPLIES FOR RURAL COMMUNITIES IN MALI, 1974, IS DESCRIBED. REQUIREMENTS FOR SUCCESSFUL TECHNOLOGY TRANSFER ARE DISCUSSED. FOR THE DOGON, A RESERVOIR MADE FROM A CAVE WAS DEVELOPED TO STORE RAIN WATER. IN THIS AREA THE GROUNDWATER IS CONTAMINATED. AT NARA AND DILLY PURIFICATION OF AVAILABLE GROUNDWATER WAS THE MOST REASONABLE PLAN. THE RECENT DEVELOPMENT OF A PORTABLE WATER PURIFICATION UNIT MADE THE LATTER PROJECT ECONOMICALLY FEASIBLE.

DEVELOPING COUNTRIES/MALI/GROUNDWATER/WATER STORAGE/TECHNOLOGY TRANSFER/WATER PUMPING

103

GUGGENHEIM, H.

1975

A SHARED TECHNOLOGY FOR DEVELOPMENT.

WUNDERMAN FOUNDATION, NEW YORK. 138 P.

THE AUTHOR'S STUDY ON WATER SUPPLIES FOR RURAL COMMUNITIES IN MALI, 1975, IS DISCUSSED. AT ARON A SMALL RESERVOIR WAS NEEDED AND AT KIKINU, COMPLETION OF A VILLAGE PROJECT TO CONVERT A NATURAL BASIN TO A RESERVOIR WAS REQUIRED. A COMPLETE LIFE STYLE ANALYSIS IS PRESENTED FOR THE KIKINU PEOPLE. DEVELOPMENT OF THE DOGON AREA IS PRESENTED. THE AUTHOR DISCUSSES THE WATER SUPPLY PROBLEMS OF THE DOGON AREA.

DEVELOPING COUNTRIES/GROUNDWATER/MALI/WATER STORAGE/TECHNOLOGY TRANSFER/WATER PUMPING

104

GUNKEL, W.W.

1968

IMPLEMENTATION AND OVER-MECHANIZATION IN DEVELOPING COUNTRIES.

AMERICAN SOCIETY OF AGRICULTURAL ENGINEERS, TECHNICAL PAPER 66-508. 18 P.

DEVELOPING COUNTRIES/FARM EQUIPMENT/SOCIAL ASPECTS/AGRICULTURE

105

HAMMOND, R.W.

1975

CASE HISTORIES OF SUCCESSFUL OPERATIONAL PROGRAMS: CASE 4. CONFERENCE AND SEMINAR ON TECHNIQUES AND METHODOLOGIES FOR STIMULATING SMALL-SCALE LABOR-INTENSIVE INDUSTRIES IN DEVELOPING COUNTRIES, ATLANTA, GEORGIA, MAY 10-14, SUMMARY OF PROCEEDINGS, 17 P.

GEORGIA INSTITUTE OF TECHNOLOGY, ATLANTA, ENGINEERING EXPERIMENT STATION, INDUSTRIAL DEVELOPMENT DIVISION.

THE MAIN EMPHASIS OF THE DIVISION IS EMPLOYMENT GENERATION, STRENGTHENING EXISTING INDUSTRIES, AND CREATING NEW ONES IN BOTH SOUTHEASTERN UNITED STATES AND INTERNATIONALLY. KEY ASPECTS OF SUCCESSFUL PROGRAMS ARE DISCUSSED. SOME SPECIFIC SUCCESSFUL TECHNIQUES HAVE BEEN COMMUNITY PROFILES, CERTIFIED CITY AND INDUSTRIAL DISTRICT PROGRAMS, PUBLICATION OF DIRECTORIES, FEASIBILITY STUDIES, AND TRAINING PROGRAMS.

DEVELOPING COUNTRIES/INDUSTRIES/MACHINE DESIGN/TOOLS/CONSULTING/TECHNOLOGY TRANSFER/ENTREPRENEURSHIP

106

HARPER, M.H.

1974

A PROTOTYPE EXPERIMENT TO TEST THE POSSIBILITY OF A COST EFFECTIVE EXTENSION SERVICE FOR SMALL SCALE GENERAL RETAILERS.

UNIVERSITY OF NAIROBI, KENYA, INSTITUTE FOR DEVELOPMENT STUDIES, DISCUSSION PAPER 193. 23 P.

TO DEVELOP AN INEXPENSIVE AND EFFECTIVE SMALL BUSINESS EXTENSION SERVICE, A CAREFUL ANALYSIS MUST BE MADE OF THE NEEDS OF THE CLIENT POPULATION. THE AUTHOR HYPOTHESIZES THAT IT IS POSSIBLE FOR RELATIVELY UNQUALIFIED AND INEXPERIENCED STAFF TO PROVIDE EFFECTIVE EXTENSION SERVICE. ENCOURAGING TEST RESULTS HAVE BEEN OBTAINED IN NAIROBI, PROBLEMS REFLECTED IN PROFIT-LOSS BALANCE SHEETS HAVE CONSISTENTLY SIMILAR SOLUTIONS. THESE SOLUTIONS THEN COMPRISE THE TRAINING OF THE EXTENSION STAFF. THE SUCCESS OF EXTENSION WORKERS WAS MEASURED BY THE WILLINGNESS OF THE CUSTOMERS TO PAY FOR SERVICES (66 PERCENT). PROBLEMS OF MEASURING ALL ASPECTS OF THE PROGRAM ARE DISCUSSED.

DEVELOPING COUNTRIES/KENYA/CONSULTING/TECHNOLOGY TRANSFER/BUSINESS MANAGEMENT/ EDUCATION/SOCIAL ASPECTS

107

HARPER, M.H.

1975

APPROPRIATE CONSULTANCY FOR SMALL BUSINESS.

APPROPRIATE TECHNOLOGY 2(1):22-23.

PRESENTS THE PROBLEMS OF DISSEMINATING INFORMATION ABOUT APPROPRIATE TECHNOLOGIES TO SMALL BUSINESSMEN. PROBLEMS OF FINDING AND AFFORDING QUALIFIED CONSULTANTS ARE DISCUSSED. AN ALTERNATIVE OF TRAINING LOCALS AS CONSULTANTS IS PRESENTED.

DEVELOPING COUNTRIES/BUSINESS MANAGEMENT/EDUCATION/KENYA/INDUSTRIES/CONSULTING

108

HAPPER, M.H.

1975

THE EMPLOYMENT OF FINANCE IN SMALL BUSINESS.

JOURNAL OF DEVELOPMENT STUDIES 11(4):366-375.

DISCUSSES THE PERILS OF CONSULTANTS ACCEPTING A BUSINESSMAN'S SELF DIAGNOSIS IN ISOLATING BUSINESS PROBLEMS. PROBLEMS OF SMALL BUSINESS PROMOTION AGENCIES THAT STARTED AS LOAN AGENCIES ARE PRESENTED. THE AUTHOR FEELS THAT ASSISTANCE AND LOAN ACTIVITIES MUST BE SEPARATED. OVERSTOCKING IS PRESENTED AS THE MOST FREQUENT SMALL BUSINESS PROBLEM IN KENYA. SOME METHODS OF REDUCING STOCK ARE MENTIONED. NEED FOR SPECIAL TECHNOLOGY DELIVERY SYSTEMS IS DISCUSSED.

DEVELOPING COUNTRIES/KENYA/ENTREPRENEURSHIP/BUSINESS MANAGEMENT/CONSULTING/TECHNOLOGY TRANSFER/SOCIAL ASPECTS

109

HARRID, J.R./TODARO, M.P.

1970

MIGRATION, UNEMPLOYMENT AND DEVELOPMENT: A TWO SECTOR APPROACH.

AMERICAN ECONOMIC REVIEW 60(3):61-89.

NO ABSTRACT.

DEVELOPING COUNTRIES/ECONOMIC ASPECTS/LABOR MIGRATION/SOCIAL ASPECTS

110

HARRISON, P.L.

1975

EDUCATIONAL EQUIPMENT.

APPROPRIATE TECHNOLOGY 2(3):14-15.

DISCUSSES IMPORTANCE OF TECHNICAL TRAINING FOR UNIVERSITY ENGINEERING STUDENTS AND ALSO OF MINI COURSES FOR TECHNICIANS. UPGRADING THE TECHNICAL SENSE OF WORKERS IS IMPORTANT BEFORE ANY LARGE ADVANCES IN INDUSTRIALIZATION CAN BE MADE.

DEVELOPING COUNTRIES/EDUCATION/INDUSTRIES/TECHNOLOGY TRANSFER

111

HEARN, K./WILLIAMS, R.

1967

FINAL REPORT: MAXIMUM HUMAN WORK OUTPUT THROUGH OPTIMUM POWER DEMAND. PAPER INCLUDED AS COURSEWORK IN

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MECHANICAL ENGINEERING DEPARTMENT, ENGINEERING PROJECTS LABORATORY, COURSE 2.67: DESIGN AND EXPERIMENT. SPRING, 1967.

USING A BICYCLE FOOT PEDAL DEVICE, THE AUTHORS FOUND THAT PEOPLE DO THEIR BEST WORK AT CERTAIN POWER OUTPUT LEVELS.

ENERGY/DEVELOPING COUNTRIES

112

HENSON, L.S. ED.

1974

SEMINAR SERIES ON TECHNOLOGY AND DEVELOPMENT, VOLS. I AND II.

HOWARD UNIVERSITY, WASHINGTON, D.C., SCHOOL OF ENGINEERING/U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT, WASHINGTON, D.C. 84 P.; 84 P.

THIS REPORT CONTAINS LECTURES PRESENTED DURING THE SECOND HALF OF A TWO PART SERIES OF 'SEMINARS ON TECHNOLOGY AND DEVELOPMENT IN DEVELOPING COUNTRIES'. THE PURPOSE OF THE SEMINARS WAS TO EXAMINE THE PROCESS OF DEVELOPMENT, THE ROLE OF TECHNICAL ASSISTANCE, AND THE APPLICATION OF TECHNOLOGY TO THE NEEDS OF DEVELOPING COUNTRIES, THEREBY GENERATING GREATER INTEREST IN DEVELOPMENT PROBLEMS ON THE PART OF SCHOOL OF ENGINEERING FACULTY AND STUDENTS.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/TECHNOLOGY TRANSFER

113

HERMANN, W.D.

1975

SOCIAL ENGINEERING IN THE THIRD WORLD.

TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE 7(3):229-232.

SUCCESS IN ECONOMIC DEVELOPMENT IS NORMALLY MEASURED IN TERMS OF GROWTH RATES IN GNP WITH LITTLE ATTENTION GIVEN TO THE ACCOMPANYING INCREASE IN EMPLOYMENT. GROWTH CAN BE LABOR ABSORBING DEPENDING ON THE TECHNOLOGY INTRODUCED DURING INDUSTRIALIZATION.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/LABOR

114

HERNANDEZ-DIAS, P.

1975

THE COOPERATIVE THAT BAMBOO BUILT.

SMALL INDUSTRY JOURNAL 8(1):11-14.

THE GROWTH OF THE MUNOZ ACADEMIC AND TECHNICAL INSTITUTE'S INDUSTRIAL COOPERATIVE IS PRESENTED. THE DEVELOPMENT OF THE REQUISITE MANAGERIAL TRAITS IN THE BOARD OF DIRECTORS IS PRESENTED. THE COOPERATIVE IS ENGAGED IN MAKING AND MARKETING BAMBOO PRODUCTS. THE ROLE OF OUTSIDE CONSULTING AND FINANCIAL AID IS DISCUSSED.

DEVELOPING COUNTRIES/COOPERATIVES/BAMBOO/CONSULTING/EDUCATION

115

HITCHINGS, B.

1974

WIND WORKSHOP.

ALTERNATIVE SOURCES OF ENERGY 14:7-9.

WIND POWER

116

HODA, M.M.

1974

APPROPRIATE TECHNOLOGY AND RESEARCH PROJECTS.

GHANDIAN INSTITUTE OF STUDIES, RAJGHAT, VARANASI, INDIA, APPROPRIATE TECHNOLOGY DEVELOPMENT UNIT. 66 P.

THE DEVELOPMENT OF INDIA BASED ENTIRELY ON WESTERN, CAPITAL INTENSIVE TECHNOLOGY CREATED ISLANDS OF PROSPERITY IN AN OCEAN OF POVERTY. THE AUTHOR DEALS WITH THE QUESTION OF HOW STUDENT PROJECTS AT ALL LEVELS COULD BE USED TO SOLVE THE TECHNOLOGICAL PROBLEMS CONFRONTING POOR AND WEAKER SECTIONS. FACTORS INFLUENCING RURAL-URBAN LABOR MIGRATION ARE DISCUSSED. THE AUTHOR PRESENTS AN EARLY HISTORY OF RURAL DEVELOPMENT IN INDIA. THE ROLE OF GHANDHI AND WORK INSTITUTIONS IN PRESERVING THE RURAL COMMUNITY IS DISCUSSED. TO SUPPORT THE INTERMEDIATE NEEDS OF INDIA THE APPROPRIATE TECHNOLOGY DEVELOPMENT UNIT AT VARANASI HAS BEEN ESTABLISHED. THE CONCEPT OF BALANCED DEVELOPMENT IS ADDRESSED. APPROPRIATE TECHNOLOGIES ARE DEFINED. PROJECTS DISCUSSED INCLUDE SHOE MAKING, PAPER PULP PROCESSING, BREAD BAKING, CERAMIC TILE PRODUCTION, WATER STORAGE, HOSPITAL INSTRUMENT WORKSHOPS AND ANAEROBIC DIGESTORS. A PROBLEM SOLVING METHODOLOGY IS PROPOSED. THE QUESTION OF WHAT A PROJECT SHOULD DO IS DISCUSSED. A LISTING OF PROJECT DESIGN CONSTRAINTS AND PROJECT TOPICS IS PRESENTED.

DEVELOPING COUNTRIES/INDIA/LABOR MIGRATION/ECONOMIC ASPECTS/CONSULTING/ENTREPRENEURSHIP/SHOES/WATER STORAGE/PAPER/FOODS/TOOLS

117

HOMMEL, R.P.

1937

CHINA AT WORK.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY PRESS, CAMBRIDGE. 366 P.

THE AUTHOR LIVED IN CHINA FOR EIGHT YEARS AND COMPILED THIS ILLUSTRATED RECORD OF THE PRIMITIVE INDUSTRIES OF CHINA'S MASSES. PICTURES OF TOOLS AND PROCESSES WITH DESCRIPTIONS COMPRISE THIS VOLUME. THE AUTHOR DESCRIBES PRIMARY TOOLS FOR PRODUCING 1) TOOLS, 2) FOOD, 3) CLOTHING, 4) SHELTER, AND 5) TRANSPORT.

DEVELOPING COUNTRIES/TOOLS/MACHINE DESIGN/FARM EQUIPMENT/ANIMAL POWER

118

HOUSE, P.W.

1974

THE CARRYING CAPACITY OF A REGION: A PLANNING MODEL.

OMEGA 2(5):667-676.

WHILE TRADITIONAL PLANNING OFTEN ASSURES UNLIMITED GROWTH POTENTIAL, IN REALITY SUCH GROWTH HAS ABSOLUTE LIMITS IN TERMS OF RESOURCES AVAILABLE AND MAINTENANCE OF THE ECOSYSTEM. THESE LIMITS (THE REGION'S CARRYING CAPACITY) CAN BE MODELED; ONE SUCH MODEL, THE STATE-OF-THE-SYSTEM (SOS), IS DESCRIBED.

DECISION MODELS/FORECASTING/CONSERVATION

119

HUMPHREY, A.E.

1974

PRODUCTION OF FOOD AND FEED BY FERMENTATION.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SYMPOSIUM ON STRATEGIES FOR A.I.D. PROGRAMS IN SELECTED AREAS OF SCIENCE AND TECHNOLOGY, CAMBRIDGE, APRIL 1974, PROCEEDINGS, VOL. 4.

THE USE OF SINGLE CELL PROTEIN (SCP) AS FOOD AND FEED IS DISCUSSED. RATES AND METHODS OF PRODUCTION ARE DISCUSSED. VIABLE COMMERCIAL-SCALE PROCESSES ARE NOW POSSIBLE, BUT THE VILLAGE LEVEL TECHNOLOGY IS STILL IN DEVELOPMENT STAGES. CONSUMER ACCEPTANCE IS DISCUSSED.

DEVELOPING COUNTRIES/FOODS/PROTEIN/SOCIAL ASPECTS/CROP PRODUCTION/REFUSE/ AGRICULTURAL WASTE/COST-BENEFIT ANALYSIS

120

INTERMEDIATE TECHNOLOGY DEVELOPMENT GROUP LTD., LONDON
N.D.

PAPER PULP PACKAGING UNIT.

SAME AS AUTHDR. 4 P.

TECHNICAL SPECIFICATIONS FOR THE TOMLINSON (ROCKDALE) PAPER PULP PROCESSING UNIT.

PAPER/INDUSTRIES

121

INTERMEDIATE TECHNOLOGY DEVELOPMENT GROUP LTD., LONDON
1973

HOW TO MAKE A METAL BENDING MACHINE.

SAME AS AUTHDR. 23 P.

DRAWINGS AND ASSEMBLING INSTRUCTIONS ARE PROVIDED FOR A METAL BENDING MACHINE THAT CAN BE MADE OUT OF MATERIAL AVAILABLE ALMOST ANYWHERE. PICTURES ARE INCLUDED.

DEVELOPING COUNTRIES/METAL WORKING/MACHINE DESIGN

122

INTERMEDIATE TECHNOLOGY DEVELOPMENT GROUP LTD., LONDON
1975

THE HYDRAULIC RAM.

APPROPRIATE TECHNOLOGY 1(4):23-26.

EXPLAINS OPERATION AND CONSTRUCTION OF A HYDRAULIC RAM.

DEVELOPING COUNTRIES/WATER PUMPING

123

INTERNATIONAL RICE RESEARCH INSTITUTE, MANILA, PHILIPPINES

1975

IRRI SIX-ROW PADDY SEEDER.

APPROPRIATE TECHNOLOGY 2(1):27.

A DESIGN FOR A SIX-ROW PADDY SEEDER IS PRESENTED.

DEVELOPING COUNTRIES/CROP PRODUCTION/SOWING/FARM EQUIPMENT/MACHINE DESIGN/
RICE/PHILIPPINES

124

INTERNATIONAL RICE RESEARCH INSTITUTE, MANILA, PHILIPPINES

1975

THE BELLOWS PUMP.

APPROPRIATE TECHNOLOGY 2(3):8.

NO ABSTRACT.

DEVELOPING COUNTRIES/FARM EQUIPMENT/MACHINE DESIGN/IRRIGATION/WATER PUMPING/
RICE

125

INTERNATIONAL RICE RESEARCH INSTITUTE, MANILA, PHILIPPINES

1975

THE IRRI BATCH DRYER.

APPROPRIATE TECHNOLOGY 2(4):30.

A REPORT ON INTERNATIONAL RICE RESEARCH INSTITUTE'S DEVELOPMENT OF AN
INEXPENSIVE DRYER THAT IS SIMPLE ENOUGH TO BE LOCALLY MANUFACTURED IN SMALL
MACHINE SHOPS IN MOST DEVELOPING COUNTRIES.

DEVELOPING COUNTRIES/MACHINE DESIGN/FARM EQUIPMENT

126

ITAD, A.

1975

ELECTRICITY AND RURAL INDUSTRIALIZATION.

SMALL INDUSTRY JOURNAL 8(1):18-20.

THE FAILURE TO MAKE ELECTRICAL POWER AVAILABLE TO RURAL AREAS IS A SERIOUS
DRAWBACK TO DEVELOPMENT. HOWEVER, ELECTRIFICATION PER SE IS NOT A TOTAL
SOLUTION TO THE RURAL INDUSTRIALIZATION PROBLEM.

DEVELOPING COUNTRIES/INDUSTRIES/SOCIAL ASPECTS

127

JACKSON, S.

N.D.

ECONOMICALLY APPROPRIATE TECHNOLOGIES FOR DEVELOPING COUNTRIES.

OVERSEAS DEVELOPMENT COUNCIL, WASHINGTON, D.C.

NO ABSTRACT.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/ECONOMIC ASPECTS

128

JAMES, D.

1975

SECOND-HAND MACHINERY IN DEVELOPMENT: A COMMENT.

JOURNAL OF DEVELOPMENT STUDIES 11(3):230-233.

NO ABSTRACT.

USED EQUIPMENT/MACHINE DESIGN

129

JEDLICA, A.D.

1975

AN EXPERIMENT ON THE INSTITUTIONAL DEVELOPMENT OF APPROPRIATE TECHNOLOGY IN COLOMBIA.

TECHNDS 4(2):49-55.

THIS PAPER DESCRIBES AN ONGOING EXPERIMENT IN THE INDUSTRIAL ENGINEERING DEPARTMENT OF THE UNIVERSITY OF THE ANDES IN BOGOTA, COLOMBIA, WHICH HAS AS ITS MAJOR OBJECTIVES THE CREATION OF AN APPROPRIATE TECHNOLOGY TRAINING CAPACITY FOR COLOMBIAN ENGINEERS AND ADMINISTRATORS AS WELL AS AN INSTITUTIONAL ENVIRONMENT WHICH WILL SUSTAIN THIS TECHNOLOGICAL STRATEGY. INCLUDED IN THE PAPER IS A DEFINITION OF APPROPRIATE TECHNOLOGY AS CONCEPTUALIZED IN THIS EXPERIMENT AS WELL AS AN ELABORATION OF THE INNOVATIVE MANNER BY WHICH THE TECHNOLOGICAL STRATEGY IS BEING IMPLEMENTED IN COLOMBIA.

DEVELOPING COUNTRIES/EDUCATION/INSTITUTION BUILDING/COLOMBIA

130

JEQUIER, N. ED.

1976

APPROPRIATE TECHNOLOGY: PROBLEMS AND PROMISES.

DEVELOPMENT CENTER OF THE ORGANISATION FOR ECONOMIC COOPERATION AND DEVELOPMENT, PARIS. 344 P.

DEFINITIONS OF APPROPRIATE, INTERMEDIATE, AND LOW COST TECHNOLOGIES ARE GIVEN WITH COMPARISON. THE DEVELOPMENT OF APPROPRIATE TECHNOLOGY UNDER DIFFERENT POLITICAL IDEOLOGIES IS DISCUSSED. PROBLEMS OF APPROPRIATE TECHNOLOGY AS SECOND RATE AND EXPLOITATIVE ARE PRESENTED. DEVELOPING AN INNOVATIVE STRUCTURE IS CONSIDERED A KEY GOAL OF APPROPRIATE TECHNOLOGY. THE ROLE OF GOVERNMENT INSTITUTIONS IN PROMOTING APPROPRIATE TECHNOLOGY IS EXAMINED. NINETEEN VIEWPOINTS FROM CURRENT PRACTITIONERS ARE ALSO PRESENTED.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/POLITICAL ASPECTS/TECHNOLOGY TRANSFER

131

KANAROWSKI, S.

1975

WATERPROOFING MATERIALS FOR PREVENTION OF WIND-BLOWN RAIN PENETRATION THROUGH MASONRY WALLS.

ARMY CONSTRUCTION ENGINEERING RESEARCH LABORATORY, CHAMPAIGN, ILLINOIS. 47 P. AVAILABLE NTIS AS AD-A008 997/96ID.

NO ABSTRACT.

CONSTRUCTION MATERIALS/BRICKS

132

KAPLINSKY, R.

1973

THE POLITICAL ECONOMY OF LABOUR INTENSIVE TECHNOLOGIES. PAPER PRESENTED AT

UNIVERSITY OF EDINBURGH APPROPRIATE TECHNOLOGY CONFERENCE, SEPTEMBER 1973, PAPER PE/S 02, 17 P.

MANY LABOR INTENSIVE TECHNIQUES EXIST BUT ARE NOT USED DUE TO DISTORTIONS IN FACTOR PRICES. WITHOUT AWARENESS OF POWER RELATIONSHIPS, POLICY RECOMMENDATIONS ARE USELESS IN SITUATIONS WHERE DECISIONS WITH REGARD TO TECHNICAL CHOICES ARE MADE BY ENTREPRENEURS WHO SEEK TO MAXIMIZE A PROFIT DOMINATED OBJECTIVE FUNCTION. FOR THE PURPOSES OF DEVELOPMENT PLANNING IT IS MORE CORRECT TO DEFINE LABOR AND CAPITAL INTENSITY IN TERMS OF OUTPUT. THE NEED FOR STABILIZED MARKET PRICES IS DISCUSSED. UNFORTUNATELY, SOCIAL AND POLITICAL FORCES IN DEVELOPING COUNTRIES ENSURE THAT MUCH OF THE R&D IS DONE ON DEVELOPED COUNTRY NEEDS. POLITICAL FACTORS INFLUENCING THE MOBILIZATION OF LABOR ARE DISCUSSED. THE AUTHOR PUTS THE IDEALISM OF SCHUMACHER IN RATIONAL PERSPECTIVE.

DEVELOPING COUNTRIES/LABOR MIGRATION/TECHNOLOGY TRANSFER/POLITICAL ASPECTS/ECONOMIC ASPECTS

133

KAPLINSKY, R.

1975

ACCUMULATION AND THE TRANSFER OF TECHNOLOGY: ISSUES OF CONFLICT AND MECHANISMS FOR THE EXERCISE OF CONTROL.

WORLD DEVELOPMENT 4(3):197-224.

THE TRANSFER OF TECHNOLOGY FROM DEVELOPED TO UNDERDEVELOPED ECONOMIES IS ALMOST ALWAYS ASSOCIATED WITH A CONFLICT OF INTEREST. WHERE THIS CONFLICT ARISES, CONTROL IS EXERTED BY THE MORE POWERFUL PARTY TO ENSURE THAT THE

CONFLICT IS SETTLED IN HIS FAVOR. IT IS ARGUED THAT CONTROL IS ALLIED TO THE POWER TO DETERMINE RATE AND TYPE OF ACCUMULATION OF CAPITAL. A NUMBER OF POTENTIAL AREAS OF CONFLICT ARE DISCUSSED ALONG WITH A DISCUSSION OF THE MECHANISMS EACH PARTY CAN USE TO SETTLE THE CONFLICT IN HIS FAVOR.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/SOCIAL ASPECTS/POLITICAL ASPECTS

134

KASSANDER, A.R.

1968

STEAM POWER REVISITED.

UNIVERSITY OF ARIZONA, TUCSON, INSTITUTE OF ATMOSPHERIC PHYSICS. 10 P.
(UNPUBLISHED MANUSCRIPT)

DISCUSSES THE USE OF AGRICULTURAL BY-PRODUCTS AS FUEL FOR SIMPLE ENGINES, SPECIFICALLY STEAM ENGINES. A COMPARISON OF THE RELATIVE VALUE OF AGRICULTURAL PRODUCTS AS FUELS VS THEIR NORMAL ECONOMIC VALUE IS PRESENTED. THE WORK EFFICIENCY OF ANIMALS VS MACHINES IS DISCUSSED. ELABORATES ON THE HISTORY OF THE STEAM ENGINE AND MENTIONS CURRENT DEVELOPMENTS.

DEVELOPING COUNTRIES/STEAM POWER/AGRICULTURAL WASTE/ANIMAL POWER/MACHINE DESIGN/FARM EQUIPMENT/ALTERNATIVE FUELS

135

KAYA, Y./SUZUKI, Y.

1974

GLOBAL CONSTRAINTS AND A NEW VISION FOR DEVELOPMENT.

TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE 6(4):371-388.

IN THE INTEREST OF PROGRESS THE ADVANCED NATIONS MUST TAKE POSITIVE STEPS TO REFORM THE STRUCTURE OF THEIR OWN INDUSTRY. THE AUTHORS HAVE DEVELOPED A WORLD INDUSTRIAL MATHEMATICAL MODEL WITH SUBSETS REPRESENTING GEOGRAPHICAL REGIONS IN ORDER TO DETERMINE WHICH METHOD OF RESTRUCTURING IS BEST. THE BEHAVIOR OF THESE INTERACTING SUB-MODELS IS CONTROLLED BY INVESTMENT ACCORDING TO REGION AND INDUSTRIAL SECTOR.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/ECONOMIC ASPECTS/DECISION MODELS

136

KEATLEY, R.

1975

FERRO-CEMENT BOAT BUILDING IN A CHINESE COMMUNE.

APPROPRIATE TECHNOLOGY 2(1):4-6.

DISCUSSES DESIGN, FABRICATION, COST AND ECOLOGICAL IMPACTS OF FERRO-CEMENT BOAT DESIGN. ADDITIONALLY AN EVALUATION OF THE ORGANIZATION OF THIS INDUSTRY IS GIVEN FOR THE COMMUNE.

DEVELOPING COUNTRIES/CHINA/COMMUNES/INDUSTRIES/BOATS/CEMENT/CONSTRUCTION METHODS/ECOLOGY/COST-BENEFIT ANALYSIS

137

KEIGWIN, J.

1975

WATER WHEEL.

APPROPRIATE TECHNOLOGY 2(4):27-28.

A DESIGN FOR A WATER WHEEL IS DISCUSSED.

DEVELOPING COUNTRIES/WATER CONVEYANCE/WATER POWER/SUDAN

138

KENKARE, A.S.

1975

TECHNOLOGY FOR THE DEVELOPING WORLD.

CHARTERED MECHANICAL ENGINEERING 22(3):87-90.

NO ABSTRACT.

DEVELOPING COUNTRIES/SOCIAL ASPECTS

139

KHAN, A.U.

1975

UNIVERSITY RESEARCH AND INDUSTRIAL RESEARCH IN THE LDCS.

THE INTERNATIONAL RICE RESEARCH INSTITUTE, MANILA, PHILIPPINES, PAPER 75-03.
12 P.

FUNDS FOR RESEARCH ARE PRIMARILY AVAILABLE TO ACADEMIC INSTITUTIONS IN THE DEVELOPING COUNTRIES. SUCH INSTITUTIONS ARE USUALLY ENGAGED IN CONDUCTING RESEARCH TO ENHANCE KNOWLEDGE RATHER THAN DEVELOPING PRODUCTS WHICH LOCAL INDUSTRY COULD PRODUCE. EXPERIENCE AT THE INTERNATIONAL RICE RESEARCH INSTITUTE HAS INDICATED THAT THE DEVELOPMENT OF DEMAND-ORIENTED AGRICULTURAL MACHINES CAN RESULT IN THE RAPID DEVELOPMENT OF LOCAL FARM MACHINE INDUSTRIES IN THE LDC. OVER 22,000 IRRI DESIGNED MACHINES HAVE BEEN MANUFACTURED BY SMALL METALWORKING FIRMS IN 10 DEVELOPING COUNTRIES SINCE THE RELEASE OF THE FIRST DESIGN FOUR YEARS AGO. PICTURES AND DESCRIPTIONS OF THESE MACHINES ARE INCLUDED.

DEVELOPING COUNTRIES/FARM EQUIPMENT/ENTREPRENEURSHIP/CONSULTING/RICE

140

KING, F.H.

19--

FARMERS OF FORTY CENTURIES.

HARCOURT, BRACE, NEW YORK. 379 P.

RURAL AGRICULTURAL PRACTICES AND CUSTOMS OF CHINA, KOREA AND JAPAN ARE PRESENTED.

DEVELOPING COUNTRIES/AGRICULTURE/SOCIAL ASPECTS/CHINA/JAPAN/KOREA

141

KING, K.

1975

IMPROVISATION AND MACHINE-MAKING.

APPROPRIATE TECHNOLOGY 2(4):19-20.

IN KENYA THE MAJORITY OF INTERMEDIATE MACHINE DESIGN IS CARRIED OUT BY A HANDFUL OF MEN WHO HAVE ONLY FULL PRIMARY EDUCATION OR LESS, AND CARRY ON THEIR OPERATIONS IN KENYA'S INFORMAL SECTOR. THE POTENTIAL FOR DEVELOPMENT OF THESE ROUGH MACHINES IS DISCUSSED.

DEVELOPING COUNTRIES/KENYA/MACHINE DESIGN/ENTREPRENEURSHIP/METAL WORKING

142

KLITGAARD, R.E.

1974

MEASURING TECHNOLOGICAL CHANGE: COMMENTS ON A PROPOSED METHODOLOGY.

TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE 6(4):437-440.

NO ABSTRACT.

TECHNOLOGY MEASUREMENT

143

KLITGAARD, R.F.

1975

ON ASSESSING A GIFT HORSE.

INDUSTRIAL DEVELOPMENT REVIEW: FOCUS 17(4):15-20.

A SYSTEM FOR EVALUATING FOREIGN AID IS IMPORTANT IF A COUNTRY WISHES TO KEEP CONTROL OF THE DIRECTION OF ITS NATIONAL DEVELOPMENT. HOWEVER, AS A RECENT CASE DEMONSTRATES, BUREAUCRATIC SELF-INTEREST CAN DISTORT THE FUNCTIONING OF SUCH AN EVALUATION SYSTEM.

DEVELOPING COUNTRIES/DECISION MODELS/POLITICAL ASPECTS

144

KNIGHT, J.B.

1972

RURAL URBAN INCOME COMPARISONS AND MIGRATION IN GHANA.

OXFORD UNIVERSITY INSTITUTE OF ECONOMICS AND STATISTICS, BULLETIN 34:199-228.

NO ABSTRACT.

DEVELOPING COUNTRIES/LABOR/LABOR MIGRATION/ECONOMIC ASPECTS/GHANA

145

KRISTOL, I.

1975

THE NEW COLD WAR.

WALL STREET JOURNAL (JULY 17) 186. P. 18.

THIS ARTICLE PRESENTS THE VIEWPOINT THAT THIRD WORLD COUNTRIES BELIEVE THEIR POVERTY IS THE FAULT OF EXPLOITATION OF THE CAPITALISTIC COUNTRIES.

DEVELOPING COUNTRIES/SOCIAL ASPECTS

146

KROPOTKIN, P.

1912

FIELDS, FACTORIES, AND WORKSHOPS.

THOMAS NELSON AND SONS, NEW YORK. 477 P.

DECENTRALIZATION OF INDUSTRY AND ITS INTEGRATION WITH AGRICULTURE ARE PROPOSED AS A POLICY FOR DEVELOPMENT WHICH WILL MAXIMIZE NOT JUST FOR PROFIT BUT HUMAN WORTH AS WELL. CURRENT STAGES AND HISTORIES OF INDUSTRIAL AND AGRICULTURAL DEVELOPMENT FOR NUMEROUS COUNTRIES ARE PRESENTED. THE DEVELOPMENT OF INDUSTRIES FOR SELF SUFFICIENCY BY COLONIES IS DESCRIBED AS A NATURAL REVOLT AGAINST SPECIALIZATION. THE NECESSITY OF MAN'S LABORS TO INCLUDE MENTAL AS WELL AS PHYSICAL ASPECTS IS DISCUSSED, AND SOME SUCCESSFUL EDUCATIONAL PROGRAMS THAT COMBINE PRACTICAL AND THEORETICAL DEVELOPMENT ARE PRESENTED.

DEVELOPING COUNTRIES/LABOR/ECONOMIC ASPECTS/INDUSTRIES/AGRICULTURE/EDUCATION/TECHNOLOGY TRANSFER/SOCIAL ASPECTS

147

KROPOTKIN, P.

1974

FIELDS, FACTORIES AND WORKSHOPS TOMORROW, EDITED BY COLIN WARD.

GEORGE ALLEN AND UNWIN, LONDON. 477 P.

FIRST PUBLISHED IN 1899, THIS BOOK IS ONE OF THE FIRST WORKS EMPHASIZING LABOR INTENSIVE TECHNOLOGICAL ALTERNATIVES. PROPOSES THAT THERE ARE NO TECHNICAL REASONS FOR PRODUCTION UNITS IN INDUSTRY AND AGRICULTURE TO GROW ANY LARGER. WARD'S APPENDICIES ILLUMINATE EACH CHAPTER BY PUTTING KROPOTKIN'S WORDS INTO CURRENT SETTING.

ECONOMIC ASPECTS/ECOLOGY/NATURAL RESOURCES/SOCIAL ASPECTS/GOVERNMENT

148

KRUSCH, P.A.

1975

GROUNDNUT HULLER FROM SCRAP VEHICLE PARTS.

VAIKUNTHBHAI MEHTA SMARAK TRUST, BOMBAY, INDIA, DOCUMENTATION BULLETIN 21:VII-X.

INSTRUCTIONS FOR CONSTRUCTION OF A GROUNDNUT HULLER ARE PRESENTED.

DEVELOPING COUNTRIES/GROUNDNUTS/HULLING/MACHINE DESIGN/FARM EQUIPMENT

149

LABEL, D./SCHULTZ, K.

1975

A FRAMEWORK FOR STANDARDIZATION POLICIES IN DEVELOPING COUNTRIES.

TECHNOS 4(2):14-22.

THIS PAPER IS INTENDED FOR THE GOVERNMENT POLICY MAKER, THE INTERNATIONAL INDUSTRIALIST AND LOCAL BUSINESSMAN, ALL OF WHOM ARE AFFECTED BY, AND STRIVE TO INFLUENCE, STANDARDIZATION POLICY. A CONCEPTUAL FRAMEWORK IS PRESENTED FOR VIEWING THE NATIONAL STANDARDS PROGRAM, ITS FUNCTIONAL ANATOMY, ALTERNATIVE GOALS AND STRATEGIES FOR IMPLEMENTATION, AND CONSEQUENT AREAS OF POTENTIAL IMPACT. IT INCLUDES A FORMAL PROCEDURE COMPARING ALTERNATIVE POLICIES AND THEIR RELATIVE BENEFITS AND COSTS IN AN OBJECTIVE, ORGANIZED FASHION. THIS FORMAL PROCEDURE IS ADVOCATED AS AN AID TO AUGMENT DECISION PROCESSES IN ORGANIZING, ANALYZING, COMMUNICATING, AND DEBATING THE SELECTION OF POLICY ALTERNATIVES.

DEVELOPING COUNTRIES/INDUSTRIES

150

LANGDON, S.

1975

TECHNOLOGY TRANSFER BY MULTINATIONAL CORPORATIONS IN AFRICA: EFFECTS ON THE ECONOMY. PAPER PRESENTED AT

AFRICAN STUDIES ASSOCIATION ANNUAL MEETING, SAN FRANCISCO, OCTOBER 1975.

DEFINES TECHNOLOGY TRANSFER. PROBLEMS OF SELLING SPECIALIZED KNOWLEDGE ARE DISCUSSED. SIDE EFFECTS (CONSUMPTION TECHNOLOGY) ARE DISCUSSED. THE CONCEPT OF PERPETUAL TECHNOLOGICAL DEPENDENCE IS PRESENTED. THE COST OF TECHNOLOGY, BOTH MONETARY AND SOCIAL, IS EVALUATED. THE ROLE OF BARGAINING IS DISCUSSED.

DEVELOPING COUNTRIES/KENYA/SOCIAL ASPECTS/TECHNOLOGY TRANSFER/INDUSTRIES/ECONOMIC ASPECTS/LABOR

151

LAWAND, M.T./D'OMBRAIN, G.L.

1975

BRACE RESEARCH INSTITUTE ANNUAL REPORT.

MC GILL UNIVERSITY, QUEBEC, BRACE RESEARCH INSTITUTE.

DESCRIBES THE BACKGROUND, GOALS AND POLICIES OF THE BRACE RESEARCH INSTITUTE. A DIRECTORY OF FACULTY AND LISTS OF CONFERENCES ATTENDED AND PUBLICATIONS ARE PRESENTED. THE 1974-1975 GRANT EXPENDITURES ARE LISTED. SOME OF THE AREAS OF RESEARCH EMBRACED ARE: DESALINATION OF SEA WATER, SOLAR ENERGY, SANITARY TECHNOLOGY, WINDMILL TECHNOLOGY, ECOSYSTEMS, ARID LAND STUDIES, APPROPRIATE TECHNOLOGY.

SOLAR POWER/WIND POWER/ECOSYSTEMS/DESALINATION/SOLAR HEATING/CONSULTING

152

LEVITSKY, J.

1975

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION, VIENNA.

CONFERENCE AND SEMINAR ON TECHNIQUES AND METHODOLOGIES FOR STIMULATING SMALL-SCALE LABOR-INTENSIVE INDUSTRIES IN DEVELOPING COUNTRIES, ATLANTA, GEORGIA, MARCH 10-14, SUMMARY OF PROCEEDINGS, 17 P.

THE MAJOR REASONS FOR SUPPORTING SMALL SCALE INDUSTRY ARE THAT LESS CAPITAL INVESTMENT IS REQUIRED, LOCAL INITIATIVES ARE CHanneLED, AND LOCAL NEEDS ARE SATISFIED. CATEGORIES OF SMALL SCALE INDUSTRY ARE INVESTIGATED AND AREAS IN WHICH SMALL INDUSTRIES NEED ASSISTANCE ARE LISTED. CRITERIA FOR DEFINING SMALL INDUSTRY ARE DISCUSSED. THE UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION'S ROLE IN DEVELOPING NATIONAL SMALL INDUSTRY ASSISTANCE CENTERS IS PRESENTED.

DEVELOPING COUNTRIES/INDUSTRIES/TECHNOLOGY TRANSFER/BUSINESS MANAGEMENT/ENTREPRENEURSHIP/CONSULTING

153

LEVY, C.

1975

WOOD PRESERVATION IN DEVELOPING TROPICAL COUNTRIES: A NOTE FROM PAPUA, NEW GUINEA.

APPROPRIATE TECHNOLOGY 2(2):23-24.

DESCRIBES SEVERAL METHODS OF WOOD TREATMENT IN TROPICAL ENVIRONMENTS. DISCUSSES THE RELATIVE INCREASES IN USEFUL TIMBER LIFE USING THE TREATMENT PROCESS AND LISTS ADDRESSES FOR EQUIPMENT DESIGNS AND MORE INFORMATION.

DEVELOPING COUNTRIES/NEW GUINEA/TIMBER MANAGEMENT/CONSERVATION/MACHINE DESIGN

154

LIM, D.

1976

ON THE MEASUREMENT OF CAPITAL UTILIZATION IN LESS DEVELOPED COUNTRIES.

OXFORD ECONOMIC PAPERS 26(1):149-159.

THE SHORTAGE OF PHYSICAL CAPITAL IS OFTEN SEEN AS THE CRUCIAL CONSTRAINT TO GROWTH IN LDCS. HOWEVER, RECENT STUDIES CLAIM THAT UNDERUTILIZATION OF EXISTING CAPITAL EXISTS ON A MASSIVE SCALE. THIS PAPER SHOWS THAT THE EXTENT OF UNDERUTILIZATION MAY BE EXAGGERATED BECAUSE OF ERRORS IN MEASUREMENT OF CAPITAL UTILIZATION.

DEVELOPING COUNTRIES/LABOR/INDUSTRIES/ECONOMIC ASPECTS

155

LINDSEY, G.R.

1969

THE STABILITY OF COUNTRIES OF VARIOUS SIZES. IN INTERNATIONAL CONFERENCE ON OPERATIONAL RESEARCH, 5TH, VENICE, JUNE 22-27, PROCEEDINGS, P. 181-192. TAVISTOCK PUBLICATIONS, LONDON.

AN ANALOGY OF NATIONAL STABILITY TO ATOMIC NUCLEI PROVIDES THE BASIS FOR ARGUMENT. VARIOUS ATTRACTIVE AND REPULSIVE FORCES ARE DISCUSSED. HISTORICAL UPPER AND LOWER SIZE LIMITS FOR EACH CONTINENT ARE PRESENTED. A QUANTITATIVE MODEL IS PRESENTED WHICH IS USED TO SHOW THE STABILITY SIZE FOR EACH CONTINENT. DEVELOPING COUNTRIES/SOCIAL ASPECTS/DECISION MODELS/POLITICAL ASPECTS

156

LODGE, G.C.

1967

RURAL STRUCTURES OF LATIN AMERICA. PAPER INCLUDED AS COURSEWORK IN

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MECHANICAL ENGINEERING DEPARTMENT, ENGINEERING PROJECTS LABORATORY, COURSE 2.67: DESIGN AND EXPERIMENT. SPRING, 1967.

THE BASIC STRUCTURE OF RURAL LIFE IN CENTRAL PANAMA (VERAGUAS PROVINCE) WHICH THE AUTHOR CLAIMS IS REPRESENTATIVE OF MANY AREAS IN RURAL LATIN AMERICA, IS DISCUSSED. THE CAMPESINOS ARE THE RURAL PEOPLE WHO LEAD A SEMI-NOMADIC LIFE WITH A SPLINTERED SOCIAL STRUCTURE. VERY SUPERSTITIOUS, THEY RESIST ALL CHANGES UPSETTING TO THEIR PRESENT FRAGILE EXISTENCE. CRITERIA FOR DEVELOPMENTAL SUCCESS ARE PRESENTED.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/PANAMA/TECHNOLOGY TRANSFER

157

LOFTHOUSE, P.

1975

CASE HISTORIES OF SUCCESSFUL OPERATIONAL PROGRAMS. CASE 1: INTERMEDIATE TECHNOLOGY DEVELOPMENT GROUP.

CONFERENCE AND SEMINAR ON TECHNIQUES AND METHODOLOGIES FOR STIMULATING SMALL-SCALE LABOR-INTENSIVE INDUSTRIES IN DEVELOPING COUNTRIES, ATLANTA, GEORGIA, MARCH 10-14, SUMMARY OF PROCEEDINGS, 17 P.

A BRIEF HISTORY OF THE INTERMEDIATE TECHNOLOGY DEVELOPMENT GROUP (ITDG) IS PRESENTED. PROJECTS FROM THE INDUSTRIAL LIAISON UNIT AND DEVELOPMENT TECHNIQUES ARE PRESENTED. PROJECTS DISCUSSED ARE: HOSPITAL EQUIPMENT IN NIGERIA, WOOD WORKING SHOP IN GHANA, WEIGHING SCALE IN ZAMBIA, SHOEMAKING PLANT IN UNITED ARAB REPUBLIC, MANUFACTURING EGG TRAYS IN NIGERIA, MANUFACTURING GLASS JARS IN SOUTH AMERICA, AND DEVELOPING A SMALL SCALE PAPER CONVERSION PLANT. ITDG REACTS MAINLY TO REQUESTS OF LDCS.

DEVELOPING COUNTRIES/INDUSTRIES/TECHNOLOGY TRANSFER/PAPER/GLASS/LEATHER/TOOLS/MACHINE DESIGN/COST-BENEFIT ANALYSIS/ENTREPRENEURSHIP/CONSULTING

158

LOVE, S.

1974

WE MUST MAKE THINGS SMALLER, SIMPLER.

FUTURIST 8(6):281.

NO ABSTRACT.

SOCIAL ASPECTS

159

MABOGUNJE, A.

1972

IMAGINATION RATHER THAN MONEY.

CERES 5(11):26-30.

IN THE THIRD WORLD, THE FIRST DEVELOPMENT DECADE, EVEN WHERE IT HAS BROUGHT GROWTH IN GROSS NATIONAL PRODUCT, HAS DONE SO AT GREAT SOCIAL COST. CONSEQUENTLY ALTERNATIVE STRATEGIES FOR DEVELOPMENT ARE BEING SOUGHT. THIS ARTICLE DISCUSSES HOW OVERCROWDED URBAN CONDITIONS ARE A DETRIMENT TO THE ENVIRONMENT RESULTING IN OVER-CONCENTRATION DISEASES, LOSS OF PRIVACY, AND WATER AND AIR POLLUTION. BY PUTTING THE EMPHASIS ON PEOPLE, NEW DEVELOPMENT STRATEGIES CAN INCLUDE ENVIRONMENTAL DEFENSE IN PLANS AT LOW COST.

DEVELOPING COUNTRIES/AIR POLLUTION/WATER POLLUTION/ECOLOGY/SOCIAL ASPECTS/
DISEASE CONTROL

160

MACKAY, J.

1975

HEALTH AUXILIARY TRAINING IN PAPUA, NEW GUINEA.

APPROPRIATE TECHNOLOGY 2(4):28-29.

THE MAIN DISEASES IN PAPUA, NEW GUINEA, ARE THOSE PREVALENT IN MANY OTHER DEVELOPING COUNTRIES: MALNUTRITION, LEPROSY, RESPIRATORY DISEASES, TB AND MALARIA; DISEASES WHICH NEED A GREAT EMPHASIS ON PREVENTION TO BRING ABOUT THEIR CONTROL. THE NATIONAL HEALTH PLAN PLACES DEFINITE STRESS ON THE USE OF AUXILIARY WORKERS TO ACT AS THE FIRST LINE OF DEFENSE. THE PROBLEMS OF TRAINING THESE HEALTH EXTENSION OFFICERS (HEO) ARE DISCUSSED. OF PARTICULAR INTEREST ARE THE COMMUNICATION PROBLEMS CAUSED BY THE LIMITED VOCABULARY OF THE STUDENTS, AND THE STRONG ELEMENTS OF SUPERSTITION.

DEVELOPING COUNTRIES/EDUCATION/NEW GUINEA/DISEASE CONTROL/TECHNOLOGY TRANSFER

161

MACPHERSON, G.A.

1975

FIRST STEPS IN VILLAGE MECHANISATION.

TANZANIA PUBLISHING HOUSE, DAR ES SALAAM. 231 P.

THIS BOOK IS FOR VILLAGE DEVELOPMENT WORKERS WHO WISH TO ASSIST IN STARTING A MECHANIZATION PROCESS IN TRADITIONAL PEASANT VILLAGES. IT USES PRINCIPLES OF SELF-RELIANCE WHEREVER POSSIBLE BOTH IN PERSONNEL AND MATERIALS. THE BOOK SUGGESTS THE FIRST FEW STEPS IN MECHANIZATION, AFTER WHICH PEOPLE OF THE VILLAGE CAN PROCEED INDEPENDENTLY.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/FARM EQUIPMENT/MACHINE DESIGN/TECHNOLOGY TRANSFER

162

MACPHERSON, G.A./JACKSON, D.

1976

VILLAGE TECHNOLOGY IN TANZANIA.

DEVELOPMENT DIGEST 14(1):48-55.

NO ABSTRACT.

DEVELOPING COUNTRIES/TANZANIA/SOCIAL ASPECTS

163

MADDOCKS, D.

1975

AN INTRODUCTION TO METHODS OF RAIN WATER COLLECTION AND STORAGE.

APPROPRIATE TECHNOLOGY 2(3):24-25.

DISCUSSES THE CONSTRUCTION OF VARIOUS TYPES OF RAINWATER CATCHMENTS. PROVIDES THE NECESSARY CONSIDERATIONS FOR PLANNING A RAINWATER SUPPLY SCHEME. PLANS FOR SMALL COMMUNITIES AS WELL AS INDIVIDUAL FAMILIES ARE PRESENTED. AN EVALUATION OF DIFFERENT CONSTRUCTION METHODS TO IMPROVE RUNOFF IS PRESENTED.

DEVELOPING COUNTRIES/JAMAICA/SUDAN/CONSTRUCTION METHODS/WATER STORAGE/RUNOFF/WATER HARVESTING/CATCHMENTS/BUILDING DESIGN

164

MAKANJUOLA, G.A.

1975

A MACHINE FOR PREPARING POUNDED YAM AND SIMILAR FOODS IN NIGERIA.

VAIKUNTHBHAI MEHTA SMARAK TRUST, BOMBAY, INDIA, DOCUMENTATION BULLETIN 20:7-9.

A DESIGN FOR A DEVICE FOR POUNDING YAM AND SIMILAR FOOD IS DISCUSSED.

DEVELOPING COUNTRIES/NIGERIA/MACHINE DESIGN/FOODS

165

MAKANJUOLA, G.A.

1975

THE SEMI-AUTOMATIC DEVICE FOR PLANTING CASSAVA STEM CUTTINGS ON RIDGES.

APPROPRIATE TECHNOLOGY 2(4):24-25.

THIS PAPER DESCRIBES THE DETAILS OF A MECHANICAL DEVICE FOR PLANTING CASSAVA STEM CUTTINGS ON FRESHLY MADE RIDGES. THE MACHINE INCORPORATING THIS DEVICE CONSISTS OF A DISC RIDGE AND A SEMI-AUTOMATIC PLANTER. FOR A MULTI-ROW MACHINE, THERE WILL BE MANY UNITS OF THE PLANTING DEVICE AS THERE ARE A NUMBER OF RIDGES. THE MACHINE CAN BE MANUFACTURED ENTIRELY LOCALLY WITH THE EXCEPTION OF THE RIDGER DISCS AND THE BEARINGS.

DEVELOPING COUNTRIES/MACHINE DESIGN/FARM EQUIPMENT/CASSAVA

166

MANIKKAVASAGAR, T.N.

1968

WORKING PARTY ON THE AGRICULTURAL ENGINEERING ASPECTS OF RICE PRODUCTION, STORAGE AND PROCESSING. PAPER PRESENTED AT

INTERNATIONAL RICE COMMISSION CONFERENCE, CEYLON, SEPTEMBER 5-9.

ONE ATTEMPT AT OVERCOMING THE HIGH LABOR REQUIREMENTS FOR TRANSPLANTING RICE IS THE RENDERING OF A BROADCAST FIELD SUITABLE FOR INTERIOR CULTIVATION BY CRUSHING OUT THE PLANTS BETWEEN REGULARLY SPACED STRIPS. THE TECHNIQUE IS KNOWN AS STRIP CULTIVATION AND THE PAPER DESCRIBES THE TECHNIQUE AND THE PERFORMANCE OF THE CROP IN COMPARISON WITH TRANSPLANT AND BROADCAST SOWING.

DEVELOPING COUNTRIES/CROP PRODUCTION/RICE/SOWING/FARM EQUIPMENT

167

MANN, H.T./WILLIAMSON, D.

1973

WATER TREATMENT AND SANITATION: SIMPLE METHODS FOR RURAL AREAS.

INTERMEDIATE TECHNOLOGY DEVELOPMENT GROUP LTD., LONDON. 60 P.

THIS HANDBOOK DEALS WITH THE SELECTION OF A WATER SOURCE, DEVELOPMENT OF A WATER SUPPLY, WATER TESTING AND TREATMENT, SANITATION, AND EMERGENCY WATER TREATMENT MEASURES. INCLUDES DISCUSSION ON DETERMINING FLOWS, HEAD LOSS, AND A BIBLIOGRAPHY.

DEVELOPING COUNTRIES/WATER STORAGE/WASTE WATER/WATER CONVEYANCE/SANITATION/WATER/EXCREMENT/BIBLIOGRAPHIES

168

MANN, I.

1960

RURAL TANNING TECHNIQUES.

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME. 252 P.

THIS PUBLICATION IS DESIGNED ESPECIALLY FOR TRAINING PURPOSES; IT DESCRIBES AND ILLUSTRATES PROCESSES, TOOLS AND EQUIPMENT FOR TANNING ANIMAL HIDES AND IS INTENDED TO BE USED BY RURAL TANNERS AND AS TRAINING COURSES IN WHICH FAO IS INVOLVED. SOME CHAPTERS ARE MORE SUITABLE FOR THE ADVANCED RURAL TANNER. A GLOSSARY OF TERMS USED IN THE TANNING AND LEATHER TRADE IS INCLUDED. SELECTED BIBLIOGRAPHY INCLUDED.

DEVELOPING COUNTRIES/BIBLIOGRAPHIES/TECHNOLOGY TRANSFER/EDUCATION/LEATHER

169

MANN, I.

1962

PROCESING AND UTILIZATION OF ANIMAL BY PRODUCTS.

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME. 247 P.

IMPLEMENTATION OF PROGRAMS IS EXPLAINED, PARTICULARLY IN COUNTRIES WITH SUBTROPICAL AND TROPICAL CLIMATES. THIS PAPER DESCRIBES SELECTED METHODS AND PROCESSES AS WELL AS INEXPENSIVE EQUIPMENT FOR THE RURAL INDUSTRIAL UTILIZATION OF SUCH ANIMAL BY-PRODUCTS AS BLOOD, BONES, HOoves, HORNS, INEDIBLE MEAT, WHICH DO NOT HAVE A PARTICULAR VALUE AND THEREFORE ARE OFTEN WASTED. GENERATION OF METHANE GAS IS ALSO DISCUSSED AND SOME BASIC ANAEROBIC DIGESTOR DESIGNS ARE PRESENTED.

DEVELOPING COUNTRIES/ANAEROBIC DIGESTORS

170

MATTHEWS, E.G.

1975

METHANE AND COFFEE.

APPROPRIATE TECHNOLOGY 2(1):2-3.

DISCUSSES THE USE OF COMPOST FROM ANAEROBIC DIGESTORS TO REPLACE SOIL HUMUS, THEREBY ELIMINATING COFFEE BERRY DISEASE.

DEVELOPING COUNTRIES/ANAEROBIC DIGESTORS/FERTILIZERS/COFFEE/CEYLON/KENYA/
CROP PRODUCTION/FOODS/DISEASE CONTROL

171

MCBAIN, N.S./GORSYTH, D.J.C.

1975

AN INTERMEDIATE TECHNOLOGY FOR SHOE MAKING IN LESS DEVELOPED COUNTRIES.

APPROPRIATE TECHNOLOGY 2(3):26-27.

PRESENTS A COST-BENEFIT ANALYSIS OF USING A LOCALLY FABRICATED MACHINE FOR FINISHING AND SCOURING SHOES AS OPPOSED TO A MARKETED BRAND. DESIGN FOR THE LOCALLY FABRICATED MACHINE IS GIVEN.

DEVELOPING COUNTRIES/COST-BENEFIT ANALYSIS/CLOTHING/SHOES/MACHINE DESIGN

172

MCBAIN, N.S./PICKETT, J.

1975

FOOTWEAR PRODUCTION IN ETHIOPIA: CASE STUDY OF APPROPRIATE TECHNOLOGY.

JOURNAL OF MODERN AFRICAN STUDIES 13(3):415-427.

NO ABSTRACT.

ETHIOPIA/DEVELOPING COUNTRIES/SHOES/INDUSTRIES

173

MCDOWELL, J.

1975

THE CONCEPT OF VILLAGE TECHNOLOGY IN EASTERN AFRICA.

APPROPRIATE TECHNOLOGY 2(2):15-17.

DEFINES VILLAGE TECHNOLOGY AND SHOWS THE APPLICATION OF INTERMEDIATE TECHNOLOGY TO THE AFRICAN RURAL POPULATION.

DEVELOPING COUNTRIES/WATER CONVEYANCE/WIND POWER/SOLAR ENERGY/EDUCATION/SOCIAL ASPECTS/GHANA/AGRICULTURE/TECHNOLOGY TRANSFER

174

MCHENRY, P.G.

1973

ADOBE: BUILD IT YOURSELF.

UNIVERSITY OF ARIZONA PRESS, TUCSON. 153 P.

A COMPLETE GUIDE TO ADOBE HOME CONSTRUCTION, INCLUDING DESIGN, FINANCING, PLUMBING, HEATING AND ELECTRICAL WORK. BIBLIOGRAPHY INCLUDED.

BUILDING DESIGN/CONSTRUCTION METHODS/CONSTRUCTION MATERIALS/ADBE/BRICKS/BIBLIOGRAPHIES

175

MEADOWS, C.A.

1972

LIMITS TO GROWTH: A REPORT FOR THE CLUB OF ROME'S PROJECT ON THE PREDICAMENT OF MANKIND.

UNIVERSE BOOKS, NEW YORK. 205 P.

NO ABSTRACT.

ENERGY/NATURAL RESOURCES/CONSERVATION/SOCIAL ASPECTS

176

MEINEL, A.B./MEINEL, M.P.

N.D.

THE VILLAGE ENERGY CENTER: A NEW OPTION FOR SOLAR ENERGY UTILIZATION BY SAHEL COMMUNITIES.

UNIVERSITY OF ARIZONA, TUCSON, OPTICAL SCIENCES CENTER/HELIO ASSOCIATES INC., TUCSON. 18 P.

SOLAR ENERGY UTILIZATION HAS NOT FULFILLED THE EXPECTATIONS DEVELOPED IN THE 1950'S AND 1960'S. A REVIEW OF THE SUCCESSES AND FAILURES OF PRESENT ATTEMPTS TO UTILIZE SOLAR ENERGY IN DEVELOPING COUNTRIES LEADS TO CONSIDERATION OF A NEW PROPOSAL, THE VILLAGE ENERGY CENTER (VEC). THE VEC DISTRIBUTES ELECTRICAL POWER FROM A SOLAR THERMAL POWER PLANT TO MEET THE NEEDS OF THE COMMUNITY. EARLY DEVELOPMENT OF THE ENERGY CENTER CAN PROFIT FROM CURRENT INTEREST IN SOLAR ENERGY. APPLICATION TO THE SAHEL IS SPECIFICALLY DISCUSSED. PROBLEMS ASSOCIATED WITH THE INTRODUCTION OF POWER INTO A FUEL-SCARCE COUNTRY ARE CONSIDERED.

DEVELOPING COUNTRIES/SOLAR ENERGY/SAHEL/SOCIAL ASPECTS/COST-BENEFIT ANALYSIS

177

MERCHANT, D.K.

1975

A MULTIPERIOD INVESTMENT DECISION MODEL FOR DEVELOPING COUNTRIES.

UNIVERSITY OF ROCHESTER, GRADUATE SCHOOL OF MANAGEMENT. 24 P.

PLANNING AUTHORITIES IN DEVELOPING NATIONS HAVE TO MAKE DECISIONS REGARDING LEVELS OF INVESTMENT IN VARIOUS SEGMENTS OF THE ECONOMIC LIFE OF THE NATION. THE DECISIONS USUALLY COVER A PERIOD OF SEVERAL YEARS AND PRIMARILY CONSIST OF CAPITAL RATIONING WITH RESPECT TO TOTAL FUNDS AVAILABLE FROM INTERNAL SAVINGS AND EXTERNAL AID. THIS PROCESS IS FORMALIZED IN AN AGGREGATE MATHEMATICAL MODEL WHICH IS A NON LINEAR PROGRAM. ALSO PRESENTED ARE SOME ALTERNATE FORMULATIONS, ONE OF WHICH CAN BE HANDLED WITH LINEAR PROGRAMMING CODES. BIBLIOGRAPHY INCLUDED.

DEVELOPING COUNTRIES/MATHEMATICAL MODELS/POLITICAL ASPECTS/ECONOMIC ASPECTS

178

MERRILL, R.

1974

KEYNOTE ADDRESS. PAPER PRESENTED AT

NORTHWEST CONFERENCE ON ALTERNATIVE AGRICULTURE, CENTRAL WASHINGTON STATE COLLEGE, ELLENSBURG, NOVEMBER 21-23, 1974.

THE SPIRAL OF PROGRESS HAS MADE IT POSSIBLE FOR MOST PEOPLE IN DEVELOPED COUNTRIES TO RETURN TO THE LAND AND EKE OUT A LIVING. TEN TIMES THE ENERGY VALUE OF FOOD IS REQUIRED TO PRODUCE AND DELIVER IT. ALTERNATIVE FORMS OF AGRICULTURE MUST ADDRESS A NUMBER OF QUESTIONS INCLUDING WHETHER INCREASES IN FOOD PRODUCTION JUSTIFY ADDITIONAL USES OF FOSSIL FUEL, AND TO WHAT EXTENT CAN THE POLLUTING, HIGH ENERGY TECHNIQUES OF AGRICULTURE BE REPLACED BY THE RENEWABLE AND SELF-SUSTAINING ENERGY OF NATURAL RESOURCES? INCLUDES ENERGY CONSUMPTION STATISTICS.

AGRICULTURE/ENERGY/CONSERVATION/ORGANIC FARMING

179

MERRILL, W.

1975

POWER TO THE FARMER.

WAR ON HUNGFR 10(2):14, 18.

PROGRAMS TO INCREASE DRAFT ANIMAL NUMBERS SHOULD BE VIEWED AS INTERMEDIATE PROGRAMS WHICH MAY BE APPROPRIATE SITUATIONS WHERE AVAILABLE AGRICULTURAL POWER IS BELOW 0.2 HORSE POWER PER HECTARE; HOWEVER, INCREASED MECHANIZATION APPEARS TO BE THE ONLY VIABLE MEANS OF SIGNIFICANTLY INCREASING AVAILABLE AGRICULTURAL POWER IN THE LONG RUN. THE IMPLEMENTATION OF APPROPRIATE MECHANIZATION IS DISCUSSED.

DEVELOPING COUNTRIES/ANIMAL POWER/FARM EQUIPMENT/CROP PRODUCTION

180

MICHAEL, A.M./KNIERIM, G.C./REESER, R.M.

1964

SIMPLE BULLOCK-DRAWN IMPLEMENTS FOR EFFICIENT IRRIGATION.

UNIVERSITY OF UDAIPUR, JOBNER, INDIA, COLLEGE OF AGRICULTURE, EXTENSION BULLETIN 1. 16 P.

DESIGN AND OPERATING INSTRUCTIONS ARE GIVEN FOR THE FOLLOWING IMPLEMENTS: BUCK SCRAPER, WOODEN FLOAT, A-FRAME RIDGER, V-DITCHER. PICTURES OF THE EQUIPMENT IN OPERATION ARE ALSO GIVEN.

DEVELOPING COUNTRIES/FARM EQUIPMENT/IRRIGATION/ANIMAL POWER

181

MILLER, H.

1975

CHARACTERISTICS OF SUCCESSFUL OPERATIONAL PROGRAMS.

CONFERENCE AND SEMINAR ON TECHNIQUES AND METHODOLOGIES FOR STIMULATING SMALL-SCALE LABOR-INTENSIVE INDUSTRIES IN DEVELOPING COUNTRIES, ATLANTA, GEORGIA, MARCH 10-14, SUMMARY OF PROCEEDINGS, 17 P.

A SUMMARY OF THE CRITERIA FOR SUCCESSFUL PROGRAMS IS PRESENTED. THE PROBLEM OF FINANCIAL BACKING IS PRESENTED. SOME CRITERIA ARE: APPROPRIATE INDUSTRIALIZATION (I.E. THE WHOLE CONCEPT NOT JUST APPROPRIATE TECHNOLOGY), BETTER MANAGEMENT TECHNIQUES THROUGH RESEARCH AND DEVELOPMENT, THE EXISTENCE OF A PROBLEM SOLVING NETWORK, REAPPLICATION OF PROJECTS, PROJECTS LINKED WITH THE MARKET PLACE, INNOVATIVE MEANS OF THE TRANSFER OF TECHNOLOGY, TRAINING, USE OF ADAPTIVE AND APPLIED RESEARCH AND DEVELOPMENT, SELECTION OF PROJECTS WITH SOME IMPACT, AND FINANCIAL BACKING (THE SHIFT FROM GOVERNMENT TO PRIVATE).

DEVELOPING COUNTRIES/INDUSTRIES/CONSULTING/ECONOMIC ASPECTS/TECHNOLOGY TRANSFER

182

MOAVENZADEH, F.

1974

THE CONSTRUCTION INDUSTRY IN THE DEVELOPING COUNTRIES.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SYMPOSIUM ON STRATEGIES FOR A.I.D. PROGRAMS IN SELECTED AREAS OF SCIENCE AND TECHNOLOGY, CAMBRIDGE, APRIL 1974, PROCEEDINGS, VOL. 3.

THE ROLE OF CONSTRUCTION IN DEVELOPMENT IS DISCUSSED. THE FACT THAT MOST DEVELOPING COUNTRIES HAVE SOME INDIGENOUS CONSTRUCTION INDUSTRY MAKES THE INDUSTRY AN ATTRACTIVE AREA FOR THE CREATION OF JOBS, CONSERVATION OF FOREIGN CURRENCY AND TRAINING. THE POSSIBILITY OF INTRODUCING VARIOUS MIXES OF LABOR AND CAPITAL TECHNOLOGIES AND THE USE OF STAGING STRATEGIES IN MAJOR PUBLIC WORKS CONSTRUCTION OFFER AN EXCELLENT OPPORTUNITY FOR TRANSFER AND ADAPTATION OF TECHNOLOGY.

DEVELOPING COUNTRIES/CONSTRUCTION/TECHNOLOGY TRANSFER/LABOR MIGRATION

183

MORAWETZ, D.

1974

EMPLOYMENT IMPLICATIONS OF INDUSTRIALIZATION IN DEVELOPING COUNTRIES: A SURVEY.

ECONOMIC JOURNAL 84(335):491-542.

NO ABSTRACT.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/LABOR

184

NATIONAL ACADEMY OF SCIENCES, WASHINGTON, D.C.

1973

FERROCEMENT: APPLICATIONS IN DEVELOPING COUNTRIES.

SAME AS AUTHOR. 90 P.

THIS REPORT RESULTS FROM 1972 MEETINGS OF THE AD HOC PANEL ON THE UTILIZATION OF FERROCEMENT IN DEVELOPING COUNTRIES. FERROCEMENT IS A HIGHLY VERSATILE FORM OF REINFORCED CONCRETE MADE OF WIRE MESH, SAND, WATER, AND CEMENT, WHICH POSSESSES UNIQUE QUALITIES OF STRENGTH AND SERVICEABILITY. THE APPLICATION OF FERROCEMENT TO BOAT BUILDING, FOOD STORAGE STRUCTURES, ROOFING, AND FOOD PROCESSING EQUIPMENT IS DISCUSSED.

CEMENT/BOATS/FOODS/BUILDING DESIGN/DEVELOPING COUNTRIES/CONSTRUCTION METHODS

185

NATIONAL INSTITUTE OF AGRICULTURAL ENGINEERING, BEDFORD, ENGLAND, OVERSEAS DEPARTMENT

1974

SIMPLE WATER PUMP.

SAME AS AUTHOR. 8 P.

DESIGN AND CONSTRUCTION METHODOLOGY ARE PRESENTED.

WATER PUMPING/GROUNDWATER/TOOLS/MACHINE DESIGN

186

NATIONAL SOLAR ENERGY SOCIETY, PARKVILLE, VICTORIA, AUSTRALIA

1975

SOLAR WATER HEATERS.

APPROPRIATE TECHNOLOGY 2(4):3.

A REPORT ON THE DEVELOPMENT OF AN EFFICIENT SOLAR WATER HEATER FOR HOME USE IS PRESENTED.

DEVELOPING COUNTRIES/SOLAR HEATING/SOLAR ENERGY/WATER

187

NATIONAL TECHNICAL INFORMATION SERVICE, SPRINGFIELD, VIRGINIA

1974

INFORMATION GUIDE TO ECONOMIC AND TECHNICAL INFORMATION ON TYPICAL INDUSTRIES.

SAME AS AUTHOR. AVAILABLE NTIS AS PR 190.

A LISTING OF AVAILABLE INDUSTRIAL PROFILES (A SERIES OF PROFESSIONAL ANALYSES INTENDED TO PROMOTE THE DEVELOPMENT OF PRIVATE INDUSTRY IN LESS DEVELOPED COUNTRIES) IS PRESENTED.

DEVELOPING COUNTRIES/INDUSTRIES/TECHNOLOGY TRANSFER

188

NAYUDAHMA, Y.

1975

CHROME TANNING FOR COTTAGE AND SMALL TANNERS.

VAIKUNTHBHAI MEHTA SHARAK TRUST, BOMBAY, INDIA, DOCUMENTATION BULLETIN 21:X-XIII.

THE UPGRADING OF TRADITIONAL TANNING METHODS TO WET BLUE-CHROME LEATHER PRODUCTIONS IS DISCUSSED.

DEVELOPING COUNTRIES/LEATHER/TECHNOLOGY TRANSFER/INDUSTRIES

189

NWOSU, E.

1975

SOME PROBLEMS OF APPROPRIATE TECHNOLOGY AND TECHNOLOGICAL TRANSFER.

DEVELOPING ECONOMICS (TOKYO) 13(1):82-93.

NO ABSTRACT.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/SOCIAL ASPECTS

190

NZIRAMASANGA, M.

1975

TECHNOLOGICAL TRANSFER BY MULTINATIONAL CORPORATIONS IN CENTRAL AFRICA.
PAPER PRESENTED AT

AFRICAN STUDIES ASSOCIATION ANNUAL MEETING, SAN FRANCISCO, OCTOBER 1975.

THIS REPORT TRACES THE HISTORY OF TECHNOLOGY TRANSFER TO ZAMBIA AND ZAIRE
FROM 1940 TO 1971. MUCH DISCUSSION IS CENTERED ON CAPITAL VS LABOR INTENSIVE
PRODUCTION. INPUT/OUTPUT, CAPITAL/LABOR RATIOS ARE DISCUSSED.

DEVELOPING COUNTRIES/COPPER/ZAMBIA/ZAIRE/INDUSTRIES/MINING/LABOR/TECHNOLOGY
TRANSFER/SOCIAL ASPECTS/ECONOMIC ASPECTS

191

O'CONNOR, B./WALD, R./WILLIAMS, T.

1967

A LOW COST SURVEYING LEVEL. PAPER INCLUDED AS COURSEWORK IN

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MECHANICAL ENGINEERING
DEPARTMENT, ENGINEERING PROJECTS LABORATORY, COURSE 2.67: DESIGN AND
EXPERIMENT. SPRING, 1967.

THE AUTHORS HAVE DEVELOPED A LOW COST SURVEYING LEVEL FOR USE IN THE DESIGN OF
SMALL IRRIGATION CANALS BY FARMERS IN UNDER-DEVELOPED COUNTRIES. THE REPORT
CONTAINS A CONSTRUCTION MANUAL, DESCRIPTION OF EXPERIMENTS, AND STATISTICAL
ANALYSIS OF TEST DATA.

DEVELOPING COUNTRIES/IRRIGATION/AGRICULTURE/TOOLS

192

ODIER, L.

1974

ROADS AND HIGHWAY TRANSPORTATION IN DEVELOPING COUNTRIES.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SYMPOSIUM ON STRATEGIES FOR A.I.D.
PROGRAMS IN SELECTED AREAS OF SCIENCE AND TECHNOLOGY, CAMBRIDGE, APRIL 1974,
PROCEEDINGS, VOL. 2, 58 P.

THE AUTHOR DRAWS ATTENTION TO THE SPECIAL ASPECTS OF HIGHWAY TRANSPORTATION
PROBLEMS IN DEVELOPING COUNTRIES. FACTORS CONSIDERED INCLUDE TRAFFIC
COMPOSITION, TRAFFIC DENSITY, CLIMATE, MATERIALS AVAILABILITY, ECONOMIC
FACTORS, AND THE EFFECT OF GOVERNMENT REGULATIONS. INTEGRATION OF HIGHWAY PLANS
WITH OTHER PROJECTS IS EMPHASIZED.

GOVERNMENT/DEVELOPING COUNTRIES/ROADS/ECONOMIC ASPECTS/TRANSPORTATION

193

ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT (OECD), PARIS

1972

CHOICE AND ADAPTATION OF TECHNOLOGY IN DEVELOPING COUNTRIES: AN OVERVIEW
OF MAJOR POLICY ISSUES.

REVIEW OF THE DISCUSSION SESSIONS OF THE CONFERENCE ON CHOICE AND ADAPTATION OF TECHNOLOGY IN DEVELOPING COUNTRIES, NOVEMBER 7-9, 1972, PARIS. 240 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/TECHNOLOGY TRANSFER

194

ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT (OECD), PARIS

1975

LOW-COST TECHNOLOGY: AN INQUIRY INTO OUTSTANDING POLICY ISSUES.

SAME AS AUTHOR. 118 P.

PRESENTS A PRELIMINARY SYNTHESIS OF OPINION, VERBATIM PROCEEDINGS OF THE CONCLUDING SESSION, AND OUTLINES OF THE ORIGINAL PAPERS. THE SYNTHESIS FIRST DEFINES LOW-COST TECHNOLOGY IN TERMS OF EXAMPLES AND DISCUSSES THE RELATIONSHIP OF OTHER TERMS (APPROPRIATE, INTERMEDIATE AND SOFT TECHNOLOGY). DEVELOPMENT OF THESE ALTERNATIVE TECHNOLOGIES IS ATTRIBUTED TO THE FAILURE OF PREVIOUS PLANS. INDIA IS EXEMPLIFIED AS A FORERUNNER IN THIS FIELD IN HER ATTEMPT TO ESTABLISH TOTAL INDEPENDENCE. PROBLEMS OF ACCEPTANCE OF 'SECOND RATE' TECHNOLOGY ARE DISCUSSED. IDENTIFYING THE NEED AND THE DEMAND FOR INNOVATION AND THE ROLE OF THE PROFIT MOTIVE ARE DISCUSSED. REMAINING SECTIONS DEAL WITH COST-BENEFIT RELATIONSHIPS OF INFORMATION STORAGE AND DISSEMINATION, THE ROLE OF THE UNIVERSITY, ENTREPRENEURSHIP, AND GOVERNMENT POLICIES. CONFERENCE PAPERS DISCUSS INNOVATIONS AND PROJECTS IN LOW-COST TECHNOLOGY INCLUDING WATER COLLECTION, SOLAR ENERGY, MACHINERY, PROCESSING PLANTS, ENTREPRENEURSHIP AND CONSULTING.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/AGRICULTURE/INDUSTRIES/FOODS/WATER/ENTREPRENEURSHIP/CATCHMENTS/WATER STORAGE/GOVERNMENT/COST-BENEFIT ANALYSIS/SOLAR ENERGY/CONSULTING

195

ORTIZ, E.

1975

NEW PANTABANGAN IN TRANSITION.

SMALL INDUSTRY JOURNAL 8(1):15-18.

THIS PAPER DESCRIBES THE RESETTLEMENT OF THE VILLAGE PANTABANGAN, THE PHILIPPINES, NECESSITATED BY THE PAMPANGA RIVER DAM. THE RESETTLEMENT BROUGHT ABOUT A FORCED NEED TO CHANGE TRADITIONAL OCCUPATIONS. THE GOVERNMENT PROVIDED CORE HOUSING, THE IMPLEMENTATION OF TRAINING PROGRAMS, COOPERATIVES, FINANCIAL ASSISTANCE, AND SMALL INDUSTRY DEVELOPMENT IS DISCUSSED.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/COOPERATIVES/ENTREPRENEURSHIP/EDUCATION

196

PACK, H.

1976

SUBSTITUTION OF LABOR FOR CAPITAL IN KENYAN MANUFACTURING.

ECONOMIC JOURNAL 86(341):45-58.

A MAJOR CONCERN TO LDCS HAS BEEN THE GROWING LEVEL OF URBAN UNEMPLOYMENT, PARTICULARLY DISAPPOINTING HAS BEEN THE FAILURE OF MANUFACTURING EMPLOYMENT TO GROW AS FAST AS INDUSTRIAL OUTPUT. ECONOMICALLY FEASIBLE CONDITIONS FOR SUBSTITUTION OF LABOR FOR CAPITAL ARE EXPLORED.

DEVELOPING COUNTRIES/LABOR/ECONOMIC ASPECTS/INDUSTRIES/KENYA

197

PARIKH, K.S.

1968

PLANNING FOR GROWTH: MULTISECTORAL INTERTEMPORAL MODELS APPLIED TO INDIA.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY PRESS, CAMBRIDGE. 208 P.

NO ABSTRACT.

DECISION MODELS/FORECASTING/INDIA

198

PARIKH, K.S. ET AL

1974

PERFORMANCE APPROACH TO COST REDUCTION IN BUILDING CONSTRUCTION.

GOVERNMENT PRESS, TRIVANDRUM, INDIA.

THE MAIN OBJECTIVES OF THE EXPERT COMMITTEE'S WORK WAS TO EVALUATE THE COST EFFECTIVENESS OF DIFFERENT FOUNDATION, WALLING, ROOFING AND ANCILLARY BUILDING COMPONENTS AND METHODS IN TERMS OF THE LOCAL SITUATION IN KERALA, INDIA. IT IS QUITE POSSIBLE TO CONVERT MANY OF THE EXAMPLES TO OTHER AREAS ALSO. THE REPORT PROVIDES A BROAD BRUSH APPROACH TO SUCH QUESTIONS AS THERMAL INSULATION RELATED TO ROOF AND WALL THICKNESS, MATERIALS, AND STRUCTURAL FORM. THE ADVANTAGES AND DISADVANTAGES OF TRADITIONAL BUILDING MATERIALS ARE DISCUSSED.

DEVELOPING COUNTRIES/BUILDING DESIGN/CONSTRUCTION/INDIA

199

PARKER, D.

1975

APPROPRIATE INDUSTRIALIZATION FOR DEVELOPING COUNTRIES. PAPER PRESENTED AT

CONFERENCE AND SEMINAR ON TECHNIQUES AND METHODOLOGIES FOR STIMULATING SMALL-SCALE LABOR-INTENSIVE INDUSTRIES IN DEVELOPING COUNTRIES, ATLANTA, GEORGIA, MARCH 10-14, SUMMARY OF PROCEEDINGS, 17 P.

A DECADE AGO INDUSTRIALIZATION WAS ACCEPTED AS VIRTUALLY SYNONYMOUS WITH MODERNIZATION AND DEVELOPMENT, BUT MANY OF THOSE WHO ONCE HELD HIGH HOPES FOR THE FRUITS OF INDUSTRIALIZATION HAVE BECOME DISILLUSTIONED. PICTURES OF THE EARTH FROM THE MOON SHOW HOW FINITE IT AND CONSEQUENTLY OUR RESOURCES ARE. DEVELOPMENT MUST INCLUDE EMPLOYMENT GENERATION. WE MUST DETERMINE MEANS TO ENABLE THE POOR MAJORITY TO PARTICIPATE ACTIVELY IN THE NATION'S ECONOMY. ADVANTAGE MUST BE TAKEN OF THE WORLD'S PROBLEM SOLVING NETWORK--THE UNIVERSITY.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/LABOR/ENTREPRENEURSHIP/CONSULTING/SHOPS

200

PARRY, J.P.M.

1975

INTERMEDIATE TECHNOLOGY BUILDING.

APPROPRIATE TECHNOLOGY 2(3):6-8.

DISCUSSES WHAT CONSIDERATIONS SHOULD BE MADE IN DEVELOPING WHAT IS APPROPRIATE TO THE NEEDS OF A CULTURE. THE INTERMEDIATE TECHNOLOGY DEVELOPMENT GROUP BRICK-WORKS IN ASOKWA, GHANA, IS SPECIFICALLY CITED AS A GOOD EXAMPLE OF THE APPLICATION OF THESE PRINCIPLES.

DEVELOPING COUNTRIES/GHANA/INDUSTRIES/BUILDING DESIGN/COST-BENEFIT ANALYSIS/BRICKS

201

PARRY, J.P.M.

1975

THE BRICK INDUSTRY: ENERGY CONSERVATION AND SCALE OF OPERATIONS.

APPROPRIATE TECHNOLOGY 2(1):24-26.

DISCUSSES THE USE OF INFLAMMABLE WASTE GASES FOR FUEL IN CERAMIC PROCESSES. CENTRALIZED VS DECENTRALIZED BRICK INDUSTRIES ARE DISCUSSED WITH EMPHASIS ON TRANSPORTATION COSTS. THE ANONMOUTH BRICK-WORKS IN SOUTH AFRICA IS USED AS AN EXAMPLE.

DEVELOPING COUNTRIES/AFRICA/BRICKS/INDUSTRIES/INDUSTRIAL DESIGN/ALTERNATIVE FUELS/COST-BENEFIT ANALYSIS

202

PATEL, S.J.

1974

THE TECHNOLOGY DEPENDENCE OF DEVELOPING COUNTRIES.

JOURNAL OF MODERN AFRICAN STUDIES 12(1):1-18.

NO ABSTRACT.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/ECONOMIC ASPECTS/TECHNOLOGY TRANSFER

203

PATEL, I.G.

1975

WHAT DO THE DEVELOPING COUNTRIES REALLY WANT?

ACTION UNDP, NEW YORK. SEPTEMBER-OCTOBER 1975. P. 2-3.

DESCRIBES THE KIND OF ASSISTANCE DEVELOPING COUNTRIES NEED AND DESIRE. A DISCUSSION OF NATIONAL SOVEREIGNTY VS A NEED FOR TECHNOLOGY TRANSFER IS PRESENTED.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/POLITICAL ASPECTS/TECHNOLOGY TRANSFER/ECONOMIC ASPECTS/NATURAL RESOURCES

204

PEPKINS, F.F.

1974

EVOLUTION OF MODELING IN WATER RESOURCE PLANNING.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SYMPOSIUM ON STRATEGIES FOR A.I.D. PROGRAMS IN SELECTED AREAS OF SCIENCE AND TECHNOLOGY, CAMBRIDGE, APRIL 1974, PROCEEDINGS, VOL. 2, 58 P.

THREE ISSUES REGARDING THE USE OF MATHEMATICAL MODELS EMBODYING MULTI-OBJECTIVE INVESTMENT CRITERIA IN WATER RESOURCE PLANNING ARE DISCUSSED. THE VALUE OF MATHEMATICAL MODELING LIES IN THE ABILITY TO FORCE THE PLANNER TO ASK RELEVANT QUESTIONS AND SEEK QUANTITATIVE INFORMATION FOR USE IN THE DECISION MAKING PROCESS. DUE TO THE COMPLEX NATURE OF DEVELOPING COUNTRIES' WATER RESOURCE PROBLEMS, MORE MATHEMATICAL MODELS ARE LIKELY TO BE USED. PITFALLS OF USING MATHEMATICAL MODELS ARE DISCUSSED.

DEVELOPING COUNTRIES/DECISION MODELS/WATER/RESOURCE MANAGEMENT

205

PETERSON, R.E./SEO, K.K.

1972

PUBLIC ADMINISTRATION PLANNING IN DEVELOPING COUNTRIES, A BAYFSIAN DECISION THEORY APPROACH.

POLICY SCIENCES 3(3):371-378.

ASSUMING THAT THERE ARE TWO COMPETING PROJECTS, THIS PAPER ANSWERS THE QUESTION: WHAT FURTHER ANALYSIS MUST BE UNDERTAKEN FOR THE PLANNER TO CHOOSE BETWEEN THE PROJECTS? A METHOD OF DETERMINING PROJECT INITIATION AND IMPLEMENTATION PROBABILITIES IS EXPLAINED. BAYES LAW IS THEN USED TO DETERMINE THE EXPECTED BENEFIT OF EACH PROJECT.

DEVELOPING COUNTRIES/DECISION MODELS/COST-BENEFIT ANALYSIS

206

PORTOLA INSTITUTE, MENLO PARK, CALIFORNIA

1975

ENERGY PRIMFR: SOLAR, WATER, WIND AND BIOFUELS.

SAME AS AUTHOR. 200 P.

A COMPREHENSIVE PUBLICATION ON SOLAR, WATER, WIND AND BIOFUELS. DISCUSSES BASIC PRINCIPLES AND PERFORMANCE CHARACTERISTICS OF SELECTED MECHANISMS UTILIZING THESE PRINCIPLES. CONTAINS A BIBLIOGRAPHY FOR FURTHER INFORMATION.

SOLAR ENERGY/AGRICULTURAL WASTE/ENERGY/WIND POWER/BIOFUELS/BIBLIOGRAPHIES/WATER POWER

207

POTTS, E.R.

1975

A SAFE CHARCOAL ROOM HEATER.

APPROPRIATE TECHNOLOGY 2(1):23.

A DESIGN UTILIZING AN UNMODIFIED BRASIER AS A ROOM HEATER IS DESCRIBED.

ENERGY/DEVELOPING COUNTRIES/AFRICA

208

POTTS, E.P.

1975

AN EFFICIENT, CHEAP INCINERATOR.

APPROPRIATE TECHNOLOGY 2(1):21.

THE DESIGN FOR AN INCINERATOR MADE OF BRICK IS PRESENTED.

DEVELOPING COUNTRIES/REFUSE/BRICKS/CONSTRUCTION METHODS

209

POWELL, J.W.

1975

THIRD ANNUAL REVIEW: 1974-1975.

UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI, GHANA, TECHNOLOGY CONSULTANCY CENTRE.

A BRIEF HISTORY AND STATEMENT OF GOALS AND A DETAILED DESCRIPTION OF FUNDING ARE GIVEN. THE SUCCESSES OF THE FOLLOWING PROJECTS ARE DISCUSSED: AIR CONDITIONING REPAIRS AT KORLE BU HOSPITAL, FEEDER ROAD STUDIES, SOAP PILOT PLANT, STEEL BOLT PRODUCTION UNIT, PLANT CONSTRUCTION UNIT, WEAIVING PRODUCTION UNIT, METAL PRODUCTS DESIGN UNIT, CERAMICS PRODUCTION UNIT, AGRICULTURE PRODUCTION UNIT, ARCHITECTURE AND ENGINEERING PRODUCTION UNITS, VILLAGE CRAFT DEVELOPMENT CENTER, GLASS BEAD MAKING, BRASS CASTING, PALM OIL PLANTATIONS, BLACKSMITH WORKSHOP, AND COCONUT CHARCOAL.

DEVELOPING COUNTRIES/GHANA/ENTREPRENEURSHIP/CONSULTING/INDUSTRIAL DESIGN/ECONOMIC ASPECTS/FARM EQUIPMENT/GLASS/PALM OIL/ROADS

210

RANA, A.S.

1975

A SIMPLE MANUAL MAIZE SHELLING DEVICE.

APPROPRIATE TECHNOLOGY 2(1):9-10.

DEVELOPING COUNTRIES/CROP PRODUCTION/HARVESTING/AGRICULTURE/COST-BENEFIT ANALYSIS/SOCIAL ASPECTS/FARM EQUIPMENT/MACHINE DESIGN/ECONOMIC ASPECTS/MAIZE

211

RANIS, G. ED.

1973

THE UNITED STATES AND THE DEVELOPING ECONOMIES.

NORTON AND COMPANY, NEW YORK, REVISED EDITION. 174 P.

NO ABSTRACT.

ECONOMIC ASPECTS/DEVELOPING COUNTRIES/POLITICAL ASPECTS

212

REINKE, W.A.

1974

THE ROLE OF OPERATIONS RESEARCH IN POPULATION PLANNING.

OPERATIONS RESEARCH 18(6):1099-1111.

PRODUCTION MIX AND WAREHOUSE MODELS ARE NOT SUITABLE FOR POPULATION PLANNING BECAUSE OF THE INTERACTION OF FAMILY PLANNING, HEALTH AND ECONOMIC DEVELOPMENT. NATIONAL GOALS VS PRIVATE FAMILY DECISIONS ARE DISCUSSED. THE PROBLEM IS SIMPLIFIED TO AN ALLOCATION PROBLEM WITH AN ILLUSTRATIVE EXAMPLE PROVIDED. A MORE COMPLEX ANALYSIS IS PRESENTED IN GENERAL.

DEVELOPING COUNTRIES/DECISION MODELS/SOCIAL ASPECTS/POPULATION CONTROL

213

REYNOLDS, G.F.

1975

THE GENERATION OF METHANE FROM WASTE MATERIALS.

APPROPRIATE TECHNOLOGY 2(2):11-13.

DISCUSSES DESIGN AND CAPABILITIES OF ANAEROBIC DIGESTORS UTILIZING BIOFUELS. DISCUSSES THE GENERATION PROCESS AS WELL AS THE ULTIMATE CARBON/NITROGEN RATIO OF THE FUEL. PRESENTS TWO DESIGNS, ONE OF BRICK (STANDARD), THE OTHER A METAL CYLINDER. SUB-OPTIMAL PERFORMANCE UNITS ARE ALSO MENTIONED.

DEVELOPING COUNTRIES/EXCREMENT/ANAEROBIC DIGESTORS/BIOFUELS

214

RHA, C.K.

1974

FOOD TECHNOLOGY AND FOOD FABRICATION.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SYMPOSIUM ON STRATEGIES FOR A.I.D. PROGRAMS IN SELECTED AREAS OF SCIENCE AND TECHNOLOGY, CAMBRIDGE, APRIL 1974, PROCEEDINGS, VOL. 2, 58 P.

THE CONSIDERATION OF CULTURE, TASTE, AND TEXTURE WHEN TRANSFERRING FOOD TECHNOLOGIES IS DISCUSSED. FOR RAW MATERIAL, INDIGENOUS SOURCES WHICH MAY BE UNDERUTILIZED, OR UNCONVENTIONAL SOURCES SUCH AS GIL MEAL, GLUTEN BY-PRODUCT, ETC. SHOULD BE USED. USING THE SELECTED RAW MATERIAL, FOOD MAY BE STRUCTURED IN ANY FORM THROUGH FABRICATION. CAREFUL SELECTION OF THE OPTIMUM PROCESSING METHOD IS DISCUSSED.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/COST-BENEFIT ANALYSIS/FOODS

215

RHOAD, D.

1975

NICARAGUA'S VAMPIRE BAT CONTROL PROGRAM SHOWS HOW.

WAR ON HUNGER 10(2):4-9.

DESCRIBES NICARAGUA'S VAMPIRE BAT CONTROL PROGRAM WHICH CONSISTS OF TRAVELING TEAMS THAT USE DIPHENADIONE, AN ANTICOGULANT, AS A MEANS OF KILLING THE BATS THAT POSE A MENACE TO LIVESTOCK AND HUMANS. THE LARGE SUCCESS OF THE PROGRAM IS DISCUSSED.

DEVELOPING COUNTRIES/DISEASE CONTROL/LIVESTOCK/CATTLE

216

RIFKIN, S.B.

1975

THE CHINESE MODEL FOR SCIENCE AND TECHNOLOGY: ITS RELEVANCE FOR OTHER DEVELOPING COUNTRIES.

TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE 7(3):257-271.

THIS PAPER EXAMINES GROWTH OF AN INDIGENOUS SCIENTIFIC AND TECHNOLOGICAL CAPABILITY THROUGH SELF RELIANCE. CHINESE POLICY FOCUSES ON 3 MAJOR AREAS: CHOICE OF TECHNOLOGIES, RURAL INDUSTRIALIZATION TO BALANCE AGRICULTURAL AND INDUSTRIAL GROWTH, AND MOBILIZATION OF MANPOWER RESOURCES TO RESEARCH AND IMPLEMENT TECHNOLOGIES FOR INCREASED GROWTH. THE INAPPROPRIATENESS OF TRANSFERRING CHINESE DEVELOPMENT STRATEGY TO OTHER DEVELOPING NATIONS IS DISCUSSED.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/TECHNOLOGY TRANSFER/POLITICAL ASPECTS/CHINA

217

ROBINSON, K.

1975

CLOTH DYES FROM NATURAL SOURCES.

APPROPRIATE TECHNOLOGY 2(4):31-32.

THERE ARE MANY NATURAL SOURCES OF DYE IN THE COUNTRYSIDE WHICH CAN BE EXPLOITED AT LITTLE COST, BUT TO PREPARE THEM REQUIRES SPECIAL KNOWLEDGE AND SKILL. CRITERIA FOR A NATURAL DYE TO BE SATISFACTORY AND METHODS FOR GENERATING UP TO 16 DIFFERENT SHADES ARE PRESENTED.

DEVELOPING COUNTRIES/TEXTILES

218

ROYAL TROPICAL INSTITUTE, AMSTERDAM, THE NETHERLANDS
1975

SOCIALLY APPROPRIATE TECHNOLOGY FOR DEVELOPMENT.

SAME AS AUTHOR. 8 P.

THIS NEWSPAPER WAS PRINTED FOR THE INTERNATIONAL FAIR OF TECHNOLOGICAL INNOVATIONS AND TECHNOLOGY TRANSFER, SEPTEMBER 6-14, 1975, IN BELGRADE. THE MISSION AND FUNCTIONS OF THE TECHNISCHE ONTWIKKELING ONTWIKKELINGS LANDEN (TOOL), THE NETHERLANDS ORGANIZATION FOR APPLIED SCIENTIFIC RESEARCH (TNO), THE ROYAL TROPICAL INSTITUTE, AND DHV CONSULTING ENGINEERS, ALL OF THE NETHERLANDS, ARE PRESENTED.

DEVELOPING COUNTRIES/CONSULTING/FARM EQUIPMENT/DISEASE CONTROL/METAL WORKING/
TECHNOLOGY TRANSFER

219

RUSK, D.

1975

BANQUET ADDRESS.

CONFERENCE AND SEMINAR ON TECHNIQUES AND METHODOLOGIES FOR STIMULATING SMALL-SCALE LABOR-INTENSIVE INDUSTRIES IN DEVELOPING COUNTRIES, ATLANTA, GEORGIA, MARCH 10-14, SUMMARY OF PROCEEDINGS, 17 P.

PERCENTAGES OF THE U.S. GNP DEVOTED TO FOREIGN AID ARE PRESENTED. A WARNING REGARDING THE PERILS OF ISOLATIONISM IS GIVEN. THE AUTHOR FEELS THAT THE AID-RECEIVING COUNTRY HAS OBLIGATIONS TO THE DONATING COUNTRY. THE IMPORTATION OF CAPITAL IS DISCUSSED. TECHNOLOGY TRANSFER IS PRESENTED AS A TWO-WAY STREET AND THE NEED FOR THOROUGH MARKET ANALYSIS IS DESCRIBED. THE CONTRIBUTION OF PRIVATE INVESTMENT IS ASSESSED.

DEVELOPING COUNTRIES/ECONOMIC ASPECTS/TECHNOLOGY TRANSFER

220

SAGASTI, F.R.

1972

MANAGEMENT SCIENCES IN AN UNDERDEVELOPED COUNTRY: THE CASE OF OPERATIONS RESEARCH IN PERU.

MANAGEMENT SCIENCE 19(2):121-131.

THE DEVELOPMENT OF MANAGEMENT SCIENCE IN PERU WITH PARTICULAR REFERENCE TO THE INTRODUCTION AND DIFFUSION OF OPERATIONS RESEARCH IN THE 1960S. THE REACTIONS OF GOVERNMENT OFFICIALS AND EXECUTIVES IN PRIVATE INDUSTRY TO MANAGEMENT SCIENCE ARE ANALYZED. THE EDUCATIONAL AND INSTITUTIONAL ASPECTS OF THE FUTURE ARE ALSO EXAMINED. FINALLY THE METHODOLOGICAL ASPECTS OF OPERATIONS RESEARCH WORK IN UNDERDEVELOPED COUNTRIES IS EXAMINED.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/TECHNOLOGY TRANSFER/PERU

221

SAIF-UL, R.M.

1967

SOLAR ENERGY UTILIZATION IN DEVELOPING COUNTRIES.

SOLAR ENERGY 11(2):98-108.

NO ABSTRACT.

DEVELOPING COUNTRIES/SOLAR ENERGY

222

SALOMON, G.

1970

LAND REFORM AND THE PROMOTION OF SMALL SCALE INDUSTRIES AND SERVICES THROUGH RURAL MULTI-PURPOSE COOPERATIVES.

LAND REFORM 1:87-89.

THE NEED FOR DIVERSIFICATION IN LAND REFORM PROGRAMS IS DISCUSSED. LAND REDISTRIBUTION MUST ENTAIL PROVISIONS FOR SUPPORTIVE SMALL INDUSTRIES FOR REPAIR OF NEWLY ACQUIRED AGRICULTURAL IMPLEMENTS. AS LONG AS THE HANDICRAFT SECTOR IS NOT SUFFICIENTLY DEVELOPED TO ESTABLISH ITS OWN COOPERATIVE, IT IS IN THE INTEREST OF LAND OWNERS TO PUT THEIR EXISTING COOPERATIVE INSTITUTIONS AT THE DISPOSAL OF THE HANDICRAFTS SECTOR, AND BY DOING SO, FACILITATE AN EXCHANGE OF GOODS AND SERVICES FOR THE MUTUAL BENEFIT OF ALL.

INDUSTRIES/AGRICULTURE/COOPERATIVES

223

SAVINO, J.

1973

WIND ENERGY CONVERSION SYSTEMS. IN WORKSHOP ON WIND ENERGY CONVERSION SYSTEMS, WASHINGTON, D.C., JUNE 11-13, PROCEEDINGS.

NATIONAL SCIENCE FOUNDATION, WASHINGTON, D.C. 267 P. (NSF-RA/4-73-006) AVAILABLE NTIS AS PB-231 341/GID.

NO ABSTRACT.

ENERGY/WIND POWER

224

SCHLEE, T.W.

1974

APPROPRIATE TECHNOLOGY: SOME CONCEPTS, SOME IDEAS, AND SOME RECENT EXPERIENCES IN AFRICA.

EAST AFRICAN JOURNAL OF RURAL DEVELOPMENT 7(74):77-108.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/AFRICA

225

SCHULER, A.

1975

MACHINERY FOR THE SMALL FARMER.

WORLD HUNGER 10(2):15-17.

THE PROBLEMS OF TIMING AS RELATED TO CROP YIELDS PROMOTES THE NEED FOR SMALL-SCALE, LOW-COST FARM EQUIPMENT. THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT-INTERNATIONAL RICE RESEARCH INSTITUTE CONTRACT IS DISCUSSED AND SOME OF THE EQUIPMENT RESULTING FROM THIS CONTRACT IS PRESENTED. DEVICES SHOWN ARE THE THREE ROW PADDY WEEDER, SIX ROW PADDY SEEDER, AXIAL FLOW THRESHER, AND BELLOWS PUMP.

DEVELOPING COUNTRIES/FARM EQUIPMENT/SOWING/THRESHING/IRRIGATION/ANIMAL POWER

226

SCHUMACHER, E.F.

1974

SMALL IS BEAUTIFUL.

SPHERE BOOKS LTD., LONDON. 255 P.

AS THE AUTHOR PUTS IT, THIS BOOK IS 'A STUDY OF ECONOMICS AS IF PEOPLE MATTERED'. THIS BOOK IS THE BASIC PRIMER FOR INTERMEDIATE TECHNOLOGY. THE ORIGINAL TERM INTERMEDIATE TECHNOLOGY IS DEFINED. THE EFFECTS ON NON-REPLACEABLE RESOURCES, AND THE USE OF NUCLEAR ENERGY ON WORLD ECOLOGY ARE DISCUSSED. SOCIAL AND ECONOMIC PROBLEMS CALLING FOR INTERMEDIATE TECHNOLOGY ARE DETAILED. INDIA'S PROBLEM IS EXEMPLIFIED. APPLICATIONS OF INTERMEDIATE TECHNOLOGY WITH RESPECT TO LARGE INDUSTRY ARE PRESENTED. THE QUESTION OF PRIVATE VS PUBLIC OWNERSHIP IS DISCUSSED. APPLICATIONS IN SOCIALISM ARE PRESENTED.

DEVELOPING COUNTRIES/INDIA/ENERGY/ECONOMIC ASPECTS/ECOLOGY/NATURAL RESOURCES/SOCIAL ASPECTS/GOVERNMENT

227

SCOTT, O.

1975

ANIMAL POWER BOOSTS NEW CROP PRODUCTION.

APPROPRIATE TECHNOLOGY 2(1):7-9.

CONVERSION OF FARMERS FROM CROPS WHICH PRODUCE ILLEGAL DRUGS TO THOSE BENEFICIAL TO THE COMMUNITY IS ENABLED BY A POWER GEAR UNIT THAT UTILIZES ANIMAL POWER. DESIGN ASPECTS AND APPLICATIONS ARE PRESENTED. MANUFACTURING TECHNIQUES ARE DISCUSSED.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/ANIMAL POWER/AGRICULTURE/POLAND/MACHINE DESIGN/FARM EQUIPMENT/CROP PRODUCTION

228

SEERS, D.

1973

WHAT ARE WE TRYING TO MEASURE?

DEVELOPMENT DIGEST 11(2):109-119.

NO ABSTRACT.

SOCIAL ASPECTS/TECHNOLOGY MEASUREMENT

229

SHARMA, K.J.

1973

A NEW INQUIRING SYSTEM FOR TECHNOLOGY TRANSFER AND ITS ROLE IN PLANNING AND POLICY MAKING.

PORTLAND STATE UNIVERSITY, OREGON, SYSTEM SCIENCE PROGRAM 760-2960. 232 P.

NO ABSTRACT.

TECHNOLOGY TRANSFER

230

SIMPSON, J.

1975

COOPERATIVE FOOD MARKETING IN CHILE.

APPROPRIATE TECHNOLOGY 2(4):14-15.

THERE IS A GREAT NEED FOR FOOD COOPERATIVES IN DEVELOPING COUNTRIES. THE OPERATION OF THE UNICOOP IN SANTIAGO, CHILE, IS DISCUSSED. IT HAS BEEN FOUND THAT THIS METHOD PROVIDES A GOOD, INEXPENSIVE SOLUTION TO THE PROBLEM OF GETTING FOOD TO THE POOR.

DEVELOPING COUNTRIES/COOPERATIVES/FOODS/CHILE

231

SLAMECKA, V.

1975

APPROACHES TO ASSESSING THE EFFECTIVENESS OF SCIENTIFIC KNOWLEDGE TRANSFER.

TECHNOS 4(2):23-32.

SCIENTIFIC AND TECHNICAL KNOWLEDGE IS SEEN AS PRESENTLY BECOMING A DOMINANT ELEMENT IN THE STREAM OF ENTITIES COMPRISING INTERNATIONAL TECHNOLOGY TRANSFER. THE PAPER DISCUSSES APPROACHES TO ASSESSING THE EFFECTIVENESS OF SUCH KNOWLEDGE TRANSFER FROM THE VIEWPOINTS OF DEVELOPING AND ADVANCED COUNTRIES, BOTH ILLUSTRATED ON THE EXAMPLE OF THE SOVIET UNION. CURRENT ATTEMPTS AT THE DEVELOPMENT OF THEORETICAL MEASURES OF INFORMATION TRANSFER EFFECTIVENESS ARE ALSO BRIEFLY DESCRIBED.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/USSR

232

SOMMERAUER, W.

1968

AFGHANISTAN: SMALL AGRICULTURAL IMPLEMENTS AND FARM TOOLS, REPORT TO THE GOVERNMENT.

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME. 20 P.

COVERS THE PERIOD FROM JUNE 1952, TO APRIL 1953. THE AUTHOR WAS DISPATCHED FROM FAO, IN COOPERATION WITH THE GOVERNMENT OF AFGHANISTAN, WITH FOUR TONS OF SMALL AGRICULTURAL EQUIPMENT. THE AUTHOR'S GOAL WAS TO AFFECT THE TRANSFER OF THIS SIMPLE TECHNOLOGY TO LOCAL FARMERS. THE WORK FELL INTO TWO CATEGORIES: DEMONSTRATION AND INSTRUCTION ON SMALL FARM IMPLEMENTS, AND STUDIES AND DEMONSTRATION OF ANIMAL DRAWN EQUIPMENT. THE PROVINCES OF KABUL, KATAGHAN, AND MAZAR-I-SHARIF WERE COVERED. THE EXTENT TO WHICH AFGHAN AGRICULTURE SHOULD BE MECHANIZED IS DISCUSSED.

DEVELOPING COUNTRIES/AGRICULTURE/FARM EQUIPMENT/AFGHANISTAN/TOOLS/TECHNOLOGY TRANSFER

233

SOYODE, A.

1974

PUBLIC INVESTMENT EVALUATION: A HEURISTIC APPROACH.

NIGERIAN JOURNAL OF ECONOMIC AND SOCIAL STUDIES 16(2):217-234.

TRADITIONAL MONETARY EVALUATIONS OF COMPLEX PROJECTS ARE INADEQUATE. THIS PAPER TAKES A SYSTEMS VIEW OF THE PROBLEM. A HEURISTIC APPROACH IS PRESENTED THAT PROVIDES A CONVENIENT AND LOGICAL WAY OF WEIGHING THE ATTRACTIVENESS OF A PROJECT'S PECUNIARY CHARACTERISTICS RELATIVE TO OTHER NON-PECUNIARY INVESTMENT GUIDELINES ADOPTED BY A PUBLIC CORPORATION.

DEVELOPING COUNTRIES/DECISION MODELS/ECONOMIC ASPECTS/

234

SPENCE, R.

1974

LIME AND ALTERNATIVE CEMENTS: PROCEEDINGS OF A ONE DAY CONFERENCE.

INTERMEDIATE TECHNOLOGY PUBLICATIONS LTD., LONDON. 164 P.

FOR SIMPLE USES THE HIGH QUALITY AND STRENGTH OF PORTLAND CEMENT ARE UNNECESSARY AND THE SEARCH SHOULD BE ON FOR A SIMPLE PROCESS FOR MANUFACTURING A BASIC ALTERNATIVE CEMENT SO THAT BASIC VILLAGE BUILDINGS CAN BE ERECTED BY THE LOCAL COMMUNITY AND INCREASE EMPLOYMENT. THE PAPERS RANGE OVER A WIDE AREA, STARTING WITH THE AIMS OF INTERMEDIATE TECHNOLOGY AND THE WORK OF THE INTERMEDIATE TECHNOLOGY DEVELOPMENT GROUP, AND ENDING WITH APPROACHES TO THE MANUFACTURING PROCESS ITSELF.

DEVELOPING COUNTRIES/CEMENT/CONSTRUCTION MATERIALS

235

SPENCE, R.

1975

BRICK MANUFACTURE USING THE BULL'S TRENCH KILN.

APPROPRIATE TECHNOLOGY 2(1):12-14.

THE BASIC DESIGN AND FUNCTIONING OF A HOFFMAN (BULL'S TRENCH) KILN IS DISCUSSED. HAND-MADE AND MACHINE PRODUCED BRICK ARE COMPARED, AND INDUSTRIAL ECONOMICS ARE DISCUSSED.

DEVELOPING COUNTRIES/INDUSTRIES/INDIA/BUILDING DESIGN/BRICKS/COST-BENEFIT ANALYSIS/BRICKS

236

SPOTTSWOOD, J./SCANNELL, D.

1967

FINAL REPORT: EDUCATIONAL STRATEGY FOR DEVELOPING COUNTRIES. PAPER INCLUDED AS COURSEWORK IN

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MECHANICAL ENGINEERING DEPARTMENT, ENGINEERING PROJECTS LABORATORY, COURSE 2.67: DESIGN AND EXPERIMENT. SPRING, 1967.

DEFINES LEVELS OF TEACHING COMPETENCE. THE RATIO OF TEACHERS' SALARIES TO AVERAGE INCOME IS DISCUSSED WITH REGARD TO THE PROBLEM OF EDUCATIONAL COST. EDUCATIONAL TELEVISION (ETV) IS PRESENTED AS A GOOD SOLUTION TO IMMEDIATE EDUCATIONAL PROBLEMS. SOME SUCCESSFUL ETV PROGRAMS ARE PRESENTED. DISCUSSION CONCERNING THE METHOD OF DISSEMINATION OF EDUCATIONAL MATERIAL RESULTS IN A MOBILE VAN CONCEPT.

DEVELOPING COUNTRIES/EDUCATION/MEXICO/BRAZIL/COLOMBIA/BOLIVIA/CONSULTING

237

STALEY, E.

1971

PLANNING OCCUPATIONAL EDUCATION AND TRAINING FOR DEVELOPMENT.

PRAEGER, NEW YORK. 100 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/EDUCATION

238

STALEY, E./MORSE, R.

1965

MODERN SMALL INDUSTRIES FOR DEVELOPING COUNTRIES.

MCGRAW-HILL, NEW YORK. 427 P.

SMALL INDUSTRY IS DEFINED IN TERMS RELATIVE TO AN ECONOMY. THE NEED FOR SMALL INDUSTRY IS DISCUSSED WITH REFERENCE TO ITS ROLE IN DEVELOPED COUNTRIES. THE TRANSFORMATION FROM NON-FACTORY INDUSTRIES (ARTISAN) TO MODERN SMALL INDUSTRIES, AND THE COMPETITIVE BASIS FOR SMALL FACTORIES ARE PRESENTED. THE ROLE OF SMALL INDUSTRY IN DEVELOPMENT PLANNING IS DISCUSSED.

DEVELOPING COUNTRIES/INDUSTRIES/SOCIAL ASPECTS/POLITICAL ASPECTS/LABOR

239

STEEL, W.F.

1975

THE ROLE OF THE INTERMEDIATE SECTOR IN EMPLOYMENT AND OUTPUT GROWTH. PAPER PRESENTED AT

AFRICAN STUDIES ASSOCIATION ANNUAL MEETING, SAN FRANCISCO, OCTOBER 1975.

DEFINES INTERMEDIATE TECHNOLOGY IN TERMS OF A POINT IN BETWEEN THE EXTREMES OF A DUAL ECONOMY MODEL, AND THE MEAN OF THE TRADITIONAL 4 SECTOR ECONOMY MODEL. THE GROWTH-EMPLOYMENT TRADE-OFF AS A PROBLEM OF THE DUAL ECONOMY MODEL IS DISCUSSED. THE AUTHOR DEFINES HIS OWN 4 SECTOR ECONOMY MODEL WHERE PEOPLE ARE EMPLOYED IN THE MODERN, INTERMEDIATE, AND INFORMAL SECTORS OR ARE UNEMPLOYED. ACCRA, GHANA IS SURVEYED AND THE PERCENTAGES OF PEOPLE EMPLOYED IN EACH SECTOR ARE GIVEN. SUGGESTIONS FOR FURTHER WORK ARE GIVEN.

ECONOMIC ASPECTS/SOCIAL ASPECTS/LABOR/LABOR MIGRATION/DEVELOPING COUNTRIES/GHANA/INDUSTRIES

240

STEELE, D.

1975

THE THEORY OF THE DUAL ECONOMY AND AFRICAN ENTREPRENEURSHIP IN KENYA.

JOURNAL OF DEVELOPMENT STUDIES 12(1):18-37.

MODELS OF THE DUAL ECONOMY SO PERMEATE RESEARCH AND POLICY THAT SOME VERY IMPORTANT DEVELOPMENTS ARE BEING OVERLOOKED. THEIR IMPLICATIONS COULD CONSIDERABLY SHIFT THE EMPHASIS OF POLICY. THE PAPER LOOKS AT THIS ASPECT OF AN IMPORTANT PIECE OF RESEARCH ON KENYAN AFRICAN BUSINESSMEN AND PUTS IT INTO THE CONTEXT OF THE DUAL ECONOMY. THE IMPLICATIONS OF A THIRD SECTOR IN KENYA ARE EXAMINED ALONGSIDE.

DEVELOPING COUNTRIES/ENTREPRENEURSHIP/KENYA/ECONOMIC ASPECTS

241

STEPHENS, K.S.

1975

EMPLOYMENT GENERATION THROUGH STIMULATION OF SMALL SCALE INDUSTRIES: A SEVEN COUNTRY SURVEY OF CERTIFICATION, LICENSING AND QUALITY MARKS PROGRAMS.

GEORGIA INSTITUTE OF TECHNOLOGY, ATLANTA. 22 P.

THE RESPONSE OF SEVEN COUNTRIES TO AN INDUSTRIAL DEVELOPMENT DIVISION SURVEY OF INDUSTRIAL CERTIFICATION IS PRESENTED. NATIONAL CERTIFICATION PROGRAMS CARRIED OUT BY THE PRINCIPAL NATIONAL STANDARDS BODY APPEAR TO BE DEVELOPED OR ARE DEVELOPING IN MOST COUNTRIES OF THE WORLD. CERTIFICATION PROGRAMS OFTEN ACT AS THE CATALYST BY WHICH PROGRESS IN STANDARDIZATION AND IMPLEMENTATION IS ACHIEVED AND ACCELERATED.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/INDUSTRIES

242

STERN, M.O./AYRES, R.V./SHAPANKA, A.

1975

A MODEL FOR FORECASTING THE SUBSTITUTION OF ONE TECHNOLOGY FOR ANOTHER.

TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE 7(1):57-59.

IN FORECASTING THE COURSE AND SPEED OF THE SUBSTITUTION PROCESS, THE SIMPLEST APPROACH IS TO PROJECT A FUNCTION HAVING THE APPROPRIATE S-SHAPED (LOGISTIC) CURVE. VARIOUS MATHEMATICAL MODELS ARE DISCUSSED.

FORECASTING/MATHEMATICAL MODELS/TECHNOLOGY TRANSFER

243

STERN, P.H.

1975

INTERMEDIATE TECHNOLOGY IN ETHIOPIA.

APPROPRIATE TECHNOLOGY 2(4):17-18.

ACTIVE PROGRAMS AND PLANS FOR THE DEVELOPMENT OF ETHIOPIA ARE PRESENTED. THE SOCIETY OF INTERNATIONAL MISSIONARIES HAS BEEN ACTIVE IN PROGRAMS FOR LOW COST WATER DEVELOPMENT. THE CHILALO AGRICULTURAL DEVELOPMENT UNIT HAS BEEN DEVELOPING SIMPLE AGRICULTURAL MACHINERY. PROGRESS AT THE UNIVERSITY OF ADDIS ABABA IN INTERMEDIATE TECHNOLOGY IS DISCUSSED.

DEVELOPING COUNTRIES/ETHIOPIA/GROUNDWATER/ROADS/EDUCATION/WATER PUMPING

244

STEWART, F.

1972

CHOICE OF TECHNIQUE IN DEVELOPING COUNTRIES.

JOURNAL OF DEVELOPMENT STUDIES 72:109-112.

NO ABSTRACT.

DEVELOPING COUNTRIES/SOCIAL ASPECTS

245

STEWART, F.

1975

INTERMEDIATE TECHNOLOGY: A DEFINITIONAL DISCUSSION.

VAIKUNTHBHAI MEHTA SMARAK TRUST, BOMBAY, INDIA, DOCUMENTATION BULLETIN 21:I-IV.

PROVIDES A DISCUSSION OF SOME OF THE CHARACTERISTICS OF INTERMEDIATE TECHNOLOGY THAT HAVE BEEN SUGGESTED AS ESSENTIAL ASPECTS.

DEVELOPING COUNTRIES/SOCIAL ASPECTS

246

STONER, C.H. ED.

1974

PRODUCING YOUR OWN POWER.

RODALE PRESS, INC., EMMANUS, PENNSYLVANIA. 322 P.

DUE TO THE DECLINING AVAILABILITY OF FOSSIL FUELS AND THE UNCERTAINTY OF FUTURE SOURCES OF ENERGY, ORGANIC ENERGY SOURCES ARE BECOMING MORE ATTRACTIVE. THIS BOOK IS A COLLECTION OF ARTICLES BY VARIOUS AUTHORS THAT HAVE BEEN ORGANIZED INTO CHAPTERS ADDRESSING WIND POWER, WATER POWER, WOOD POWER, METHANE POWER AND SOLAR POWER. BIBLIOGRAPHY INCLUDED.

SOLAR ENERGY/WIND POWER/ANAEROBIC DIGESTORS/ALTERNATIVE FUELS/BIBLIOGRAPHIES/WATER POWER/CONSTRUCTION METHODS/ENERGY

247

STRICKLAND, D.

1975

CONCENTRATED BACTERIAL PRODUCTS.

APPROPRIATE TECHNOLOGY 2(1):11-12.

THE BENEFITS OF THE ADDITION OF BACTERIA TO SOIL IN APPROPRIATE AMOUNTS ARE PRESENTED. THE COMPARATIVE IMPROVEMENT IN CROP YIELD AS WELL AS ECONOMIC ASPECTS ARE DISCUSSED.

DEVELOPING COUNTRIES/INDIA/AGRICULTURE/CROP PRODUCTION/FERTILIZERS/SOIL AMENDMENTS/SOIL BACTERIA/COST-BENEFIT ANALYSIS/SOIL TYPES

248

STUART, B.A./DOWNING, C.M.

1974

SELECTIVE MECHANIZATION: A HOPE FOR FARMERS IN DEVELOPING COUNTRIES.

AGRICULTURAL MECHANIZATION IN ASIA. (SUMMER). JOURNAL AVAILABLE FROM FARM MACHINERY INDUSTRIAL CORP. LTD., 7-2-CHROME KANDA, NISHIKI-CHO, CHIYODA-KU, TOKYO 101, JAPAN.

NO ABSTRACT.

DEVELOPING COUNTRIES/FARM EQUIPMENT/AGRICULTURE/TECHNOLOGY TRANSFER

249

SUARINATHAN, K.R./KRANTZ, B.A.

1972

BULLOCK-DRAWN RIDGE PLANTER.

INDIAN AGRICULTURAL RESEARCH INSTITUTE, PUSA, NEW DELHI, WATER TECHNOLOGY CENTER.

NO ABSTRACT.

DEVELOPING COUNTRIES/INDIA/ANIMAL POWER/AGRICULTURE/FARM EQUIPMENT/TOOLS

250

SUBRAMANIAM, V.

1975

TOWARDS A HISTORICAL AND MORPHOLOGICAL ANALYSIS OF TECHNOLOGY TRANSFER.

AFRICAN STUDIES ASSOCIATION ANNUAL MEETING, SAN FRANCISCO, OCTOBER 1975.

DISCUSSES CONCEPTS OF DONOR-RECEPTOR SOCIETIES. COLONIZATION AND INDUSTRIALIZATION TRANSFERRED AS TECHNOLOGIES ARE DISCUSSED, AND THEIR ROLE IN 'UNDERDEVELOPING AFRICA' IS PRESENTED. PROBLEMS ASSOCIATED WITH THE TRANSFER OF MODERN TECHNOLOGY ARE DISCUSSED.

DEVELOPING COUNTRIES/AFRICA/INDUSTRIES/TECHNOLOGY TRANSFER/SOCIAL ASPECTS/LABOR/ECONOMIC ASPECTS

251

TAX, S.

1953

PENNY CAPITALISM.

SMITHSONIAN INSTITUTION, WASHINGTON, D.C., ANTHROPOLOGY PUBLICATION 16.
230 P.

A PRIMITIVE GUATEMALAN SOCIETY IS DESCRIBED (PANAJACHEL). THE ECONOMY CAN BE CHARACTERIZED AS A MONEY ECONOMY ORGANIZED IN SINGLE HOUSEHOLDS AS BOTH CONSUMPTION AND PRODUCTION UNITS WITH A STRONGLY DEVELOPED MARKET THAT TENDS TO BE PERFECTLY COMPETITIVE. OBSERVATIONS ABOUT THE MARKETPLACE AND THE PEOPLE ARE MADE. ADOPTION OF VARIOUS TECHNOLOGIES BY INDIANS IS DISCUSSED. WHAT APPEARS LACKING IN GUATEMALA IS THE BEGINNING OF THE ACCUMULATION OF TECHNICAL KNOWLEDGE THAT EVENTUALLY RESULTS IN IMPROVEMENT IN MATERIAL STANDARDS OF LIFE.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER/ECONOMIC ASPECTS/SOCIAL ASPECTS/GUATEMALA/LABOR

252

TECHNISCHE HOGESCHOOL, EINDHOVEN, THE NETHERLANDS

1973

WANMOLEN: THE WINNOWER.

SAME AS AUTHOR. TECHNICAL REPORT 1. 39 P.

DESIGN, ASSEMBLING INSTRUCTIONS, AND OPERATION OF A WANMOLEN WINNOWER IS PRESENTED.

DEVELOPING COUNTRIES/WINNOWING/CROP PRODUCTION/FARM EQUIPMENT/MACHINE DESIGN

253

TECHNISCHE ONTWIKKELING ONTWIKKELINGS LANDEN (TOOL), THE NETHERLANDS

1976

DEVELOPMENT OF WIND AND SOLAR ENERGY FOR WATER PUMPING.

SAME AS AUTHOR. WIND AND SUN COMPENDIUM 1(WINTER):1-4.

THE FIRST ISSUE OF A PERIODIC PUBLICATION THAT HOPES TO UNIFY THOSE ORGANIZATIONS WORKING IN WIND OR SUN TECHNOLOGY.

DEVELOPING COUNTRIES/WIND POWER/SOLAR ENERGY

254

TERIBA, O./FDOZIEN, E.C.

1972

SOME ASPECTS OF OWNERSHIP AND CONTROL STRUCTURE OF BUSINESS ENTERPRISE IN A DEVELOPING COUNTRY: THE NIGERIAN CASE.

NIGERIAN JOURNAL OF ECONOMIC AND SOCIAL STUDIES 14(1):18.

NO ABSTRACT.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/ENTREPRENEURSHIP/BUSINESS MANAGEMENT

255

TURNER, D. ET AL

1974

SELF HELP INFRASTRUCTURE: APPLICATIONS OF IRREGULAR, SMALL SCALE, INCREMENTAL SYSTEMS FOR RESIDENTIAL UTILITIES. PAPER PRESENTED AT

AFRICAN STUDIES ASSOCIATION, ANNUAL MEETING, SAN FRANCISCO, OCTOBER 1975.

THE DEPLORABLE CONDITIONS UNDER WHICH MANY URBAN RESIDENTS IN DEVELOPING COUNTRIES LIVE REDUCE THEIR ABILITY TO CONTRIBUTE PRODUCTIVELY TO THE SOCIETY AND ECONOMY. THE AUTHORS SUGGEST THAT IT IS APPROPRIATE AND NECESSARY TO DEVELOP A RANGE OF DECENTRALIZED SOLUTIONS TO THE INFRASTRUCTURE NEEDS OF THE RAPIDLY GROWING URBAN AREAS OF DEVELOPING COUNTRIES.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/POLITICAL ASPECTS/LABOR MIGRATION/URBAN PLANNING/SANITATION

256

THEOBALD, G.H.

1973

METHODS AND MACHINES FOR TILE AND OTHER TUBE DRAINAGE.

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME, DEVELOPMENT PAPER 78. 115 P.

THE NEED FOR DRAINING SURPLUS WATER IS DISCUSSED. EVEN IN AREAS WHERE IRRIGATION IS REQUIRED, PROPER DRAINAGE CAN IMPROVE PRODUCTIVITY. DIFFERENT TYPES OF DRAINAGE SYSTEMS ARE EXPLAINED AND COMPARED. SUBSURFACE DRAINAGE LAYOUTS AND BOTH PRIMITIVE AND MODERN METHODS OF CHANNEL CONSTRUCTION ARE PRESENTED. HAND AND MACHINE LABOR METHODS FOR INSTALLING DRAINS ARE PRESENTED WITH VARIOUS REFINEMENTS. LAND SLOPE, JUNCTIONS AND OUTFALLS ARE DISCUSSED. MOLE DRAINAGE IS DESCRIBED IN DETAIL.

DEVELOPING COUNTRIES/IRRIGATION/DRAINAGE/FARM EQUIPMENT/TOOLS

257

TODARO, M.P.

1971

INCOME EXPECTATIONS, RURAL-URBAN MIGRATION AND EMPLOYMENT IN AFRICA.

INTERNATIONAL LABOUR REVIEW 104:387-413.

NO ABSTRACT.

DEVELOPING COUNTRIES/LABOR MIGRATION/AFRICA

258

UCHENDU, V.C.

1974

INTERMEDIATE TECHNOLOGY AND CUMULATIVE TECHNICAL PROCESSES IN EAST AFRICAN AGRICULTURE. IN SEMINAR SERIES ON TECHNOLOGY AND DEVELOPMENT, VOL. I.

HOWARD UNIVERSITY, WASHINGTON, D.C., SCHOOL OF ENGINEERING/U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT, WASHINGTON, D.C. 84 P.

THE IDEA THAT THE TECHNOLOGY GAP BETWEEN DEVELOPED AND DEVELOPING COUNTRIES IS A NOVELTY OF THE MODERN WORLD IS PRESENTED. A PROFILE OF EAST AFRICA INCLUDING HISTORICAL AGRICULTURAL DEVELOPMENT IS GIVEN. THE ROLE OF INTERMEDIATE TECHNOLOGY IN DEVELOPMENT IS DISCUSSED WITH SUPPORTING CASE STUDIES.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/TECHNOLOGY TRANSFER

259

UCHENDU, V.C.

1975

THE ROLE OF INTERMEDIATE TECHNOLOGY IN EAST AFRICAN AGRICULTURAL DEVELOPMENT.

EASTERN AFRICA JOURNAL OF RURAL DEVELOPMENT 8(1-2):181-190.

IN DEVELOPING COUNTRIES, THE LACK OF AWARENESS OR ABILITY TO MONITOR AND CORRECT THE BOTTLENECKS CREATED BY IMPORTED TECHNOLOGIES IS PROBABLY LIMITING PRODUCTIVITY AND OUTPUT MORE THAN ANY OTHER FACTOR. THE CONCEPT OF CUMULATIVE TECHNOLOGY, NECESSARY FOR CONTINUED AGRICULTURAL EXPANSION, IS PRESENTED.

DEVELOPING COUNTRIES/AGRICULTURE/SOCIAL ASPECTS/TECHNOLOGY TRANSFER

260

UNITED NATIONS AFRICAN INSTITUTE FOR ECONOMIC DEVELOPMENT AND PLANNING/
UNIVERSITY OF SUSSEX, INSTITUTE OF DEVELOPMENT STUDIES

1975

REPORT OF DISCUSSION GROUP OF STUDY SEMINAR PARTICIPANTS TO THE POLICY CONFERENCE: THE CHOICE OF TECHNOLOGY.

SEMINAR ON STRATEGIES FOR INCREASING PRODUCTIVE EMPLOYMENT IN AFRICAN COUNTRIES, 52D, DAKAR, SENEGAL, NOVEMBER 10-DECEMBER 12, 4 P. CS/2673.22.

TECHNOLOGICAL COMPETENCE AT MIDDLE LEVEL EMPLOYMENT IS CONSIDERED A HINDRANCE TO TECHNOLOGICAL CHOICE. THE CHOICE OF TECHNOLOGIES IS NOT ALWAYS AS WIDE AS FIRST APPEARS BECAUSE OF THE POSSIBILITY OF INAPPROPRIATE MACRO DEVELOPMENT RESULTING FROM APPROPRIATE MICRO POLICIES. MULTINATIONAL CORPORATIONS CAN

INFLUENCE DEVELOPMENT BY SUBCONTRACTING TO LOCAL MANUFACTURERS, AND PROVIDING TRAINING PROGRAMS AND TECHNICAL CONSULTING.

DEVELOPING COUNTRIES/EDUCATION/TECHNOLOGY TRANSFER

261

UNITED NATIONS AFRICAN INSTITUTE FOR ECONOMIC DEVELOPMENT AND PLANNING/
UNIVERSITY OF SUSSEX, INSTITUTE OF DEVELOPMENT STUDIES

1975

REPORT OF THE SECOND WORKING GROUP OF STUDY SEMINAR PARTICIPANTS TO THE
POLICY CONFERENCE.

SEMINAR ON STRATEGIES FOR INCREASING PRODUCTIVE EMPLOYMENT IN AFRICAN
COUNTRIES, 52D, DAKAR, SENEGAL, NOVEMBER 10-DECEMBER 12, 4 P. CS/2673-27.

SOLUTIONS TO THE PROBLEM OF INADEQUATE CEREAL PRODUCTION IN AFRICA ARE
EXPLORED. GOVERNMENT PRICE CONTROL AND LIBERAL LOAN REPAYMENT POLICIES FOR
AGRICULTURAL EQUIPMENT ARE SUGGESTED.

DEVELOPING COUNTRIES/CROP PRODUCTION/GOVERNMENT

262

UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, GENEVA

1975

THE REVERSE TRANSFER OF TECHNOLOGY.

UNITED NATIONS, NEW YORK. TD/B/AC.11/25/REV.1. 13 P.

EXAMINES ECONOMIC ASPECTS OF LDC BRAIN DRAIN (REVERSE TECHNOLOGY TRANSFER). A
MATHEMATICAL FORMULA FOR ESTIMATING THESE ECONOMIC EFFECTS IS PRESENTED. THE
COSTS AND BENEFITS FOR THE U.S. AND INDIA FOR 1970 ARE ALSO PRESENTED.

DEVELOPING COUNTRIES/INDIA/COST-BENEFIT ANALYSIS/TECHNOLOGY TRANSFER/ECONOMIC
ASPECTS

263

UNITED NATIONS ECONOMIC AND SOCIAL COUNCIL, ADVISORY COMMITTEE ON THE
APPLICATION OF SCIENCE AND TECHNOLOGY TO DEVELOPMENT

1968

INTERNATIONAL ACTION TO AVERT THE IMPENDING PROTEIN CRISIS.

UNITED NATIONS, NEW YORK. JX1977A2E/4343/REV.1. 105 P.

NO ABSTRACT.

PROTEIN/NUTRITION

264

UNITED NATIONS ECONOMIC AND SOCIAL COUNCIL, ADVISORY COMMITTEE ON THE
APPLICATION OF SCIENCE AND TECHNOLOGY TO DEVELOPMENT

1970

NATURAL RESOURCES OF DEVELOPING COUNTRIES: INVESTIGATION, DEVELOPMENT AND
RATIONAL UTILIZATION.

UNITED NATIONS, NEW YORK. 174 P.

DEVELOPING COUNTRIES/NATURAL RESOURCES/CONSERVATION

265

UNITED NATIONS ECONOMIC AND SOCIAL COUNCIL, ADVISORY COMMITTEE ON THE APPLICATION OF SCIENCE AND TECHNOLOGY TO DEVELOPMENT

1971

WORLD PLAN OF ACTION FOR THE APPLICATION OF SCIENCE AND TECHNOLOGY TO DEVELOPMENT.

UNITED NATIONS, NEW YORK. JX1977 A2 E/4962/REV.1. 286 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/ECONOMIC ASPECTS/SOCIAL ASPECTS/TECHNOLOGY TRANSFER

266

UNITED NATIONS ECONOMIC AND SOCIAL COUNCIL, COMMITTEE FOR DEVELOPMENT PLANNING

1972

ATTACK ON MASS POVERTY AND UNEMPLOYMENT: VIEWS AND RECOMMENDATIONS OF THE COMMITTEE FOR DEVELOPMENT PLANNING.

UNITED NATIONS, NEW YORK. 134 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/SOCIAL ASPECTS

267

UNESCO, PARIS, PROGRAMME ON MAN AND THE BIOSPHERE (MAB)

1973

EXPERT PANEL ON PROJECT 11: ECOLOGICAL EFFECTS OF ENERGY UTILIZATION IN URBAN AND INDUSTRIAL SYSTEMS, FINAL REPORT.

SAME AS AUTHOR. REPORT 13. SC.73/CONF.620/3. 85 P.

THE CITY AND ITS INDUSTRY ARE MODELED TO ACCOUNT FOR ENERGY FLOW, HUMAN WELL-BEING, AND ECOLOGICAL EFFECTS. PARTICULAR ATTENTION IS PAID TO THE RELATIONSHIP OF TRANSPORTATION AND URBAN HOUSING TO THE BIOSPHERE. AN APPLICATION OF SYSTEMS ANALYSIS IN AN URBANIZED REGION IS ALSO PRESENTED.

ECOLOGICAL/DECISION MODELS

268

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION, VIENNA

197-

UNIDO ACE SERVICE BULLETIN.

SAME AS AUTHOR.

INDIVIDUAL ISSUES OF THIS BULLETIN ADDRESS INDUSTRIAL EQUIPMENT FROM DEVELOPING COUNTRIES (TO MAKE KNOWN THE AVAILABILITY OF INDUSTRIAL EQUIPMENT SUPPLIED TO DEVELOPING COUNTRIES); TECHNOLOGIES FROM DEVELOPING COUNTRIES, (TO ASSIST OTHER COUNTRIES IN THE SELECTION OF APPROPRIATE TECHNOLOGIES); RECYCLING TECHNOLOGIES (TO REPORT ON TECHNOLOGIES THAT SPECIFICALLY HAVE FOUND OTHER USES FOR EXISTING PRODUCTS OR NEW USES FOR NATURAL COMMON RESOURCES); AND COMPARABLE EQUIPMENT AND TECHNOLOGIES FROM DEVELOPING COUNTRIES (WHICH INDEXES THE ABOVE CATEGORIES).

DEVELOPING COUNTRIES/MACHINE DESIGN/INDUSTRIES/FARM EQUIPMENT/AGRICULTURE

269

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION, VIENNA

1973

INFORMATION SOURCES ON THE AGRICULTURAL IMPLEMENTS AND MACHINERY INDUSTRY.

SAME AS AUTHOR. ID/PI/26. 108 P.

NO ABSTRACT.

TOOLS/FARM EQUIPMENT/INDUSTRIES/MACHINE DESIGN

270

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION, VIENNA

1974

ANIMAL DRAWN AGRICULTURAL IMPLEMENTS, HAND OPERATED MACHINES, AND SIMPLE POWER EQUIPMENT IN LEAST DEVELOPED AND OTHER DEVELOPING COUNTRIES: REPORT OF A MANUFACTURING DEVELOPMENT CLINIC, NEW DELHI, INDIA.

SAME AS AUTHOR. ID/148 (ID/WG. 193/3). 45 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/ANIMAL POWER/FARM EQUIPMENT/MACHINE DESIGN/MOTOR POWER

271

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION, VIENNA

1974

NATURAL RESOURCES OF THE DEVELOPING COUNTRIES AND THEIR RELATIONSHIP TO PROBLEMS IN INDUSTRIALIZATION.

SAME AS AUTHOR. ID/CONF. 3/6. 6 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/INDUSTRIES/NATURAL RESOURCES

272

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION, VIENNA

1975

INDUSTRIAL MANAGEMENT CONSULTING SERVICES PROGRAM.

SAME AS AUTHOR. 8 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/CONSULTING/INDUSTRIES

273

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION, VIENNA

1975

MEETING ON SELF-HELP PROGRAMMES FOR SMALL-SCALE INDUSTRIES IN DEVELOPING COUNTRIES, VIENNA, NOVEMBER 10-14.

SAME AS AUTHOR. ID/WG.210/1-22.

NO ABSTRACT.

CONSULTING/EDUCATION/BUSINESS MANAGEMENT/ENTREPRENEURSHIP/DEVELOPING COUNTRIES

274

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION, VIENNA

1975

SMALL SCALE INDUSTRY DEVELOPMENT.

SAME AS AUTHOR. ID/PI/23. 8 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/INDUSTRIES

275

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION, VIENNA

1975

THE INITIATION AND IMPLEMENTATION OF INDUSTRIAL PROJECTS IN DEVELOPING COUNTRIES: A SYSTEMATIC APPROACH.

SAME AS AUTHOR. ID/146. 73 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/TECHNOLOGY TRANSFER

276

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION, VIENNA/INTERNATIONAL
LABOR ORGANIZATION, GENEVA

1974

INDUSTRIALIZATION EMPLOYMENT AND SOCIAL OBJECTIVES.

SAME AS AUTHOR. ID/CINF. 3/9. 23 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/INDUSTRIES/SOCIAL ASPECTS/LABOR

277

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT, WASHINGTON, D.C.

1974

SMALL AND MEDIUM INDUSTRY DEVELOPMENT.

SAME AS AUTHOR. A.I.D. BIBLIOGRAPHIC SERIES, SCIENCE AND TECHNOLOGY 1.
131 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/BIBLIOGRAPHIES

278

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT, WASHINGTON, D.C./UNIVERSITY OF
ARIZONA, TUCSON, OFFICE OF ARID LANDS STUDIES

1976

PROCEEDINGS OF THE A.I.D. STRATEGY FOR ENVIRONMENT AND NATURAL RESOURCES
DEVELOPMENT: ANNUAL STRATEGY AND PLANNING SYMPOSIUM FOR THE OFFICE OF SCIENCE
AND TECHNOLOGY, USAID, TUCSON, ARIZONA, MARCH 21-24, 1976.

SAME AS AUTHOR. (IN PRESS)

NO ABSTRACT.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/TECHNOLOGY TRANSFER

279

U.S. ATOMIC ENERGY COMMISSION, WASHINGTON, D.C.

1974

SOLAR ENERGY BIBLIOGRAPHY.

SAME AS AUTHOR. AVAILABLE NTIS AS TD-3351.

A BIBLIOGRAPHY OF SOLAR ENERGY RELATED LITERATURE IS PRESENTED.

SOLAR ENERGY/BIBLIOGRAPHIES

280

U.S. DEPARTMENT OF AGRICULTURE, WASHINGTON, D.C.

N.D.

HANDBOOK FOR VOLUNTEERS: CHILD NUTRITION PROGRAMS.
SAME AS AUTHOR. (FNS 10)

NO ABSTRACT.
NUTRITION

281

UNIVERSITY OF ARIZONA, TUCSON, INSTITUTE OF ATMOSPHERIC PHYSICS

1971

AN APPROACH TO POWER PRODUCTION IN THE DEVELOPING AREAS (A RESEARCH PROPOSAL FOR THE OFFICE OF SCIENCE AND TECHNOLOGY OF THE UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT).

SAME AS AUTHOR, 26 P.

PURPOSE OF THE PROPOSAL IS TO DEVELOP A SIMPLE ENGINE WHICH COULD RUN ON STRAW OR AGRICULTURAL WASTE. DISCUSSES THE ECONOMIC ADVANTAGES OF USING MACHINES INSTEAD OF BEASTS OF BURDEN FOR POWER PRODUCTION. CONSIDERS THE USE OF BOTH NATURAL FUELS AND PROCESSED FOSSIL FUELS. PROPOSES TO INVESTIGATE ECONOMICALLY FEASIBLE, TECHNICALLY VIABLE AND PRACTICALLY APPLICABLE SOLUTIONS. DISCUSSES THE COMPETITION BETWEEN THE BEAST OF BURDEN AND THE HUMAN ELEMENT FOR FOOD.

DEVELOPING COUNTRIES/ALTERNATIVE FUELS/ANIMAL POWER/MOTOR POWER

282

VAN DER ZWAAN, A.H.

1975

THE SOCIOTECHNICAL SYSTEMS APPROACH.

INTERNATIONAL JOURNAL OF PRODUCT RESEARCH 13(2):149-163.

THE ATTRIBUTES AND SHORTCOMINGS OF THE SOCIOTECHNICAL APPROACH ARE EXAMINED. THE SOCIOTECHNICAL DESIGN MODEL STATES THAT TECHNOLOGY MUST BE SO CONSTRUCTED THAT WITHIN IT TASKS CAN BE CREATED THAT SATISFY THE NEEDS OF WORKING PEOPLE.

SOCIAL ASPECTS/DECISION MODELS/LABOR

283

VILLEGAS, B.

1974

FOR AN APPROPRIATE TECHNOLOGY.

CERES 7(3):44-47.

DESPITE THE MASSIVE RESOURCES SPENT ON DEVELOPMENT PLANS, LITTLE IS KNOWN ABOUT THE REAL PROBLEMS OF INCOME INEQUALITIES, MASS POVERTY, UNEMPLOYMENT, AND UNDEREMPLOYMENT. HOWEVER, NO LONGER ARE NATIONAL LEADERS WORKING UNDER THE

ILLUSION THAT ECONOMIC GROWTH WILL AUTOMATICALLY SOLVE THE PROBLEM OF MASS POVERTY. A REVIEW OF THE STATE OF KNOWLEDGE REGARDING ECONOMICALLY APPROPRIATE TECHNOLOGIES IS PRESENTED. THE IMPLEMENTATION OF LABOR INTENSIVE VS CAPITAL INTENSIVE PROGRAMS IS DISCUSSED.

DEVELOPING COUNTRIES/ECONOMIC ASPECTS/LABOR/SOCIAL ASPECTS/COST-BENEFIT ANALYSIS

284

VILLEGAS, B.

1975

SO YOU WANT TO HELP THE POOR?

SMALL INDUSTRY JOURNAL 8(1):4-10.

CONCERN FOR THE POOREST AMONG POOR HAS BECOME AN ESSENTIAL AND INDISPENSIBLE INGREDIENT OF ECONOMIC PLANNING DURING THE SEVENTIES. THE ASPECT OF HUMAN RESETTLEMENT IS DISCUSSED, RECOGNIZING THAT MASS POVERTY IS FRADICATED BY MAKING THE POOR PRODUCTIVE. VIRTUES OF VOCATIONAL VS GENERAL EDUCATION ARE ASSESSED IN TERMS OF LONG AND SHORT RUN GOALS. THE ROLE OF THE HANDICRAFTS INDUSTRY IS PRESENTED. THE IDEA THAT ENTREPRENEURSHIP IS NOT THE KEY TO INCREASING THE STANDARDS OF THE POOR IS DISCUSSED. A STUDY BY THE CENTER FOR RESEARCH AND COMMUNICATION IS USED AS SUPPORTING EVIDENCE.

DEVELOPING COUNTRIES/ENTREPRENEURSHIP/LABOR MIGPATION/EDUCATION/SOCIAL ASPECTS

285

VOLKOV, M.

1975

THE DEVELOPING COUNTRIES: THE CHOICE OF TECHNOLOGY.

PROBLEMS OF ECONOMICS 16:3-25.

NO ABSTRACT.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/TECHNOLOGY TRANSFER

286

VOLUNTEERS IN TECHNICAL ASSISTANCE (VITA), MT. PANIER, MARYLAND

1970

LOW COST WIND MILL FOR DEVELOPING NATIONS.

SAME AS AUTHOR. PAPER 20 E.

NO ABSTRACT.

DEVELOPING COUNTRIES/WIND POWER

287

VOLUNTEERS IN TECHNICAL ASSISTANCE (VITA), MT. RANIER, MARYLAND
1970

VILLAGE TECHNOLOGY HANDBOOK.

SAME AS AUTHOR. 387 P.

THIS HANDBOOK IS AIMED AT HELPING VILLAGERS MASTER THE RESOURCES AVAILABLE TO THEM, AND TO BRING THEIR VILLAGES MORE FULLY INTO THE LIVES OF THE NATIONS OF WHICH THEY FORM A BASIC AND IMPORTANT PART. SIMPLE, ILLUSTRATED INSTRUCTION FOR WATER RESOURCES, HEALTH AND SANITATION, AGRICULTURE, FOOD PROCESSING AND PRESERVATION, CONSTRUCTION, CRAFTS AND VILLAGE INDUSTRY AND COMMUNICATIONS ARE PRESENTED.

DEVELOPING COUNTRIES/WATER/SANITATION/WATER PUMPING/GROUNDWATER/WATER STORAGE/IRRIGATION/AGRICULTURE/CONSTRUCTION

288

VOLUNTEERS IN TECHNICAL ASSISTANCE (VITA), MT. RANIER, MARYLAND
1975

APPROPRIATE TECHNOLOGY FOR THE THIRD WORLD.

DEVELOPMENT DIGEST 13(4):55-62.

THE METHODOLOGY THAT THE VOLUNTEERS IN TECHNICAL ASSISTANCE USE IN SUPPLYING TECHNICAL ASSISTANCE IS PRESENTED. A CASE HISTORY INVOLVING A WATER MILL FOR GRINDING CORN IN MALAWI IS SUMMARIZED.

DEVELOPING COUNTRIES/SOCIAL ASPECTS/WATER POWER/CORN/MALAWI/CONSULTING

289

WADE, N.

1975

NICHOLAS GEORGESCU-ROGER: ENTROPY THE MEASURE OF ECONOMIC MAN.

SCIENCE 190:446-450.

THE APPLICATION OF THE SECOND LAW OF THERMODYNAMICS (ENTROPY) TO ECONOMICS IS PRESENTED. THE LONGEVITY OF THE WORLD'S NATURAL RESOURCES AND MAN HIMSELF IS DISCUSSED. PROJECTIONS ARE MADE TO FUTURE WORLD ORGANIZATION.

ECONOMIC ASPECTS/SOCIAL ASPECTS/NATURAL RESOURCES/POLITICAL ASPECTS/ECOLOGY/CONSERVATION

290

WAPNER, D.

1975

GAMES FOR URBAN AND REGIONAL PLANNING: A PEDAGOGICAL TOOL.

TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE 7(4):397-412.

DISSATISFACTION WITH THE NORMATIVE MODELS DEVELOPED WITHIN URBAN AND REGIONAL PLANNING DURING THE SIXTIES HAS LED TO AN INCREASED INTEREST IN THE USE OF GAMES. THIS TECHNIQUE HAS BEEN APPLIED AS A PEDAGOGICAL AID IN ORDER TO BRING REALITY INTO THE CLASSROOM. THE INTENT IS TO CREATE AN INCREASED UNDERSTANDING OF THE EXISTING INTERACTION BETWEEN THE KEY FIGURES OF THE SOCIAL, ECONOMIC AND PHYSICAL PLANNING PROCESS. BY USING COMMON FORECASTING METHODS FUTURE ALTERNATIVES FOR A PARTICULAR SECTOR OR SPECIAL ACTIVITY CAN BE PREDICTED. APPLICATION TO THREE NORDIC COMMUNES IS MADE.

FORECASTING/COMMUNES/SOCIAL ASPECTS/URBAN PLANNING/REGIONAL PLANNING

291

WATANBE, S.

1974

REFLECTIONS ON CURRENT POLICIES FOR PROMOTING SMALL ENTERPRISES AND SUBCONTRACTING.

INTERNATIONAL LABOUR REVIEW 110(5):405-422.

POLICY MAKERS HAVE EMPHASIZED THE ROLE OF SMALL ENTERPRISES AND SUBCONTRACTING AS A MEANS OF INCREASING EMPLOYMENT AND ECONOMICIZING CAPITAL. THESE AIMS HAVE NOT ALWAYS BEEN MET. THE AUTHOR DISCUSSES SOME HITHERTO NEGLECTED ECONOMIC AND INSTITUTIONAL ASPECTS OF THE INDIAN APPROACH WHICH MAY HAVE MADE THE PROCESS MORE EXPENSIVE THAN NECESSARY.

DEVELOPING COUNTRIES/INDIA/ENTREPRENEURSHIP/LABOR/ECONOMIC ASPECTS

292

WATERS, P.C.

1972

THE IMPACT OF TECHNICAL PROGRESS ON UNIT PRICE OF SELECTED PRODUCTS IN DEVELOPING INDUSTRIES.

TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE 3(4):473-479.

NO ABSTRACT.

DECISION MODELS/TECHNOLOGY MEASUREMENT

293

WATT, S.B.

1975

THE CRETAN SAIL WINDWHEEL AS A POWER SOURCE.

APPROPRIATE TECHNOLOGY 2(3):4-5.

ADVANTAGES, DISADVANTAGES, AND EXPECTED WORK CAPACITY OF THE CRETAN SAIL WINDWHEEL ARE PRESENTED. ECONOMICS OF THE SAIL WINDWHEEL VS THE STANDARD FIXED VANE TYPE ARE DISCUSSED. THE INEXPENSIVE CONSTRUCTION AND MAINTENANCE COSTS OF THE CRETAN SAIL WINDWHEEL ARE HIGHLIGHTED.

WATER CONVEYANCE/IRRIGATION/GROUNDWATER/WIND POWER/DEVELOPING COUNTRIES/MILLING/COST-BENEFIT ANALYSIS

294

WATT, S.B.

1975

VILLAGE SANITATION IMPROVEMENT SCHEME, INDIA.

APPROPRIATE TECHNOLOGY 2(4):15-16.

THE ADVANTAGES OF PROPER EXCRETA DISPOSAL ARE DISCUSSED. THE CONSTRUCTION OF A WATER SEALED, SOAKAGE PIT TYPE PRIVY IS PRESENTED. AREA LIMITATIONS FOR USE ARE DESCRIBED.

DEVELOPING COUNTRIES/SANITATION/CONSTRUCTION MATERIALS/CONSTRUCTION METHODS/EXCREMENT/WATER/INDIA

295

WATT, S.B.

1975

WATER JARS FROM CEMENT MORTAR.

APPROPRIATE TECHNOLOGY 2(2):10-11.

A DESIGN FOR LOW COST (50 CENTS U.S./250 LITRES) IS PRESENTED AS A METHOD OF CATCHING AND STORING RAIN WATER IN THAILAND.

DEVELOPING COUNTRIES/THAILAND/WATER HARVESTING/WATER STORAGE/DISEASE CONTROL/RAINFALL/CEMENT

296

WATTS, G./HRUBECKY, H.

1975

ON THE LIMITS TO ENERGY GROWTH.

TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE 7(4):371-378.

ALTHOUGH THE TOTAL RATE AT WHICH ENERGY IS RELEASED INTO THE ENVIRONMENT BY MAN IS ONLY A FRACTION OF ONE PERCENT AS LARGE AS THE HEAT ABSORBED FROM SOLAR RADIATION, THE CONTINUED ESCALATION OF ENERGY USE COULD CAUSE GLOBAL THERMAL POLLUTION IN A SURPRISINGLY SHORT TIME. IF THE RATE OF ENERGY USE CONTINUES TO INCREASE AS IT HAS OVER THE PAST TEN YEARS, SERIOUS CLIMATIC CHANGES COULD RESULT BEFORE THE END OF THIS CENTURY.

FORECASTING/ENERGY

297

WERGAM, J.

1975

POSSIBLE SOLUTIONS TO THE WORLD FOOD PROBLEM.

APPROPRIATE TECHNOLOGY 2(2):27-28.

DISCUSSES THE USE OF PETROCHEMICALS IN PRODUCING FOOD FROM THE STANDPOINT OF BOTH SYNTHESIS AND ENERGY. THE FAVORABLE EFFECTS OF PROCESSING AGRICULTURAL WASTE ARE PRESENTED. NUTRITIONAL ASPECTS ARE DISCUSSED.

CROP PRODUCTION/FOODS/ENERGY/NITROGEN COMPOUNDS/AGRICULTURAL WASTE/NUTRITION

298
WEST, C.

1974

AND YET IT MOVES.

NEW SCIENTIST 03(912):530-533.

THE PRINCIPLES OF OPERATION OF THE FLUIDYNE STIRLING ENGINE ARE DISCUSSED.
THE FLUIDYNE ENGINE OPERATES ON A STIRLING CYCLE WITH A WATER PISTON.

ENERGY/WATER POWER/SOLAR ENERGY/MOTOR POWER

299
WEYGERS, A.

1973

THE MAKING OF TOOLS.

VAN NOSTRAND REINHOLD CO., NEW YORK. 93 P.

NO ABSTRACT.

TOOLS/METAL WORKING

300
WEYGERS, A.

1976

THE MODERN BLACKSMITH.

VAN NOSTRAND REINHOLD CO., NEW YORK. 96 P.

NO ABSTRACT.

METAL WORKING/TOOLS

301
WHITE, A./SFVIDUR, C.

1975

RURAL WATER SUPPLY AND SANITATION IN LESS-DEVELOPED COUNTRIES: A SELECTED
ANNOTATED BIBLIOGRAPHY.

INTERNATIONAL DEVELOPMENT RESEARCH CENTER, OTTAWA, CANADA. 82 P.

PROVIDES INFORMATION ON THE ISSUES INVOLVED IN IMPROVEMENTS TO WATER SUPPLY
AND SANITATION SYSTEMS, THE EXTENT TO WHICH VARIOUS TYPES OF IMPROVEMENT
PROGRAMS REACH AND ARE ACCEPTED BY COMMUNITIES, AND HOW LOCAL COMMUNITIES CAN
BE INVOLVED IN IMPROVEMENT SCHEMES.

DEVELOPING COUNTRIES/WATER/SANITATION/BIBLIOGRAPHIES

302

WHITE, L.J.

1974

APPROPRIATE TECHNOLOGY AND A COMPETITIVE ENVIRONMENT: SOME EVIDENCE FROM PAKISTAN.

PRINCETON UNIVERSITY, NEW JERSEY, WOODROW WILSON SCHOOL, DISCUSSION PAPER 46, 22 P.

DISCUSSES HOW THE ECONOMIC ENVIRONMENT CAN INFLUENCE THE ENTREPRENEUR'S DECISION REGARDING CAPITAL VS LABOR INTENSIVE OPERATION. THE EXISTENCE OF A COMPETITIVE ENVIRONMENT IN THE DEVELOPING COUNTRY STIMULATES LABOR INTENSITY.

DEVELOPING COUNTRIES/ECONOMIC ASPECTS/ENTREPRENEURSHIP

303

WILLCOCKS, T.

1975

THE HEDGEHOG SPINNER.

APPROPRIATE TECHNOLOGY 2(4):21.

THE HEDGEHOG SPINNER IS DESIGNED IN PART TO BRIDGE THE GAP BETWEEN QUALITY AND QUANTITY, AND AT THE SAME TIME TO DISPENSE WITH COMPLICATED PROCESSES AND CONSTRUCTION.

DEVELOPING COUNTRIES/SPINNING/MACHINE DESIGN

304

WILLIAMS, D.B.

1975

A FOOT POWERED GRAIN THRESHER FOR RICE, SORGHUM, OATS, AND OTHER SMALL GRAINS.

APPROPRIATE TECHNOLOGY 2(2):6-7.

A REPORT ON AN INEXPENSIVE REVIVAL OF THE FOOT POWERED GRAIN THRESHER IS PRESENTED. THIS MODEL DOES NOT ELIMINATE THE NEED FOR WINNOWING, AND IS ALSO SUITABLE FOR MOTOR POWER.

DEVELOPING COUNTRIES/SORGHUM/RICE/OATS/CROP PRODUCTION/GRAINS/HARVESTING/FARM EQUIPMENT/MACHINE DESIGN/MOTOR POWER/ANIMAL POWER/THRESHING

305

WILSON, G.W.

1974

URBAN TRANSPORTATION PROBLEMS IN DEVELOPING COUNTRIES: THE ROLE OF TECHNOLOGY.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SYMPOSIUM ON STRATEGIES FOR A.I.D. PROGRAMS IN SELECTED AREAS OF SCIENCE AND TECHNOLOGY, CAMBRIDGE, APRIL 1974, PROCEEDINGS, VOL. 2, 58 P.

BASED ON SEVEN PROPOSITIONS ON PROBABLE FUTURE TRENDS IN URBANIZATION AND TRANSPORTATION IN DEVELOPING COUNTRIES, THE RESPONSE OF LOCAL AND NATIONAL

GOVERNMENTS TO THESE TRANSPORTATION PROBLEMS IS HYPOTHESIZED, STARTING WITH A REQUEST FOR A LARGE SCALE STUDY BY A FOREIGN CONSULTING FIRM AND ENDING WITH NON-IMPLEMENTATION OF THE FIRM'S CONCLUSIONS. TECHNOLOGY WILL NOT IMPROVE THE SITUATION. A LIST OF TEN POSSIBLE ORGANIZATIONAL MODIFICATIONS IS PRESENTED AND THE LIKELIHOOD OF THEIR IMPLEMENTATION IS DISCUSSED.

DEVELOPING COUNTRIES/TRANSPORTATION/POLITICAL ASPECTS/TECHNOLOGY TRANSFER

306

WILSON, S.S.

1975

THE WHEELBARROW.

APPROPRIATE TECHNOLOGY 2(2):25-26.

DISCUSSES DESIGN AND LOAD PLACEMENT ON THE UPDATED CHINESE WHEELBARROW. MANUFACTURING TECHNIQUES ARE PRESENTED. A DESIGN FOR A RIM PULLER IS PRESENTED.

DEVELOPING COUNTRIES/TRANSPORTATION/CHINA/AFRICA/INDIA/METAL WORKING/TOOLS/MACHINE DESIGN

307

WOODBURY, K.B. ED.

1962

CIVILIZATIONS IN DESERT LANDS.

UNIVERSITY OF UTAH, SALT LAKE CITY, DEPARTMENT OF ANTHROPOLOGY, ANTHROPOLOGICAL PAPER 62. 86 P.

NO ABSTRACT.

DEVELOPING COUNTRIES/SOCIAL ASPECTS

308

WOODHOUSE, F.J.

1972

REVISING THE FUTURE OF THE THIRD WORLD.

WORLD POLITICS 25(72):1-33.

NO ABSTRACT.

DEVELOPING COUNTRIES/POLITICAL ASPECTS/SOCIAL ASPECTS

309

WORLD NEIGHBORS, OKLAHOMA CITY, OKLAHOMA

N.D.

AGRICULTURAL IRRIGATION.

SAME AS AUTHOR. 20 P.

THIS BOOKLET REPRODUCES THE PHOTOS AND TEXT OF TWO FILMSTRIPS ON AGRICULTURAL IRRIGATION. 'SOURCES OF WATER' DISCUSSES WHERE TO LOOK FOR WATER AND HOW TO MAKE WATER AVAILABLE FOR CROP IRRIGATION, AND 'GETTING WATER TO THE PLANTS' DISCUSSES HOW TO MOVE IRRIGATION WATER FROM THE SOURCE TO THE CROP.

DEVELOPING COUNTRIES/AGRICULTURE/WATER/WATER CONVEYANCE/IRRIGATION

310

WORLD NEIGHBORS, OKLAHOMA CITY, OKLAHOMA

N.D.

BETTER HEALTH IS MADE POSSIBLE THROUGH PROPER SANITATION.

WORLD NEIGHBORS IN ACTION 2(4E). 6 P.

A GENERAL DISCUSSION OF HOW TO IMPROVE SANITARY CONDITIONS IS PRESENTED. BASIC CONSTRUCTION PRINCIPALS FOR BOTH PIT AND WATER SEAL TYPE TOILETS ARE GIVEN.

DEVELOPING COUNTRIES/SANITATION/WATER POLLUTION/EXCREMENT

311

WORLD NEIGHBORS, OKLAHOMA CITY, OKLAHOMA

N.D.

MEETING NEEDS FOR MORE WATER.

WORLD NEIGHBORS IN ACTION 5(1E). 6 P.

A GENERAL DISCUSSION OF HOW TO MAKE WATER SUPPLIES IS PRESENTED. DEVICES CONSIDERED ARE WELLS, SPRINGS, PUMPS, RAMS, WINDMILLS AND LIFTS.

DEVELOPING COUNTRIES/WATER CONVEYANCE/DRAINAGE/IRRIGATION/WATER STORAGE/WIND POWER/MOTOR POWER/GROUNDWATER/WATER PUMPING

312

WORLD NEIGHBORS, OKLAHOMA CITY, OKLAHOMA

N.D.

WATER MEANS LIFE.

WORLD NEIGHBORS IN ACTION 4(3E). 6 P.

A GENERAL DISCUSSION OF HOW TO RETAIN MORE WATER ON LAND IS PRESENTED. METHODS CONSIDERED INCLUDE PLANTING COVER CROPS, ADDING ORGANIC MATTER TO THE SOIL, MAKING CONTOUR DITCHES AND TERRACES, BUILDING SMALL DAMS AND CONSTRUCTING CISTERNS. BASIC CONSTRUCTION PRINCIPLES FOR DAMS AND CISTERNS ARE GIVEN.

DEVELOPING COUNTRIES/WATER STORAGE/WATER HARVESTING/WATER/SOIL AMENDMENTS/
RUNOFF

313

WU, M.

1975

ADOPTION OF THE DRUM THRESHER FOR NEW RICE VARIETIES IN ASIA.

VAIKUNTHBHAI MEHTA SMARAK TRUST, BOMBAY, INDIA, DOCUMENTATION BULLETIN 20:5-7.

SPECIFICATIONS FOR A FOOT POWERED DRUM THRESHER AND A PADDY DRIER ARE PRESENTED.

DEVELOPING COUNTRIES/RICE/THRESHING/DRYING/ANIMAL POWER/FARM EQUIPMENT/MACHINE DESIGN

314

YUN, Y.

1975

CASE STUDIES OF SUCCESSFUL OPERATIONAL PROGRAMS. CASE 3: TECHNO ECONOMICS GROUP, KOREA INSTITUTE OF SCIENCE AND TECHNOLOGY.

CONFERENCE AND SEMINAR ON TECHNIQUES AND METHODOLOGIES FOR STIMULATING SMALL-SCALE LABOR-INTENSIVE INDUSTRIES IN DEVELOPING COUNTRIES. ATLANTA, GEORGIA, MAY 10-14, SUMMARY OF PROCEEDINGS, 17 P.

DESCRIBES THE INSTITUTE AS A MULTIDISCIPLINARY CONTRACT RESEARCH ORGANIZATION EMPHASIZING TRANSFER OF TECHNOLOGY TO LOCAL INDUSTRY. SOME PROJECTS IN SMALL INDUSTRY HAVE BEEN AN OPTICAL PRODUCTS MANUFACTURER REORGANIZATION, DEVELOPMENT OF FLAX STAPLE MACHINE AND SYNTHETIC FIBERS FOR WIGS. THE INSTITUTE'S NEW TECHNOLOGY DELIVERY PROGRAM IS PRESENTED.

DEVELOPING COUNTRIES/KOREA/INDUSTRIES/ENTREPRENEURSHIP/CONSULTING/TECHNOLOGY TRANSFER/BUSINESS MANAGEMENT

315

ZUKAS, S.B.

1975

IRRIGATION AND SELF RELIANCE.

APPROPRIATE TECHNOLOGY 2(2):8-9.

A LIMITED EXPERIMENT IN RURAL DEVELOPMENT BASED ON SELF RELIANCE WAS CONDUCTED FOR THE NATIONAL COUNCIL FOR SCIENTIFIC RESEARCH IN 1969. THE SCHEME TAKES ADVANTAGE OF IRRIGATION BY GRAVITY ONLY. SOCIAL REASONS FOR SELECTING THE GRAVITY FEED SYSTEM ARE PRESENTED. CROPS ARE LIMITED TO CERTAIN VEGETABLES. AN ASSESSMENT AFTER THREE YEARS IS GIVEN.

DEVELOPING COUNTRIES/ZAMBIA/IRRIGATION/WASTE WATER/WATER CONVEYANCE/
CATCHMENTS

SUBJECT INDEX

ADOBE	0174				
AFGHANISTAN		0201	0232	0207	
AFRICA		0250		0257	
	0224				
	0306				
AGRICULTURAL WASTE				0119	
	0134	0206		0297	
AGRICULTURE			0004		
	0012	0040	0048		
	0049	0050	0051		
	0060	0082	0083		
	0085	0094	0097		
	0104	0140	0146		
	0173	0178	0191		
	0194	0210	0222		
	0227	0232	0247		
	0248	0249	0259		
	0268	0287	0309		
AIR POLLUTION			0159		
ALGAE	0048				
ALGERIA		0060			
ALTERNATIVE FUELS				0072	
	0134	0201		0246	
	0281				
ANAEROBIC DIGESTORS		0095		0046	
	0089			0169	
	0170	0213		0246	
ANIMAL POWER			0057		
	0080	0096	0117		
	0134	0179	0180		
	0225	0227	0249		
	0270	0281	0304		
	0313				
AQUACULTURE			0048		
	0059				
BAMBOO		0038		0066	
BIBLIOGRAPHIES	0114		0030		
	0041	0046	0167		
	0168	0174	0206		
	0246	0277	0279		
	0301				
BIOFUELS		0206		0213	
BOATS		0032	0136		
	0184				
BOLIVIA		0236			
BOTSWANA		0096			
BRAZIL		0034	0236		
BRICKS		0037	0044		
	0078	0131	0174		
	0200	0201	0208		
	0235				
BUILDING DESIGN			0017		
	0033	0044	0079		
	0099	0163	0174		
	0184	0198	0200		
	0235				
BUSINESS MANAGEMENT			0029		
	0040	0106	0107		
	0108	0152	0254		
	0273	0314			
CASSAVA			0165		
CATCHMENTS			0101	0163	
	0194		0315		
CATTLE			0068	0215	
CEMENT			0046	0101	
	0136		0184	0234	
	0795				
CEYLON			0170		
CHILE		0230			
CHINA		0065	0136		
	0140	0216	0308		
CLOTHING			0039	0091	
	0171				
COCOA		0040			
COFFEE			0170		
COLOMBIA			0129	0236	
COMMUNES			0136	0290	
CONSERVATION				0011	
	0027	0044		0049	
	0050	0053		0062	
	0100	0118		0153	
	0175	0178		0264	
	0289				
CONSTRUCTION			0079		
	0182	0198	0287		
CONSTRUCTION MATERIALS					
	0033	0037	0038		
	0054	0056	0078		
	0079	0080	0099		
	0131	0174	0234		
	0294				
CONSTRUCTION METHODS				0017	
	0031	0032	0033		
	0038	0044	0078		
	0080	0099	0136		
	0163	0174	0184		
	0208	0246	0294		
CONSULTING			0004	0016	
	0020	0029	0047		
	0051	0052	0055		
	0073	0076	0094		
	0098	0105	0106		
	0107	0108	0114		
	0116	0139	0151		
	0152	0157	0181		
	0194	0199	0209		
	0218	0236	0272		
	0273	0288	0314		
CONTROLLED ENVIRONMENT					
	0048				
COOPERATIVES			0046		
	0114	0195	0222		
	0230				
COPPER			0190		
CORN		0288			
COST-BENEFIT ANALYSIS					
	0036	0011	0015		
	0034	0039	0043		
	0044	0057	0075		
	0082	0119	0136		
	0157	0171	0176		
	0194	0200	0201		
	0205	0210	0214		
	0235	0247	0262		
	0283	0293			
COSTA RICA			0002		
CROP PRODUCTION				0013	
	0021	0040		0048	
	0049	0069		0096	
	0119	0123		0166	
	0170	0179		0210	
	0227	0247		0252	
	0261	0297		0304	

DECISION MODELS		0008
0021	0022	0041
0060	0075	0092
0114	0135	0143
0155	0197	0204
0202	0212	0233
0267	0282	0292
DESALINATION		0151
DEVELOPING COUNTRIES		0002
0003	0004	0006
0007	0008	0009
0012	0013	0014
0015	0016	0019
0020	0021	0022
0024	0025	0026
0027	0028	0029
0030	0031	0032
0033	0034	0035
0036	0037	0038
0039	0040	0043
0044	0045	0046
0047	0051	0052
0054	0055	0056
0057	0058	0059
0060	0061	0063
0064	0068	0069
0070	0071	0073
0075	0076	0077
0078	0079	0080
0081	0082	0083
0084	0085	0086
0087	0088	0089
0090	0091	0092
0093	0094	0095
0096	0097	0098
0100	0101	0102
0103	0104	0105
0106	0107	0108
0109	0110	0111
0112	0113	0114
0116	0117	0119
0121	0122	0123
0124	0125	0126
0127	0129	0130
0132	0133	0134
0135	0136	0137
0138	0139	0140
0141	0143	0144
0145	0146	0148
0149	0150	0152
0153	0154	0155
0156	0157	0159
0160	0161	0162
0163	0164	0165
0166	0167	0168
0169	0170	0171
0172	0173	0176
0177	0179	0180
DISEASE CONTROL		0019
0159	0160	0170
0215	021E	0295
DRAINAGE		0256
DRYING		0013
		0311
		0313
ECCLOGY		0048
0147	0159	0136
0267	0289	0226
ECONOMIC ASPECTS		0009
0025	0035	0037
0040	0041	0044
0062	0063	0064
0067	0077	0081
0084	0092	0100
0109	0116	0127
0132	0135	0144
0146	0147	0150
0154	0177	0181
0190	0192	0196
0202	0203	0209
0210	0211	0219
0226	0233	0239
0240	0250	0251
0262	0265	0283
0289	0291	0302

ECCSYSTEMS		0048	0151
ECUADOR		0088	
EDUCATION		0003	0004
	0056	0060	0063
	0081	0085	0088
	0093	0106	0107
	0110	0114	0129
	0146	0160	0168
	0173	0195	0236
	0237	0243	0260
	0273	0284	
ENERGY		0011	0021
	0049	0050	0053
	0055	0056	0060
	0062	0072	0093
	0111	0175	0178
	0206	0207	0223
	0226	0246	0296
	0297	0298	
ENTREPRENEURSHIP			0004
	0020	0026	0051
	0063	0077	0084
	0094	0105	0108
	0116	0139	0141
	0152	0157	0194
	0195	0199	0209
	0240	0254	0273
	0284	0291	0302
	0314		
ETHIOPIA		0080	0086
EXCREMENT		0172	0243
		0017	0089
	0095	0167	0213
	0294	0310	
FARM EQUIPMENT			0013
	0031	0040	0045
	0046	0056	0057
	0068	0069	0077
	0082	0083	0096
	0097	0104	0117
	0123	0174	0125
	0134	0139	0148
	0161	0165	0166
	0179	0180	0209
	0210	0218	0225
	0227	0232	0248
	0249	0252	0256
	0264	0266	0270
	0304	0313	
FERTILIZERS			0048
	0049	0069	0170
	0247		
FOODS		0006	0021
	0048	0049	0050
	0053	0059	0060
	0093	0116	0119
	0164	0170	0184
	0194	0214	0230
	0297		
FORECASTING			0001
	0008	0021	0118
	0197	0242	0290
	0236		
GHANA		0040	0144
	0173	0200	0209
	0239		
GLASS		0157	0209
GOVERNMENT			0002
	0050	0147	0040
	0194	0226	0192
GRAINS			0261
GROUNDNUTS		0013	0304
	0146	0013	0058
GROUNDWATER			0046
	0066	0070	0080
	0102	0103	0185
	0243	0287	0293
	0311		
GUATEMALA		0251	

HARVESTING		0040	0069	MACHINE DESIGN		0013
HAWAII	0210	0304			0039	0045
HULLING		0099			0055	0069
		0148			0070	0105
					0117	0123
					0124	0125
					0134	0148
					0153	0157
					0164	0171
					0185	0227
					0252	0269
					0270	0304
					0306	
INDIA		0015	0038	MAIZE		
	0039	0091	0095	MALAWI		
	0116	0197	0198	MALI	0101	0288
	0226	0235	0247			
	0249	0262	0291			
	0294	0306				
INDONESIA						
INDUSTRIAL DESIGN		0004	0201	MARINE PRODUCTS		
INDUSTRIES		0004	0009	MATHEMATICAL MODELS		0177
	0012	0025	0026		0242	
	0029	0035	0039	METAL WORKING		0046
	0040	0051	0058			0218
	0060	0063	0105		0141	0306
	0107	0110	0120		0300	
	0126	0136	0146	MEXICO		0236
	0149	0150	0152	MILLING		0091
	0154	0157	0172	MINING		0190
	0181	0187	0188	MOTOR POWER		0270
	0190	0194	0196		0298	0304
	0200	0201	0222			
	0235	0238	0239			
	0241	0250	0268			
	0269	0271	0272			
	0274	0276	0314			
INSTITUTION BUILDING			0129	NATURAL RESOURCES		0022
IRAN	0014				0027	0060
IRRIGATION		0048	0050		0061	0074
	0069	0070	0071		0100	0175
	0086	0124	0180		0203	0264
	0191	0225	0256		0271	
	0287	0293	0309	NEW GUINEA		0160
	0311	0315		NIGERIA		
				NITROGEN COMPOUNDS		0049
					0050	
				NUTRITION		0019
					0058	0280
					0297	
JAMAICA		0163				
JAPAN	0140					
				DATS	0304	
				ORGANIC FARMING		0011
					0049	0050
						0178
KENYA	0057	0106				
	0107	0108	0141			
	0150	0170	0196			
	0240					
KOREA	0004	0140				
	0314					
LABOR	0025	0035		PALM OIL	0209	
	0077	0091		PANAMA	0156	
	0093	0113	0144	PAPER		0120
	0146	0150	0154		0157	
	0183	0190	0196	PERU	0031	0220
	0199	0236	0239	PHILIPPINES		0004
	0250	0251	0276		0037	0123
	0282	0283	0291	POLAND		
LABOR MIGRATION		0007	0007	POLITICAL ASPECTS	0227	0010
	0076	0109	0116		0022	0028
	0132	0144	0182		0062	0072
	0239	0255	0257		0132	0133
	0284				0155	0177
LATIN AMERICA		0008			0211	0216
	0009				0255	0289
LEATHER		0091	0157	POPULATION CONTRL	0075	0081
	0168	0188				0006
LIVESTOCK		0068	0215	PROTEIN	0119	0263

RAINFALL		0295		
REFUSE		0021	0119	
REGIONAL PLANNING	0208		0290	
REMOTE SENSING			0027	
RESOURCE MANAGEMENT			0041	
	0043	0204		
RHODESIA		0068		
RICE			0045	
	0069	0040	0124	
	0139	0123	0304	
	0313	0166		
ROADS		0034	0192	
	0209	0243		
RUNOFF		0096	0163	
	C312			
SAHEL		0176		
SANITATION			0014	0017
	0167	0255		0287
	C794	C301		0310
SHOES		0116	0171	
	0172	0199		
SOCIAL ASPECTS			0005	
	0007	0008	0010	
	0012	0015	0021	
	0023	0024	0027	
	0028	0033	0035	
	0036	0040	0042	
	0046	0053	0056	
	0062	0064	0065	
	0067	0072	0081	
	0082	0083	0087	
	0090	0091	0093	
	0100	0104	0106	
	0108	0109	0112	
	0113	0119	0126	
	0127	0130	0133	
	0135	0138	0140	
	0145	0146	0147	
	0150	0155	0156	
	0158	0159	0161	
	0162	0173	0175	
	0176	0183	0189	
	0190	0193	0195	
	0202	0203	0210	
	0212	0214	0216	
	0220	0224	0226	
	0227	0225	0238	
	0234	0244	0245	
	0250	0251	0254	
	0255	0258	0259	
	0265	0266	0276	
	0278	0282	0283	
	0284	0285	0288	
	0289	0290	0307	
	0306			
SOIL AMENDMENTS			0247	
	0312		0247	
SOIL BACTERIA			0085	0247
SOIL TYPES				0247
SOLAR ENERGY			0046	
	0052	0056	0072	
	0173	0176	0186	
	0194	0206	0221	
	0246	0253	0279	
	0298			
SOLAR HEATING			0048	
	0072	0151	0166	
SOLAR POWER			0151	
SORGHUM		0304		
SOWING		0123	0166	
	0225			
SPINNING		0303		
SRI LANKA		0003		
STEAM POWER			0134	
SUDAN		0137	0163	

TANZANIA		0162		
TECHNOLOGY MEASUREMENT				
	0018	0064		0142
	0228	0292		
TECHNOLOGY TRANSFER				
	0006	0012		0004
	0028	0032		0024
	0036	0046		0033
	0051	0055		0036
	0063	0069		0073
	0081	0083		0090
	0094	0102		0103
	0105	0106		0108
	0110	0112		0130
	0132	0133		0146
	0150	0152		0156
	0157	0160		0151
	0168	0173		0181
	0182	0187		0185
	0189	0190		0193
	0194	0199		0207
	0203	0216		0218
	0219	0220		0229
	0231	0232		0241
	0242	0244		0250
	0251	0258		0259
	0260	0262		0265
	0275	0274		0285
	0305	0314		
TEXTILES		0039		0217
THAILAND				
THRESHING		0069		0225
	0304	0313		
TIMBER MANAGEMENT				0153
TOOLS		0031		0038
	0040	0046		0056
	0071	0105		0116
	0117	0157		0185
	0191	0232		0249
	0256	0269		0299
	0300	0306		
TOURISM			0092	
TRANSPORTATION				0034
	0038	0060		0192
	0305	0306		
TURKEY			0082	0092
UGANDA		0019		
URBAN PLANNING				0255
	0290			
USED EQUIPMENT				0128
USSR	0231			
WASTE WATER				0167
	0315			
WATER		0014		0015
	0030	0041		0043
	0060	0167		0186
	0194	0204		0287
	0294	0301		0309
	0312			
WATER CONVEYANCE				0048
	0052	0070		0137
	0167	0173		0293
	0309	0311		0315
WATER HARVESTING				0163
	0295	0312		
WATER POLLUTION				0159
	0310			
WATER POWER				0072
	0137	0206		0246
	0288	0298		

WATER PUMPING		0070
0102	0103	0122
0124	0185	0243
0287	0311	
WATER STORAGE		0101
0102	0103	0116
0163	0167	0194
0287	0295	0311
0312		
WELLS	0066	

WIND POWER	0048	0056
C069	0072	0086
C115	J151	J173
0206	0223	0246
0253	C286	0293
0311-		

WINNOWER	0252	
----------	------	--

ZAIRE	0233	
ZAMBIA	0190	0315

AUTHOR INDEX

ABERNATHY, W.	0001		
AFSHAR, F.	0044	0002	
AHIMAZ, F.J.		0003	
AIRYARATUE, A.T.	0004		
ALBA, M.		0005	
ALLAHWER, M.N.		0006	
ALTSCHUL, A.		0007	
ALTSCHUL, R.		0008	
ANGNYMDOUS	0010	0009	
	0013	0012	
	0016	0015	
ARIZONA STATE DEPARTMENT OF HEALTH, PHOENIX, ENVIRONMENTAL HEALTH SERVICES		0017	
ASCHMANN, H.		0018	
ASHLEY, J.	0019		
AUCIELLO, K.E.		0020	
AUSTIN, A.L.		0021	
AYRES, R.V.		0242	
BAKER, R.L.		0022	
BALCET, G.	0023		
BAR-ZAKAY, S.N.		0028	
BARANSON, J.		0024	
0025			
BARONGAN, E.		0026	
BARRY, L.	0027		
BASS, L.W.	0029		
BATEMAN, G.H.		0030	
BAUMAN, G.F.		0031	
BEACH, D.D.		0032	
BENDER, R.	0033		
BERGER, L.	0034		
BHALLA, A.S.		0035	
BOULDING, C.		0036	
BRAVO, A.	0037		
BRESNIK, B.		0036	
BREWER, J.W.		0021	
BRUCE, R.	0039		
BUCHELE, W.F.		0040	
BURAS, N.	0041		
BURCHARD, P.		0042	
BURIAN, F.	0099		
BURTON, I.	0043		
CAIN, A.	0044		
CAMPBELL, J.K.		0040	
0045			
CANADIAN HUNGER FOUNDATION, ONTARIO			
0046			
CAREY, R.G.		0047	
CASHMAN, T.		0048	
CLARAMITARO, B.		0049	
CLARK, W.	0050		
CLEMENT, G.H.		0051	
COE, B.P.	0052		
COLE, H.S.D.		0053	
COLLETT, J.		0054	
CONGDON, R.J.		0055	
0056			
COOPER, S.W.		0057	
CORNELIUS, J.A.		0058	
CROSS, D.	0059		
CUENOD, M.A.		0060	
D'OMBRAIN, G.L.		0151	
DALTON, A.J.P.		0061	
DALY, H.E.		0062	
DE, S.S.	0062		
DESCHAMPS, I.		0058	
DEVELOPMENT ACADEMY OF THE PHILIPPINES, MANILA			0063
DICKENSON, H.			0064
DOMMEN, A.J.		0065	
DONALD, G.		0066	
DONKIN, D.J.	0067		
DOWNING, C.M.		0067	
DUFF, B.		0068	
DUNN, P.D.		0069	
		0070	
EBRIGHT, J.		0071	
ECCLI, S.	0072		
EDDZIEN, F.C.		0254	
EIGGERS, H.	0073		
EMMERY, K.D.		0074	
ENKLE, S.		0075	
EREZ, A.		0076	
ESMAY, M.		0077	
ESTEIGER, J.T.		0078	
FATHY, H.		0079	
FERNANDO, D.		0080	
FIRTH, R.	0081		
FISCHER, J.L.		0082	
FISK, E.K.		0083	
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME		0084	
		0085	
FRAENKEL, P.		0086	
FRANK, A.G.		0087	
FRITS, J.		0088	
FRY, J.L.	0089		
FULFORD, D.		0090	
GAISER, D.		0077	
GANDHI, M.K.		0091	
GEARING, C.F.		0092	
GEORGIA INSTITUTE OF TECHNOLOGY, ATLANTA, ECONOMIC DEVELOPMENT LABORATORY, ENGINEERING EXPERIMENT STATION			0093
GEORGIA INSTITUTE OF TECHNOLOGY, ATLANTA, INDUSTRIAL DEVELOPMENT DIVISION, ENGINEERING EXPERIMENT STATION			0094
GHASWALA, S.K.		0095	
GIBBON, D.	0096		
GILES, G.W.		0097	
GLASER, W.A.		0098	
GOODMAN, L.		0099	
GORSYTH, D.J.C.		0100	
GROSS, B.		0101	
GUGGENHEIM, H.		0102	
	0102		
GUNKEL, W.W.		0103	
		0104	

HAMMOND, R.W. 0105
 HARPER, M.H. 0106
 0107 0108
 HARRID, J.R. 0109
 HARRISON, P.L. 0110
 HARVEY, J. C096
 HEARN, K. C111
 HENSON, L.S. 0112
 HERMANN, W.D. 0113
 HERNANDEZ-DIAS, P. 0114
 HITCHINGS, R. 0115
 HODA, M.M. 0116
 HOMMEL, R.P. 0117
 HOUSE, P.W. 0118
 HRUBECKY, H. 0296
 HUBBARD, K. 0096
 HUMPHREY, A.E. 0119

INTERMEDIATE TECHNOLOGY DEVELOPMENT
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 0133
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 0143
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 0147
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		0269			
		0270			
		0271			
		0272			
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