

SWP- 744

# Land Assets and Rural Poverty

Michael Lipton

WORLD BANK STAFF WORKING PAPERS  
Number 744

LIBRARY  
WORLD BANK  
FOR  
RECONSTRUCTION & DEVELOPMENT

JAN 7 1988

HD1131 .L57 1985 c.2  
Land assets and rural poverty /



SLC026565

\*\*\*  
HD  
1131  
.L57  
1985  
c.2



WORLD BANK STAFF WORKING PAPERS  
Number 744

# **Land Assets and Rural Poverty**

Michael Lipton

The World Bank  
Washington, D.C., U.S.A.

Copyright © 1985  
The International Bank for Reconstruction  
and Development / THE WORLD BANK  
1818 H Street, N.W.  
Washington, D.C. 20433, U.S.A.

All rights reserved  
Manufactured in the United States of America  
First printing August 1985

This is a working document published informally by the World Bank. To present the results of research with the least possible delay, the typescript has not been prepared in accordance with the procedures appropriate to formal printed texts, and the World Bank accepts no responsibility for errors. The publication is supplied at a token charge to defray part of the cost of manufacture and distribution.

The World Bank does not accept responsibility for the views expressed herein, which are those of the authors and should not be attributed to the World Bank or to its affiliated organizations. The findings, interpretations, and conclusions are the results of research supported by the Bank; they do not necessarily represent official policy of the Bank. The designations employed, the presentation of material, and any maps used in this document are solely for the convenience of the reader and do not imply the expression of any opinion whatsoever on the part of the World Bank or its affiliates concerning the legal status of any country, territory, city, area, or of its authorities, or concerning the delimitation of its boundaries, or national affiliation.

The most recent World Bank publications are described in the annual spring and fall lists; the continuing research program is described in the annual *Abstracts of Current Studies*. The latest edition of each is available free of charge from the Publications Sales Unit, Department T, The World Bank, 1818 H Street, N.W., Washington, D.C. 20433, U.S.A., or from the European Office of the Bank, 66 avenue d'Iéna, 75116 Paris, France.

Michael Lipton is professorial fellow in the Institute of Development Studies, University of Sussex (U.K.).

#### **Library of Congress Cataloging-in-Publication Data**

Lipton, Michael.

Land assets and rural poverty.

(World Bank staff working papers ; no. 744)

Bibliography: p.

1. Land tenure--Developing countries. 2. Land reform--Developing countries. 3. Rural poor--Developing countries. I. Title. II. Series.  
HD1131.L57 1985 333'.009172'4 85-16761  
ISBN 0-8213-0581-6

## ABSTRACT

Is private access to land the main insurance against rural poverty? Alternative forms of insurance—customary, cooperative, collective, or common-property terms; off-farm income; access to "free" spare land—appear to be dwindling, either in availability or in insurance value. In developing Asia and Africa private land forms an increasingly dominant share of rural productive assets. Yet, in unirrigated and unreliably rainfed places, there is no association between land owned or operated (between zero and five to ten acres) and poverty risk. Even tiny amounts of reliably watered land reduce that risk however. These facts appear to be due to interactive relations between groups of producers, rather than to statistical relations between farm size and income per person.

The tenancy relationship, however, does not uniformly increase or reduce poverty. Therefore (and even allowing for evasion), land reform, especially in well-watered areas, has been much more significant in reducing poverty—and tenure reform, much less so—than is often claimed.

Both reforms must increasingly be judged by their effects on the landless and near-landless poor, but the numbers and growth of this group are often overstated. In India perhaps 15-20 percent of people (not all poor) both depend mainly on agriculture for income and have no or minimal access to farmland. In Africa, although land scarcity and inequality are more serious than is often claimed, there is only a very weak link between farmland per household and income per person. As with undernutrition, so with landlessness: the evidence that fewer poor people are affected than is sometimes claimed increases the urgency and feasibility of ameliorative action.



## TABLE OF CONTENTS

	<u>Page</u>
ASSETS AND POVERTY: LAND.....	1
I. ASSET AND FOOD-LABOR-FOOD CONVERSION.....	1
(a) Types of inequality, types of asset: adders and conversion multipliers.....	1
(b) Asset control, poverty protection, and risks of piecemeal analysis .....	3
(c) Asset redistribution and poverty.....	4
II. POVERTY AND ACCESS TO LAND.....	5
(a) Where access to land might affect poverty less.....	5
1. Where allocation of land rights is egalitarian.....	5
(i) Customary tenure.....	5
(ii) Collectives.....	5
(iii) Co-operatives.....	6
(iv) Common property rights (CPRs).....	7
2. Where reliance on non-farming is high or rising fast.....	7
3. Where land is less scarce.....	8
(b) Normal-year poverty not reduced by micro-holding on "bad" land .....	8
(c) Good land in small amounts reduces normal-year poverty risk.....	11
(d) A little land versus poverty: how and why?.....	13
1. Land versus effort and risk.....	14
2. In normal years: the "inverse relationship"?.....	15
3. Capital types, poverty relationships, land quality.....	16
(e) Ownership, control and tenancy.....	17
1. Tenancy less important on "bad" lands.....	17
2. Does tenancy occur mainly for poverty-linked reasons?.....	18
(i) Redistribution by approaching optimal size?.....	18
(ii) Rising Ricardian rent, interlock, exploitation, regressiveness?.....	18
(iii) Why standard approaches misinterpret tenancy- poverty linkages.....	19

Table of Contents (Cont'd.)

	<u>Page</u>
3. Tenancy and size-group transfers.....	20
4. Tenancy, poverty and laborers.....	22
(f) Poverty, land reform, tenancy reform: assumptions about alternatives.....	24
1. The issues.....	24
2. Ownership or operation?.....	25
3. Comparing groups vs. comparing options.....	26
4. Poverty and agrarian restructuring.....	27
(g) Landlessness, micro-farming and poverty: choices of measure.....	28
1. Lack of household land operated or owned.....	29
2. Lack of arable land or of any land?.....	30
3. Landlessness, near-landlessness and land quality.....	31
(h) Some results for India.....	31
1. NSS data for 1971-72.....	31
2. Rural labor enquiry evidence.....	34
3. Supporting micro-evidence.....	35
(i) Landlessness and near-landlessness: non-Indian evidence.....	37
Tables.....	40
Footnotes.....	47
Bibliography.....	55

## I. ASSETS AND FOOD-LABOR-FOOD CONVERSION

### (a) Types of inequality, types of asset: adders and conversion multipliers

How different are rich people from poor people? Three useful contrasts, which are embedded in a basic economic relationship, are in respect to (a) dietary caloric intake relative to requirements, (b) labor use to obtain calories and other commodities, and (c) asset ownership or control.

The contrasts may be seen by comparing the richest and poorest decile by income-per-person in, say, rural India. 1/ The richest glutton cannot long survive while eating double the calories needed for good health; nor the hardest pauper, while eating half. Thus, in respect of (a), inequality between richest and poorest deciles cannot long exceed 4 to 1. 2/ In respect of (b), over 90 percent of adult men normally work at least 200 days a year in rural India in both deciles; women usually work in the poorest decile, rarely in the richest; and, of course, the search-costs, effort, and unpleasantness of work are much greater for the poorest. Yet, if the disutility of labor per person-year could be quantified, the bottom decile in rural India would probably not exceed the top decile in this respect by as much as 20 to 1. 3/ However, the difference between the deciles in respect of a major aspect of (c), financial plus physical capital assets owned per household, was in 1971-2 over 294 to 1 (Pathak et al., 1977, p. 507).

The relationship between dietary caloric adequacy, labor use, and asset ownership has two facets. First, assets permit the household that controls 4/ them (i) to add to the results of, or (ii) to multiply the conversion efficiency 5/ of, its caloric intake, via labor, into income and hence into edible calories and other commodities. Second, a household accumulates (or controls) assets to the extent that it obtains, and uses for that purpose, a surplus of commodities -- obtained by converting "raw" labor, and perhaps by multiplying or adding to the efficiency of such conversion by using assets -- over dietary needs. Diagram 1 (p. 46) illustrates the "multiplier" and "adder" roles of asset control in determining the extent to which a household can convert labor into food basics, surplus, and hence both poverty (or affluence) now, and the extra assets that can reduce future risks of poverty.

The diagram shows the role of four sorts of asset: human, financial, durable consumer (the family home, bicycle, etc), and real producer ("land" and "real capital", in most uses of those terms).

- o Human capital can yield returns only if used in conjunction with labor, hired out or on own account; thus skills and knowledge (and the education that brings them) always comprise a "multiplier" of the efficiency with which dietary calories are converted, via labor, into purchasing-power over needed calories, leaving a surplus for optional consumption and further asset acquisition.
- o Conversely, both financial assets and durable consumer assets always comprise an "adder" to income (value of necessary calories, other consumption, and saving) produced by labor; the amount added need not be constant, 6/ but is not normally affected by the amount or hourly returns of labor, or by the efficiency of direct conversion of labor into calories and surplus.
- o Owned physical production assets, like human (but unlike financial) capital, can be used as multipliers of the dietary calories purchasable from an hour of work (because they upgrade the productivity of that work) -- or of hours of work performable per 1,000 calories eaten (because machines, like skills, can reduce the physical effort per hour of given productivity). This multiplicative use of owned producer capital can take place either in one's own family enterprise, or when the equipment is hired out with one's labor, as when an employee hires out his oxen alongside his ploughing labor. Alternatively, owned physical assets, like financial (but unlike human) capital, can be loaned to others, for fixed or equity-based rent or interest, and in that role such assets are adders to the welfare generated for a household by its food-labor-food conversion process.

Poor people are conventionally characterized as having very few assets. Yet we are very ignorant of the relationship between the value and structure of a household's assets and the probability that household members are poor or ultra-poor (Lipton, 1983). A few general truths do emerge: primary education is generally, and increasingly, distributed less unequally than physical assets; smallstock, and sometimes milch cattle, are likelier to be owned by the poor than rural land; 7/ farmland, however, is the main asset owned by the rural poor, and housing by the urban poor; and so on. But we cannot do more than speculate about differences between ultra-poor, poor and non-poor in respect to the supply or demand curves of the four main types of asset: physical producer capital, human capital, durable consumer goods, financial claims. Still less do we know how such differences are linked to the roles of such assets -- multiplicative (skills), additive (financial, consumer), or optional (producer) -- in respect of the calories-labor-calories conversion process. Despite persuasive arguments that, in most developing countries, asset redistribution from growth represents the most promising feasible route towards reducing poverty, 8/ we are extremely ignorant about what assets poor and ultra-poor people are relatively likely to own, to manage with high returns, or to retain.

This paper on land seeks to present evidence on one type of assets controlled, under different circumstances, by various poor groups; hardly ever can we present a balance sheet of total assets and liabilities, in enough detail to compare their structure in (say) poorest, fifth, and richest income-per-person deciles. In no case, so far as the author has discovered, can we

show how income-per-person deciles differ in respect of their supply or demand functions for different sorts of assets. What sorts of assets are relatively readily accessible to (relatively low supply price for), or attractive to (profitability and hence demand high for), groups of persons at different risk of poverty? We do not know. As for the simpler facts of distribution, we know most about land.

(b) Asset control, poverty protection, and risks of piecemeal analysis

This paper will thus ask: to what extent, if any, do, or could, the Third World's poor and ultra-poor own or control the land asset? To what extent do the returns to the asset, if it is owned or controlled by the potentially poor, (a) protect them from poverty, (b) differ from the returns when the asset is controlled by the non-poor?

This asset-by-asset approach, with heavy concentration on rural assets and especially land, is forced on us by data limitations. It raises, however, two serious problems -- apart from the neglect of positive, or (less plausibly) negative, correlations between the probabilities of control over different sorts of asset. First, if a person does not own some types of asset, especially types with imperfect or expensively-accessed markets, that person's net yield from combining his labor with other assets may be substantially reduced. Thus education may impart skills, not readily hireable from others, enabling a farmer to increase net returns from land (Jamison and Lau, 1982; Chaudhri, 1979); or lack of owned oxen, in conjunction with imperfect markets in draught-power, may so reduce the return to owner-operated farmland as to induce the landowner to rent out (Pant, 1981, p. 16; Jodha, 1980, pp. 20-22).

Second, just because a group of poor people, A, increases its control over some asset and (whatever the causal sequence) also reduces its incidence of poverty, we cannot be sure that poverty also declines in the society of which those people are a part. Trivially, group A may have obtained more X at the expense of another poor or near-poor group, B, whose incidence of poverty rises; or A may increase ownership of asset X in the same process that reduces B's ownership of another asset Y. But suppose that X increases for A (so that A's poverty falls), and that the volume of X and of each other asset, owned by every other actually or potentially poor group B, C..., stays constant or rises. Nevertheless, the value of those assets may fall. Consider the asset "literacy". If half a nation's adults are literate, the literates' incidence of poverty is likely to be less than among the illiterate, because poverty and illiteracy help cause one another. If a further 25 percent of the adults become literate, but nothing else happens to the nation's capital stock or to technology, then those 25 percent probably also reduce their risk of poverty (both because lesser poverty helped some to acquire literacy, and because literacy helped others to escape poverty). But the newly-literate 25 percent may well increase the poverty risk for the 50 percent of "old literates" with whose skills they compete -- a higher supply of literacy, given the demand function, lowers the return to it. As for the 25 percent of "still illiterate" adults, such assets as they have (e.g. tools complementary with unskilled effort) may become less valuable, because literates now supply more, competing, skills and methods. Positive complementarities (in which literates pull up the productivity of illiterates, e.g. by supervising them better) are possible too, of course, but less likely if major non-human assets -- land, ploughs, factories -- function as fixed factors. Analogously, a road to market

may reduce the incidence of poverty among people in roadside villages -- but, if this is done by diverting fertilizer inputs (or lorries to market) away from other villages, poverty there may increase.

(c) Asset redistribution and poverty

A good case can be made for looking at either end of the scale -- access to dietary calories, or access to assets to multiply (or add to) the results of the calories-labor-calories conversion process -- to examine the characteristics of the poor and ultra-poor. The ultra-poor spend 60-70 percent of income on the cheapest dietary calories they can get (Lipton, 1983), so from the standpoint of those people it makes some sense to see calorie adequacy as the main poverty indicator. Conversely, the question, "How little work need a person do to be adequately fed?", is an appealing one, when measuring freedom from poverty (drudgery as well as hunger) and access to surplus (optional consumption as well as savings); yet the answer to that question depends largely on the assets, multiplying as well as adding to that person's calories-labor-calories conversion process (and social as well as private), accessible to the person. Calories are less unequally distributed than food, food than consumption, consumption than income, and income than assets. Hence, as we have seen, the richest decile can well be, at most, four times better placed than the poorest to meet calorie requirements for a full and active life -- yet three hundred times better placed in respect of asset ownership.

This latter vast discrepancy naturally focuses, upon asset redistribution, the attention of fighters of wars against poverty. Merely by taking one percent of the richest decile's assets, one could apparently multiply the poorest decile's fourfold. Even if the yield on those assets fell -- and it might well rise 9/ -- would that not eliminate most poverty, at negligible welfare cost? On the other side of the account, as it were, does not the economic inequality of asset distribution in most developing countries condemn the poor to a worsening situation, at least relatively, because (a) they are very much less likely than the rich to be able to acquire an economic surplus, (b) their existing low surplus compels them to select low-risk, and hence low-return, homes for such little saving as they can muster?

Our piecemeal examination of bitty data will largely skirt these issues. But it does cast two shafts of doubt upon the implications above. First, asset ownership turns out, where evidence is available (which is seldom), to be much more life-cyclic than income. Second, high assets are strongly associated with large households. Lifelong assets per person are probably very much less unequal than point observations upon assets per household might suggest. Yet these observations are all we usually get.

## II. POVERTY AND ACCESS TO LAND

### (a) Where access to land might affect poverty less

Are rural people significantly less likely to be poor if they have access <sup>10/</sup> to farmland? The question cannot arise within any region where rights in land are allocated in more or less egalitarian fashion. Also, landlessness is unlikely to be associated with poverty if land is not scarce. If land is both scarce and allocated according to economic or political power, then rural poverty is likely to be associated with landholding below a certain threshold (which falls as land quality rises). That association weakens to the extent that non-farm jobs or assets are readily available to, and offer comparable rewards to cultivation for, persons with little or no access to farmland.

#### 1. Where allocation of land rights is egalitarian

##### (i) Customary tenure

Studies of law and custom in African societies often claim that tribal authority or practice assigns to each family, or to each adult male, a cultivable area (settled or slash-and-burn) of a size dictated by the family's needs or by its available family labor. Land sales, rentals, and settlement by non-tribals are all, to varying degrees, supposedly restricted by such systems, and tribal authorities are often claimed to repossess and reallocate a family's land when the father dies.

In practice, these latter rights are hardly ever enforceable. Nor, as land acquires commercial value, are traditional authorities able and willing to prevent commercial transactions. The author has observed, in pre-revolutionary Ethiopia, how a myriad of complex quasi-feudal and religious tenures boiled down in practice to leasehold and freehold; and also how similar circumstances increasingly prevailed in Botswana in the late 1970s. Many others have made similar observations. The increasingly formal and empty nature in practice of the above juridical model of much "communal land tenure" in Africa was analyzed over twenty-five years ago (FAO, 1953). Even in West Africa, overt freehold is sharply on the increase (Goddard, 1970; Luning, 1965).

##### (ii) Collectives

Traditional egalitarian tenure, where it ever existed -- and accounts of it frequently "smell" of golden-age myth, rather than of fieldwork -- is disappearing as population densities, commercial relationships, and modern states advance. However, in some countries, "modern" forms of collective or co-operative land allocation on an egalitarian basis have become important. <sup>11/</sup> Do such systems decouple poverty from inadequate access to land? Little will be said here about this question, mainly for lack of evidence. We briefly consider collectives, co-operatives, and common property rights.

In China, a radically redistributive land reform was followed by a shift towards collective agricultural management, and more recently by substantial restoration of individual incentives and possibly rights. The first of these three changes drastically equalized intra-household incomes within particular localities, and the two subsequent changes appear to have

left this equalization virtually unaffected (workpoints did little to generate new intra-rural inequalities). Within work teams, and to a lesser extent brigades and even communes, access to public and private land, and hence income per person, has since the first reform (1948-53) been remarkably equal (Khan, 1977, pp. 258-71; Khan and Lee, 1983, esp. pp. 55, 118-22). However, these findings relate to irrigated areas, and echo other findings that a little irrigated land appears to ensure against extreme poverty (pp.11-14). The distribution among communes, and even more among rural areas, shows much inequality, and a prolonged regional famine in the early 1960s claimed millions of lives (Sen, 1983; Khan, 1977, pp. 269-70; White and Nolan, 1984). This indicates (a) that, in China as elsewhere (pp. 14-19), access to a small amount of bad or badly-watered land is not much better at preventing poverty than is "landless labor"; or (b) that "collective consumption", to raise the relative living standards of poorer areas, must have been very limited; or (c) that possible efficiency losses (due to collectivization, cultural revolution, etc.) may in such areas substantially offset the equity gains from land reform.

(iii) Co-operatives

In Latin America, there are persistent and apparently well-informed suggestions -- though not much evidence -- that co-operative farming systems, while successfully redistributing rights in land to formerly poor tenants, have been accompanied by characteristically big-farm, labor-displacing management practices. Such practices are designed to secure the welfare of the (now not-so-poor) co-operators. However, this is achieved at the expense of potentially ultra-poor landless laborers -- often homeless migrants -- who lose their jobs to tractors and combine harvesters. In combination with preferential credit arrangements for co-operators, which neglected the even poorer minifundistas (and totally excluded the much poorer laborers), this has, in the Peruvian case, almost certainly led to a worsening in the incomes of the poorest (Alberts, 1981, pp. 170-2). It would be wrong to blame land redistribution from rich to moderately-poor for the harm to the poorest; blame appears to attach to inappropriate, and often imposed or subsidized, systems of large-scale mechanized co-operative farming.

In India (and elsewhere in South Asia) there have been occasional experiments with voluntary co-operative joint farming, supported by initial public-sector investments in land and water improvement. Such experiments, as in Latin America, have sometimes been based on ill-advised attempts to subsidize large scale, centralization, and mechanization in traditional agricultures. However, there are interesting and apparently successful exceptions, typically where a substantial part of village land, after improvement, has been divided among small groups, which retain most of their output, in effect exchanging the remainder with the Society for shared services. In 1963-4, in four villages of Kaira District, Gujarat, some 248 members (in 20 groups) reported ten years of apparently favorable, and largely unsubsidized, experience with this system. Most of the cultivators were initially landless, but had farmed previously (they had been flooded out); 88 of the 102 members from the main participating village, Kothiakad, were from the dominant Rajput caste, as against 66 of the 99 non-member households (Bambal, 1966, pp. 31-42). Despite the known weaknesses of such arrangements -- notably the drift of benefits to the less-poor and more-powerful, noticeable here also -- clear gains to the landless and near-landless poor, though not to

the poorest, do seem to have materialized. An interestingly analogous case is reported from Romania: use of nuclear families as spontaneous organizers of labor, each benefiting from its own inputs and organization, appears to have increased both efficiency and perceived benefit in co-operative farming (Cernea, 1975).

(iv) Common property rights

A third form of egalitarian rights in land involves common property rights (CPRs). These can inhibit poverty by providing equal access to grazing land, wild foods for gathering, firewood, and (rarely) hunting. CPRs are always under twin threat, from population increase and from "the tragedy of the commons". <sup>12/</sup> These threats sharpen as the state -- in eighteenth-century England, in Rajasthan since the 1950s, or in Botswana to support the oddly-named "Tribal Grazing Lands Program" <sup>13/</sup> -- switches support from the maintenance of CPRs to their replacement, through enclosure of common land, by individual ownership and rights to privately marketable usufruct.

Jodha has collected dramatic evidence, for two villages in each of two districts of Rajasthan (Nagaur and Jodhpur), of the decline of CPRs between 1953-4 and 1972-3. In the Nagaur villages, common grazing fell from 58 percent of all grazing land to 28 percent, and in Jodhpur from 56 percent to 29 percent. Animal watering points fell from 10 to 8 and from 17 to 9 respectively. Of the 588 ha. of CPRs "privatized" over two decades in the four villages, only 12 percent were acquired by persons previously landless (i.e. previously reliant on access to the 100 percent of CPR area), a further 12 percent by small farmers (below 5 ha.), and just over 60 percent by farmers with over 10 ha. before acquisition (Jodha, 1983, Tables 4, 6, 7).

The consequences must have been most serious for the poor, who have fewer private property rights. In 1972-3, in six villages in Rajasthan, CPRs comprised 42 percent of gross farm income for "laborers and small farmers", but only 15 percent for "large farmers" (Jodha, 1983a, p. 8). Given the role of market forces and of State-sanctioned "enclosures" in the privatization of common land -- and the increased degradation of the remaining commons, squeezed between growing human (and animal) populations and declining non-privatized areas -- CPRs, like tribal allocation, promise little protection to the poorest.

A serious special problem is created for tribals, tenants, and other land operators without title (and generally likelier to be poor) in the wake of irrigation schemes, ranching enclosures, or other developments. Such people are seldom compensated, yet lose the land they farmed. Often -- as with slash-and-burn cropping, or transhumance -- their land uses are completely overlooked by the development agencies.

2. Where reliance on non-farming is high or rising fast

I. Singh (1981) remarks that "landlessness" in rural India may be good or bad (and its growth therefore an improvement or a deterioration) according to whether the "landless" are able to rely (increasingly) on income from non-farm labor or assets. Even in fairly stagnant rural areas of Northern Nigeria, those with no, or small, holdings -- and reliant on non-farm activity -- are often the best off. The correlation between land owned and monthly expenditure per person (MEP) is thus very weak there (Simmons, 1976).

In India in 1977-8, the proportion of rural households mainly dependent on non-farm incomes was only 19.4 percent in Bihar, 21.7 percent in Gujarat, and 22.1 percent in Maharashtra, and 24.9 percent in Andhra -- but 27.8 percent in West Bengal, 29.6 percent in Tamil Nadu, 28.3 percent in Haryana, and 30.9 percent in the Punjab (Sarvekshana, 1982). Non-farm households were much less liable to poverty levels of MEP. In the last four States, landlessness is being de-linked, to some degree, from poverty.

### 3. Where land is less scarce

Related to the steady individualization of Third World land rights -- a process linked, in turn, to the erosion or enclosure of rights to graze, to gather wild foods, and otherwise to enjoy once-common property (Jodha, 1983 and 1983a, for India; Hitchcock, 1979, for Botswana) -- is the increasing scarcity value of land. Population growth, the slow and not very job-creating nature of industrialization, and sometimes "loss of ground" (especially to erosion: Eckholm, 1976) and a shift of demand from cereals to land-extensive meat and dairy products, 14/ have combined to raise demand for land, in efficiency-units, relatively to supply, even in areas where land was until quite recently thought to be plentiful. The process is intensified by the existence of non-land constraints or near-constraints 15/ (e.g. on security against theft for too-remote plots; on seasonal labor for bird-scaring) which increase the attractiveness of intensifying the use of existing land, rather than cultivating more (Lipton, 1979a). Land really worth farming, increasingly, is almost everywhere scarce.

If land is scarce, and not generally allocated through effective egalitarian systems, it is plausible that lack of adequate access to land rights and rural poverty are associated. Seven in ten South Asians, perhaps eight in ten Africans, depend mainly on agriculture for a livelihood. Only in a few "bright spots" is the ratio, by value, of fixed and variable capital inputs to land inputs high in these agricultures. Land, therefore, is overwhelmingly the main rural productive asset by value.

#### (b) Normal-year poverty not reduced by micro-holding on "bad" land

Yet a fairly clear line can be drawn between places where access to two or three acres is associated with greatly reduced risk of poverty, and places where those who rely on labor-power alone are not significantly likelier to be poor than those who work small landholdings. Many readers of Visaria (1978) were surprised by his findings on this matter (reproduced here as Table 1) for rural Gujarat and Maharashtra in 1972-3. The proportion of "all households" below the poverty line 16/ does not clearly decline, as owned landholding rises, between the landless and those with above 7.5 acres in rural Gujarat, and above 10 acres in Maharashtra. This applies also to the separate occupational groups. 19 percent of households in rural Gujarat depended mainly on income from farm labor in 1972-3, and 34 percent in rural Maharashtra; respective figures for households dependent mainly on cultivation were 63 percent and 46 percent. Of these four groups, only cultivation-dependent households in Maharashtra, and those only as holding size rose between 1 and 5 acres, showed a clearly falling poverty incidence as "landedness" rose. Other occupational groups -- artisans, government employees, etc. -- also showed no clear linkage between poverty and landholding until ownership became really substantial, but this is less surprising than for farmers and farm laborers (Visaria, 1978, pp. 14-15).

This phenomenon -- that in poor areas, where land is unirrigated and not reliably rainfed, people in households owning to 3-10 acres are as seriously at risk of poverty as the landless -- has been quite widely observed, both for ownership and for operational holdings. Using the latter definition, the ICRISAT study of six villages found that "medium and small-farm and landless-labor households...had average net per capita incomes across villages and cropping years that were almost the same" (Singh, Asokan and Walker, 1982, p.26). In Botswana, only really large holdings provided increased insurance against poverty (Watanabe and Mueller, 1982, Table 3). In poor regions of both north-east Thailand and northern Nigeria, farm and non-farm income were strongly negatively correlated, so that once again farm size was unlinked to freedom from poverty except in the largest size groups (Priebprom, cited by Meyer and Alicibusan, 1983, p. 16; Simmons, 1976). Among 274 farmers in 14 villages of Kwara State, Nigeria, in 1973, income per person -- perhaps because positively and significantly correlated with the proportion of household income from non-farm sources -- showed absolutely no significant relationship to farm size, even though (unusually, and laudably) that was measured per person (Olayide and Essang, n.d.).

One looks, first, to demographic explanations. In rural Gujarat in 1972-3, households dependent mainly on farm labor income averaged 5.0 persons if landless, rising steadily to 7.0 persons where 5-7.5 acres were owned; the comparable rise for rural Maharashtra was from 4.3 to 6.2 persons. Mainly cultivation-dependent households steadily rose in average size from 5.1 if they owned up to 1 acre to 6.1 (5-7.5 acres) in rural Gujarat, and from 3.3 to 5.3 in rural Maharashtra (Visaria, 1978, p. 87). 17/ These increases are significant -- we return to the implication for the land-poverty nexus below -- and do mean that the middle-range landowners had to feed more mouths than the near-landless. But the effect is much too small to account for the virtual identity, not just of the proportions of households below an inevitably arbitrary poverty-line in each of the five land-ownership groups from zero to 7.5 acres, but also of the decile-wise distribution of monthly outlay per person in each group. 18/

Another possible demographic explanation, for the absence of a link between lowered risk of poverty and escape from landlessness in these and other semi-arid areas (Singh, Asokan and Walker, 1982, p. 26, for Indian villages) is life-cyclical. Perhaps the landless tend to be young, active, and with many earners and few dependants, whereas these conditions are less common as one advances up the scale of landholding toward 5-7.5 acres? In rural Gujarat in 1972-3, the proportion of household heads aged under 29 -- almost all over 15 -- indeed fell steadily from 23 percent among the landless, to 10 percent among owners of 5-7.5 acres; rural Maharashtra was similar. However, the dependency ratio (persons not aged 15-59 as a proportion of persons aged 15-59) seems also to decline over this range of increased landholdings in rural Gujarat. There, too, the proportion of person-days spent in workforce participation rises from 38 percent for the landless (55.5 percent for persons aged over ten) to 42.7 percent (61.0 percent) for households owning 5-7.5 acres; and, as in rural India as a whole, the proportion of participant-days spent in involuntary unemployment falls sharply, from 13-15 percent to 3-4 percent, over this range (Visaria, 1978, pp. 102, 105, 109, 113). Demographic structures appear to make it more surprising that small and medium-small landowners are, on average, in these areas at no greater risk of falling into the poorest income deciles than are those who own no land.

Two possible statistical explanations can also be dismissed. It might be the case that holdings below 5-7.5 acres were on much better land than were larger holdings, so that, if allowance were made for quality, the expected relationship between a landholding, even a small one, and lowered poverty risk would be re-established. Or it might be the case that some places, within these big States, featured 5-7.5 acre holdings, bad land, and poverty, while other places featured 0.5-5 acre holdings, good land, and less poverty; if so, it would be the aggregation into statewide NSS samples which produced an illusion that more land, up to a 5-7.5 acre level, did not reduce poverty risk. We can rule out these explanations, however, because the near-constancy of poverty incidence between the landless and the small landed also appears from several studies of single villages within Western India, and indeed from other work in semi-arid areas.

We can be fairly confident that these non-relationships in big samples over large areas, between poverty incidence and access to smallish amounts of bad land, are not accidents of "ecological fallacy" (Dasgupta, 1977). This is because successive localized disaggregations do not appear to restore a link between poverty and landlessness. First, Visaria himself regionally disaggregates his big samples -- 5563 households for rural Gujarat, 5329 for rural Maharashtra -- into, respectively, five and six zones, each with eight landowning groups (from zero to over 20 acres). In Gujarat, the proportion of landholders in poverty -- below Rs.38.90 MEP in 1972-3 -- begins clearly to fall with increasing holding size only above 7.5 acres in two zones, and above 5 acres in two; only in one zone, the Northern Plains, is there a consistent inverse relationship between incidence of poverty and land owned per household. In Maharashtra, not one zone shows such a relationship for the landless and smallest farmers; it begins at 5 acres in two zones, at 7.5 in one, and in three zones not until ten acres are owned (Visaria, 1978, pp. 10-11).

Second, other work has disaggregated to a much lower level, and has looked at farmland-poverty relationships for villages over several years (Visaria's findings for Gujarat might be partly due to the fact that 1972-3 was a drought year in some places, since drought seems to reduce income more than in proportion to farm size: Desai et al., 1979). In six semi-arid villages averaged over three years (1975-6 to 1977-8), income per person averaged Rs.393 in households operating below 0.2 ha., Rs.388 for "small", Rs.398 for "medium", and Rs.730 for "large" farms; not one village showed income-per-person increasing both from the group operating no land (or below 0.2 ha.) to "small" operators and from "small" to "medium" (Singh et al., 1982, p. 18). In two villages of Chengalpattu District, Tamilnadu, consumption expenditure in 1976 per household averaged Rs.1965 for 104 "landless peasant households" (38 non-landowning, but farming 0.25-1 acre of leased-in land; plus 66 without operational holdings but living mainly from farmwork); Rs.1974 for 55 "petty peasant" households (owning below 2 acres and operating below 5 acres); and Rs.2191 for 25 "medium peasants" operating 5-10 acres (Shivakumar, 1978, pp. 762-3, and 1978a, p. 817); household size is not given, but we know enough about the generally larger household size of bigger landholdings to be fairly confident that the small differences among "landless, petty, and middle peasants" in incomes-per-person were not significant at 5 percent.

Still in largely rainfed areas of India, a cross-sectional study of ten villages in Central Gujarat (B. Singh, 1980, pp. 101, 106) suggests that

small operational holdings conduce to poverty much less if they are typical of a village, than when brought about by intra-village inequality. The proportion of village households too poor to afford 2250 calories per consumer unit daily correlated, across the ten villages, (a) significantly at 1 percent ( $r=.723$ ) with each village's Gini coefficient of operated landholdings, but (b) not significantly with the average size of holding, per consumer unit, in operating households (B. Singh, 1980, pp. 101-5). The three villages with most unequal operational landholdings (on several measures) show highly significantly more and severer poverty than the other seven villages, and hence a higher "Sen index" (B. Singh, 1981, pp. 206-10, 225-9).

(c) Good land in small amounts reduces normal-year poverty risk

Thus the move from landlessness up to 3-10 semi-arid rainfed acres, depending on land quality, does not greatly reduce a household's risk of poverty. Neither demography, nor the (anyway very doubtful) view that smaller farms comprise "better" land, accounts for this fact. If Singh's work, just cited, is confirmed in other studies, it may be that large holdings adopt crop-mixes, machines, or low cropping-intensities that displace labor from both the landless and the deficit farms; but it is not clear why the latter two groups should be reduced to similar levels of indigence.

The explanation may well depend critically on the following probable fact (evidence for which is given below). A little land fails to cut poverty risk in an average year — though it may still reduce the effort needed to secure a given (low) income, or to provide a critical reserve in a year of bad harvest — only where farming is mostly extensive, unimproved, and without water control. There, a deficit or small surplus farm is frequently (to use the terminology of writers on eighteenth-century English farming) an "encumbrance"; elsewhere, a "competency" that indeed sharply reduces the risk, in a typical year, of falling into indigence. The importance of this "competency" is suggested by evidence from three Indian regions of intensive, water-controlled, and increasingly modern farming: the Punjab, coastal Andhra Pradesh, and West Bengal.

In the Punjab, from 1963-4 to 1973-4, the incidences of poverty, ultra-poverty, and an intermediate measure 19/ showed clear, substantial downtrends (though with major fluctuations: see Mundle, 1982, pp. 7, 10). Yet, in a State-wide inquiry in 1974-5, of 140 sampled households depending on cultivation as their main source of income but operating 0.1 to 2.5 acres, 31.4 percent were below the poverty line — as against "only" 23.6 percent of 326 operating 2.5 to 5 acres, and 19.1 percent of 404 operating 5 to 7.5 acres (Bhalla and Chadha, 1982, p. 826, and 1982a, pp. 875-6). Households depending on farm labor as their main source of income showed "real wage rates fluctuating [in the range of Rs.2.50 to Rs.3.50 at 1960-61 prices] without a sustained tendency to rise or fall" from the early 1960s to the mid-1970s (Mundle, 1982, pp. 27, 29). Annual days of employment, while available only for a few years, showed no uptrend. This has left real wage income per male agricultural laborer, from farm and non-farm labor together, in rural Punjab and Haryana roughly constant ever since the mid-1950s (ibid., pp. 31-3). Unless distribution among agricultural laborers improved, therefore, their incidence of poverty can have fallen only if there was a rise in the income of those laborers who derived some 20/ income from operating or renting out land, or if the employee/consumer ratio rose sharply. The 47 percent rise in real

annual income of farmworkers operating no land between 1964-5 and 1974-5 presumably goes with a sharp rise in small-scale renting-out (see p. 21 below), but it is notable that if such workers operated land their real annual income rose much faster, by 79 percent.

Indeed, in Punjab and Haryana in 1964-5, when really small farm operators were not so different from those in less-favored States, farm-labor households averaged Rs.121 of income-per-person if they did not operate any land, and marginally less, Rs.119, if they did. By 1974-5, when even tiny farms had adopted modern seed-fertilizer packages, respective figures were Rs.178 and Rs.213 - almost 20 percent more for laborers with a "competency" (Mundle, 1982, p.34). By the mid-1970s, whether a Punjabi household depended mainly on farm labor or on cultivation, any increase in its operational landholding was likely to reduce the risk of poverty substantially.

In micro-surveys among households mainly dependent on rural employment income in the rich, irrigated soils of West Godavari district, Andhra Pradesh, land ownership was associated, significantly at 1 percent, with absence of poverty (i.e. income-per-head above Rs.300 -- i.e. 500 kgs. of paddy, in 1972-3: Parthasarathy, 1977, pp. 44-5). An extra acre raised the laborer household's income-per-person by Rs.210. A large part of the reason is that involuntary unemployment comprised a much larger proportion of time for laborer households without than with land, especially in the less-busy rabi season (Parthasarathy and Rama Rao, 1973, p. A-12). In the 1972 inquiry into farm labor households, in ten villages, 28 of 68 non-landowning households enjoyed less than Rs. 250 of yearly income -- as against 2 of the 32 landowning households (ibid., p. A-126) -- despite the obvious fact that holdings of this generally good land must have been tiny, relative to a household's size, to compel it to rely mainly on labor income. The contrast to the largely unirrigated and semi-arid areas could hardly be sharper.

In West Bengal, for agricultural labour households (i.e. 50 percent or more of income from agricultural wages), the probability of falling below the poverty line - Rs. 15 per head at 1960 prices - declines significantly with the size of cultivated area of the household. For the primarily cultivator households, this probability again declines with cultivated area, but increases with the square of cultivated area (Bardhan, personal communication, 1984, referring to Bardhan, 1984). Hence farm labourers - who farm very little land anyway - improve their chances of escaping poverty by doing so; and for cultivators, while plainly those with less land are poorer than those with more, the anti-poverty impact per acre of a little land seems to be greater than that of much land. Bardhan (personal communication) suggests that this may "indicate some effect of the standard inverse relationship between size and productivity" of landholding; this relationship works much more strongly and clearly on irrigated than on unirrigated land, which may be another reason for the sharp contrast between these three States and the results obtained by the Visaria for the less-irrigated States of Western India. Anyway, in the three Indian States discussed in the last paragraphs -- where much land is irrigated, improved, and/or sown to high-yielding crop varieties -- access to even a little typical land considerably reduces the probability of poverty. In poorer places it does not. In intermediate cases, the advantage of the small landed over the landless is not massive but is extant. In 1965-6, in Matar Taluka, Gujarat, farm laborers averaged monthly expenditure per person (MEP) worth 242 kg. of paddy, as against 305 kgs. worth

for cultivators of 0-5 acres -- but 30 percent of the latter's land was irrigated, giving them much better prospects than typical Gujarat smallholders (Shah and Shah, 1974, pp. 78, 248). At all-India level, the upshot is clearly reflected in Table 2 (taken from Sundaram and Tendulkar, 1983, p. 59). Of the two main rural household groups -- those for whom the main income source was working on land controlled by others, and those for whom it was working on self-operated land -- the former in 1977-8 had about half the incidence of "poverty" as defined by the NSS. Of course, a small proportion in the latter group controlled large amounts of land; but this huge difference in the incidence of "poverty" between cultivators and farm workers must be explained mainly by the fact that under irrigated, improved or modern farming conditions access to a little land is access to reduced poverty incidence in a normal year.

This is confirmed by evidence from intensive irrigated farming areas outside India. In a village of West Java, farm size appears to be the overwhelming determinant of expected income, even at minute levels (Sanusi, 1982).

In a survey of 161 villages in Egypt in 1974-5, the proportion of households with average cash outlay per household below LE 100 was 26.5 percent for "pure" farm laborers, 17.2 percent for farm operators of below 1.04 acres, and only 6 percent at 1.04-3.12 acres (Harik, 1979, pp. 109-12). Lower subsistence income must have substantially increased, and smaller household size somewhat reduced, this apparent 3-to-2 disadvantage of the landless in poverty incidence as compared with even very small farmers.

In the Philippines, many small farmers, including tenants, have escaped from poverty due to agricultural progress; but laborers, already poor, have probably got poorer. In Laguna, "farmers who also worked as laborers" -- plainly small cultivators -- "earned about three times what a purely hired laborer earned" when surveyed in the early 1970s (J. and D. Rosenberg, 1980, pp. 82-5). An intensive survey of 16 households in Abangay village, Iloilo district, during the 1977-8 dry season showed consumption per consumer unit 21/ at 69.7 pesos monthly for three "young landless" households, 52.3 for five "older landless", 77.9 for four "small" tenant farmers, and 84.6 for four "medium" (Ledesma, 1982, pp. 22, 50).

(d) A little land versus poverty: how and why?

Access to even a little bit of land, despite being associated with larger household size, is associated with lower probability of poverty in an average year -- if, and only if, the land offers prospects of a reasonably high net return per acre. If, as seems likely but is not proven, the causation runs from "a little good land" to "lower poverty incidence", then the above fact strengthens the equity case for land redistribution where land is irrigated, improved, or otherwise of high quality -- and weakens it elsewhere. However, that fact is not the whole story. 22/ Might smallholders, even if able to spend no more than landless laborers in a typical year from their work on traditionally farmed and unimproved land, yet have some poverty-reducing advantage over them? Anyway, why does a little land access increase MEP if, but only if, land is improved and hence increasingly valuable and scarce?

These two issues probably help to explain the unfortunate fact that trends towards concentration of owned and (especially) operated farmland are rather often demonstrable where land is irrigated, high-yielding, etc., and not elsewhere. In other words, where in typical years farmland (increasingly) protects against low incomes, potentially poor people increasingly lack access to it; but where it is not worth much, their share in access to it is steady or even increasing.

1. Land versus effort and risk

This statement needs at least two qualifications, however, because "income (or expenditure) per consumer-unit in a typical year" omits at least two land-related components of security against poverty. The first component is a person's capacity to avoid wasted effort in labor markets. Unemployment rates, search-costs, time (and calories) required in walking to, from and among workplaces -- all fall steadily as access to land rises, and are more favorable even for micro-farmers of bad land than for those who have no practicable alternative to laboring (J. and D. Rosenberg, 1980, pp. 48-9; B. Singh, 1980, pp. 100-3, 106; Lipton, 1983a, pp. 44-6). The landless, even where they achieve MEP no lower than the marginally landed, need to use up more time, calories, and perhaps unpleasantness in achieving it.

The second component is security against fluctuations. A micro-farmer may be no better off than landless laborers in an average year. If he owns his farmland, however, he has a "store of wealth" that -- once -- can be sold or mortgaged to meet dire emergency. Asset depletion in bad years, i.e. in a buyers' market, and attempted replenishments in good years, i.e. in a sellers' market, are likely to prove a polarizing and ultimately self-defeating way to manage risk (for evidence of its importance see Jodha, 1975, and Walker and Jodha, 1982); but at least the micro-landowner has that option. Both he and even the micro-tenant, moreover, can react to a bad year by substituting on-farm family labor for labor hired from the landless, and by supplying his own labor in competition with them. This is widely observed, even among tiny farms on bad land. In Central America, "crop loss or low non-wage earnings induce small farmers to temporarily migrate to the cortas to work as harvesting laborers [; thus] the incidence of risk adjustment is partially shifted to agricultural laborers [, who are] least able to cope with risk" (Walker and Jodha, 1982, p. 9 ). This applies as forcibly to non-migratory increases (in bad years) of the operating farmer's labor supply, whether to compete with landless laborers in other people's enterprises, or to displace them in his own. The evidence that landless laborers, not micro-farmers, suffer worst in famine (Sen, 1981) demonstrates their inability to sell land; to adjust labor supply upwards or demand downwards (they already sell almost all the labor they can -- and very rarely hire labor in); or otherwise, in bad times, to escape damage from the labor-supply adjustments made by farm operators.

2. In normal years: the "inverse relationship"?

Why should one acre of operated or owned land, in a typical year, be a much better protector against poverty levels of MEP than none, and less good than two, on irrigated or reliably watered land, or on land farmed with modern seed-fertilizer packages -- hereafter "good land" -- and not much better than none, nor much worse than two, on unimproved, semi-arid or otherwise unreliably watered, and traditionally farmed land -- hereafter "bad land"? Why, on any land, should even an acre reduce the labor requirements, and raise the year-to-year stability, of a given, near-poverty, average annual level of MEP?

It is easy to see why one acre does a lot to reduce normal-year poverty risk on good land. Naively, one such acre greatly increases the retained production of family labor if operated, and rental income if hired out. (This need not work on bad land.) It is harder to see why, on bad land only, one acre is no better at reducing normal-year poverty risk than three, or on very bad lands than five, seven or even nine acres. Two possible answers are that the "inverse relationship", between land area operated (or owned?) and annual net value added per acre, might be stronger, or less weak, on bad land; and that on such land the farming systems and relationships might discourage the replacement of labor by capital. Such discouragement would, relative to the one-acre farmer, both strengthen the landless laborer and weaken the middle farmer.

The argument that the "inverse relationship" strengthens the one-acre farmer's chance of avoiding poverty, relative to the 5-10 acre farmer, on bad land only, is attractive. The original evidence for the "inverse relationship" stemmed from the Indian Farm Management Studies of the mid-1950s, which applied largely to unimproved rainfed farming. Some recent district-level work (e.g. Roy, 1981) appears to suggest that the relationship may be less clear in the most progressive areas of the Punjab.

However, when the causality of the "inverse relationship" is unravelled, that relationship looks much weaker on bad land. The relationship between farm acreage and net value added per acre-year is inverse -- if it is -- not because of small size in itself, but because small acreage is associated with family operation and labor (Rudra and Sen, 1980). Hence the search and supervision costs, to worker and farmer alike, of applying labor to land (and to non-land, non-labor farm inputs) are smaller, both per acre and per worker, for the small family farmer than for the commercial farmer hiring labor. Thus smaller holdings find it relatively more advantageous to apply more labor to: grow higher-value crops; double-crop or improve land in the slack season; shrink fallows in area or duration; and enhance yields, e.g. by row-planting. Greater poverty of micro-holders also interacts with their lower cost of job search to induce more family labor per acre absolutely, not just relatively to hired labor, than on bigger farms (Sen, 1962, p. 246).

The scope for labor-intensifying activities -- and thus for raising the "poverty-reducing" potential of a one-acre holding, relative to that of three or five acres -- depends, however, on the existence of alternatives. These are much greater on good lands (provided that improvements have not created major economies of scale, or advantages of education or access to bulked inputs, for bigger farmers) than in bad lands. In the latter, a plot

in a particular place is much less likely to permit a wide range of alternatives regarding cropping pattern or intensity, or land improvement. High-value, labor-intensive crops like vegetables are more often infeasible, especially since such regions are often sparsely populated, with most farms far from urban markets. Multi-cropping and intensive weeding are less attractive. As for land improvement, smallholders have fewer micro-irrigation options in Maharashtra or Northern Nigeria than in coastal Andhra or the Punjab, and neither "old" or "new" options on bad lands (neither contour bunding nor watershed management) are proven.

Thus the advantages of smallness, via labor-intensity, in making "one acre almost as good as three" are much less clear on bad lands. Curiously, some excellent studies of progressive, modern Indian agriculture assert the disappearance of the inverse relationship on good lands -- yet prove exactly the opposite (Roy, 1981; Bhalla and Chadha, 1982). 23/ Conversely, both factor input ratios and, therefore, annual factor productivities seem, in the more difficult semi-arid areas, to show a rather weak relationship to farm area (Hill, 1982; Ryan and Rathore, 1978). The results of the Indian farm management studies and of much work elsewhere (Berry and Cline, 1979; Kutcher and Scandizzo, 1981) do show a generally inverse relationship, though certainly "not everywhere and not at all times" (Chattopadhyay and Rudra, 1976, p. A-109). 24/

The debate is not over. It may be that artificial stimuli to tractorization, plus selective advantages to access and early adoption, will prove persistent enough to permanently reverse the negative relationship between farm acreage and annual per-acre farm product in "advanced" farming areas of developing countries. At present, however, the evidence does not point that way. Unfortunately, landlords in "progressive" areas do find that it pays to repossess land for direct cultivation -- but despite, not because of, the acreage-productivity relationship. In the great mass of "intermediate" lands, such as those studied in the Indian Farm Management surveys, I suspect that the inverse relationship persists. It is in "bad" lands, where natural constraints leave few options for the would-be labor-intensifier, that the relationship is perhaps dubious.

Therefore, the inverse relationship -- which gives a boost to the one-acre farmer's prospects of avoiding poverty -- by its very weakness in "bad" lands, strengthens our "naive" explanation of why small farmers there receive no more MEP, in a typical year, than landless laborers: not only is the land not much good, but the advantages of smallness, family labor, and potentially "cheap" labor-intensity are tenuous. However, this same weakness of the inverse relationship in "bad" lands increases the difficulty of explaining the other half of the problem: why both MEP and the incidence of poverty change hardly at all in Visaria's Western Indian data as owned landholding rises from about 0.5 acre to about 7.5 acres, or in the ICRISAT villages as operated holding rises over a similar range.

### 3. Capital types, poverty relationships, land quality

The hypothesis here advanced, without evidence and for testing, is that (in combination with resources and technology) relations among groups of producers, not size-returns cross-sections, explain the "flat" poverty-landholding relationships on bad lands. Such lands, in the present state of

knowledge, do not yield enough to pay for tractorization (or most other forms of labor-displacing investment). They thus tend to be worked with much labor, relative to capital. A large part of income of bigger farmers is therefore diverted to paying hired laborers, and the landless gain from that diversion. However, these lands in most of Asia -- and a good deal of Africa also -- rely, almost inevitably with today's range of feasible technologies, on a large item of capital, viz. livestock. As mentioned, yields are usually too low (and "spare" land too rocky or inferior, and labor too ample) to make tractorization attractive; while the sun-baked hardpan at the end of the dry season, plus the effect of extensive farming on labor costs (including travel) relative to output value, militates against hoeing. This near-imposition of animal draught 25/ -- while not bad for employment -- does impose a heavy burden of capital ownership; for draught animal requirements are largely determined by the number of acres to be ploughed in the few critical weeks before sowing, however low the yield, and however little land can be double-cropped. Although in the early 1960s, and even a bit later, draught animals in semi-arid areas of Western India were much likelier than land to be owned by the poor, this may be ceasing to be so, especially with the reductions in common grazing rights (Jodha, 1983). Increasingly, draught-power ownership is becoming less feasible for farmers with smallish acreages, especially since such farmers generally cannot make such economical use of their animals. 26/

Thus on "bad" land the one-acre farmer is little better off than the landless laborer, because the latter is less readily displaced by capital; and has until recently been little worse off than the middle farmer, because livestock are more equally distributed than land. This may be eroded with pressure on land, as larger holders are better placed to obtain draught services at critical times, and to own and manage draught animals. But, at least until recently, cattle draught has "flattened out" the incidence of poverty, from the landless to the small-medium farmer. These circumstances do not apply on progressively farmed "good" land.

(e) Ownership, control and tenancy

1. Tenancy less important on "bad" land

"Bad" land, as an asset, reduces the risk of poverty in a typical year only when held in quite large amounts. This seems to apply, on the Indian evidence, whether the land is owned or rented: Visaria (on poverty incidence by areas owned) and ICRISAT (by area owned, plus rented-in, minus rented-out) point the same way.

Also, on "bad" land, tenancy is much less important. In 1971-2, across 17 Indian states, the  $r^2$  of irrigated proportions of cultivated land upon rented-in proportions was 0.41. Also NSS showed rented-in proportions far below the national average, 10.6 percent, in States with low land quality -- 4 percent in Gujarat, 5 percent in Rajasthan, 6 percent in Maharashtra, 7 percent in Madhya Pradesh (Laxminarayan and Tyagi, 1982, pp. 64-69). A similar relationship appears to prevail in Egypt (Harik, 1979, pp. 44-5), and a Thai comparison (of two villages only, but studied in detail and claimed to be fairly typical: Phongpaichit, 1982, p. 71) also shows agricultural backwardness linked to a low incidence of tenancy.

This "unimportance of tenancy" in bad lands might be challenged on the grounds that quick surveys always underestimate tenancy, especially where it is being concealed for fear of reform (Laxminarayan and Tyagi, 1982, p. 67). However, in areas of Rajasthan with very bad croplands, 3-4 month residential surveys reported that 9 percent of operated area was leased in during 1961-2, and 11 percent in 1978-9, in Naurangdeshar village (Brambhatt, 1974, p. vii); in Harsawa in 1962 the proportion appears to have been even lower (anon., 1970, p. 85); and in somewhat less extensively farmed areas four years of observation (1975-6 to 1977-8) showed tenancy transactions affecting 12-15 percent of operated area in four ICRISAT villages -- but, exceptionally, 35 percent in Kalman and 41 percent in Shirapur, "due to the delayed impact of a prolonged drought of 1971-2 to 1973-4, during which the majority of farmers lost their bullocks and other assets and failed to recoup them in the following years" (Jodha, 1980, pp. 6-7).

On "good" lands, given the area of land worked, owner-operators appear to be clearly at less risk of poverty than tenants in a typical year, and tenants than landless laborers or peons (for irrigated areas, see Ledesma, 1982, pp. 47, 163 for the Philippines, and Hirashima, 1977, p. 66, for Pakistan).

2. Does tenancy occur mainly for poverty-linked reasons?

(i) Redistribution by approaching optimal size?

One starts, like most economists, by seeing tenancy as a way to transact in land so as to adjust a spectrum of widely different ownership holding sizes towards a similar operational holding size. Such transactions permit farming to approach nearer the optimum size, with each operational farm near the bottom of the average-cost curve, at least for a given crop-mix and environment. This would imply that large, and perhaps extremely small, landowners rented out, and that small owners and non-owners rented in.

At first glance, such an option -- clearly good for efficiency 27/ because it cuts average cost -- must be good for the poor also, since it enables them to rent in land. The poor are thereby, in effect, hiring out their enterprise and voluntary labor-inputs as farmers. This chance to obtain some control over the land asset appears to offer poor people better income chances than the other option, of selling a fixed amount of pure labor-power -- but no enterprise -- to farm land controlled by others. Anyway, this option usually remains, since some big owners will choose to farm land themselves and hire in workers, even if a market in tenancies exists.

(ii) Rising Ricardian rent, interlock, exploitation, regressiveness?

Yet a powerful populist tradition sees tenancy, in most conditions in developing rural areas, as inefficient or "exploitative" or tending to worsen poverty. On this view, the landowner, as a wealthy rentier, extracts a surplus from poor tenants. These, it is argued, do not have effective alternatives as laborers: man/land ratios are too high, the few large commercial farms operated too capital-intensively, and the many tiny tenanted farms driven by poverty to rely on high rates of "self-exploitation" without hired labor. In some cases, small tenants may be able to rent only if they also buy or sell goods from, borrow from, or work for the landlord; such

"linked factor markets", it is claimed, further reduce the freedom of poor tenants to compete and bargain.

Even the efficiency of tenancy vanishes in such cases; although the individual crop-share tenant may, a la Cheung (1969), in general equilibrium be no less efficient than the owner-occupier, the landlord-tenant equilibrium could itself be Pareto-inefficient. Given the available land, labor and enterprise, many landowners might prefer to leave much of their own labor and enterprise idle, and to enjoy leisure or urban residence, while renting out land to poor tenants on condition the latter also borrowed, bought, or sold through them; such landowners might even find it then paid to divert their savings from farm reinvestment to lending for consumption to their tenants (Bhaduri, 1973). A static comparison of owned and rented land, e.g. to establish the efficiency of sharecropping, could well show little or no difference in factor inputs or in outputs per acre, for familiar Cheungian reasons; yet the whole farming-tenurial system of the village might be inefficient, compared with owner-occupied farming of the same land units. 28/

Compulsion upon tenants to tolerate factor-market interlocking or lose their tenancies -- while not necessary for the "inefficient equilibrium" outcome -- makes it more likely. For example, in 100 wheat villages of Uttar Pradesh, 8 percent of tenants were allowed to lease in from only one landlord; 23 percent had to render labor services to their landlords; and 55 percent took interest-bearing loans from their landlords. Some such tenants are big, and some landlords small; but on the whole it is not obvious that extra poverty (due to semi-coercive surplus-extraction) and inefficiency, associated with such proportions, are fairly unimportant, as the investigator believes (Bardhan, 1982, tables 9.8-9.10, and pp. 9.8-9.11).

There are, in any case, sound Ricardian reasons for expecting the share of rentiers in income to increase, as growing populations of potential tenants (workers-cum-entrepreneurs) press for scarce land, pushing out the extensive or intensive margins and raising the share of quasi-rent. The probable damage done to the poor by tenancy systems would then increase over time. If land were owner-farmed (individually or co-operatively), even with no change in the distribution of operational holdings among farmers, the poor would benefit. For the rising quasi-rent would be retained by the farmers themselves, instead of being increasingly paid to landlords (directly and, perhaps, via interlock of land transactions with those in credit, labor, or products).

(iii) Why standard approaches misinterpret tenancy-poverty linkages

Thus the "tenancy is good" view sees it as tending to make holding size, and farm incomes, more equal among farming families -- and as raising output too. In so doing, tenancy must reduce poverty, since both efficiency and equity increase. On this view, tenancy renders operational holdings more equal than ownership holdings. No more or less tendentious is the "tenancy is bad" restatement of the latter proposition: that landlords, being few, big and powerful, are locally well-placed to extract surpluses from many, poor, weak tenants.

Both views leave out three considerations vital for assessing the impact of tenancy on the incidence and severity of poverty. First, does

tenancy really move land from big ownership holdings into smallish operational holdings? Second, can we judge the impact of tenancy on poverty by looking at landowners and tenants alone -- or do many landless laborers fail to secure a tenancy, yet find their poverty affected by tenure systems? Above all, when we assess the relationship between tenancy and poverty, does it suffice to ask if tenants are poorer than landowners (perhaps allowing for the condition of pure laborers), or must we specify "the assumptions about the alternative"?

### 3. Tenancy and size-group transfers

On the first issue, K. N. Raj pointed out in the 1960s that, in some Indian States, the area rented in was fairly close balance with the area rented out in most size-groups of operational holding. States are of course large and diverse; hence the above observation is still consistent with "equalizing" trends, towards a common optimum size, induced by tenancy in most localities within States. However, the ICRISAT villages in 1975-6 to 1978-9 certainly showed no uniform trend of this sort. First, of leased-out land, large proportions, ranging from 30 percent to 66 percent in the six villages, changed hands within the same size-group. Second, in three villages, the proportions of land leased that passed from smaller to larger farms and from larger to smaller farms were about equal, at 30 percent; in two others, much more land was rented from small to big farms than from big to small. This is inconsistent with both optimum-size, "tenancy good", and exploitation, "tenancy bad", theories, as are similar district-level findings in Hooghly, W. Bengal (Ray, 1978).

Table 3, however, does provide some basis for a contest between the theories. Most Indian States in 1971-2 clearly show smaller operational holdings more heavily dependent than bigger ones on leasing-in. <sup>29/</sup> This is confirmed weakly in a big sample of W. Bengal villages for the same year (Bardhan, 1982, tables 10-1, 10-2); more strongly from 10 villages of central Gujarat in 1964-70, where farmers operating below 1 ha. accounted for 74 percent of land leased in, but only 12 percent of land leased out (B. Singh, 1981, pp. 165, 167; 12 percent of all operated land was leased out); and, outside India, very strongly in two Thai villages, where the Gini coefficient was drastically reduced by tenancy, from .60 for owned holdings to .35 for operational holdings in Wer (N. E.) and from .65 to .27 in Mae Kue (N. Thailand) (Phongpaichit, 1982) and in two villages in Laguna, Philippines (Ledesma, 1982).

Table 3, unlike the micro-data, gives information only for leasing in. Concealment of leasing-out (for fear of tenancy reform) is clearly very great: for all of India the NSS in 1971-2 showed area leased in exceeding area leased out by 20 to 1, viz. 14.0m. hectares -- itself a substantial understatement -- to 0.7m. hectares! Yet the tiny landowners, who presumably had less to fear from reform, stated much higher ratios, whereas the bigger owners admitted some net leasing out. Thus 5.4 million households reported zero land ownership but leasing-in of 1.75m. hectares. Among households owning a little land (below 1 ha.), 9.7m. leased in, only 3.3m. leased-out -- possibly many did both -- and reported area leased in exceeded area leased out by 6.6m. to 0.9m. hectares. Households owning over 10.14 ha. reported only 0.5m. ha. leased in, but 10.1m. leased out. In every one of the 17 States sampled, owners reporting below 1 ha. showed ratios of leased-in to leased-out area far above the ratios reported for all size-groups, and owners with above

10.14 ha. admitted leasing-out far above leasing-in except in Karnataka and Maharashtra, with their relatively more feared tenancy legislation (Laxminarayan and Tyagi, 1982, Table 27).

Thus the "big picture" does still seem to be mainly one of big landlords and small tenants (so that tenancy can be seen as alleviating poverty by redistributing land rights, or as intensifying it by providing a new mode of exploitation). There is a strong case against this view, but it does not rest upon the counter-examples (most, anyway, from more advanced Third World agricultures). In the Punjab between 1961-2 and 1971-2, advantages of input access, and the newly increased profitability of farming with modern inputs, did lead many bigger landlords to resume formerly tenanted holdings for direct cultivation, and also led many micro-farmers to rent out land and become pure laborers (Table 3; cf. Laxminarayan and Tyagi, 1982, pp. 69-71). The experience of "unequalizing tenancy" in a third Thai village, Baan Rai in central Thailand (Phongpaichit, 1982, pp. 76-7), may well reflect similar "progress". However, it would be quite wrong to read any inevitability into this. In 1962-72 in Haryana, despite similar progress to the Punjab, micro-farmers continued to operate their land, and were not "proletarianized" by the Green Revolution (S. Bhalla, 1983, p. 835). Even on an all-India basis, tenancy sharply reduced the all-India Gini coefficient of landholdings, from .675 for ownership holdings to .583 for operational holdings, in 1971-2 -- much more than the negligible reduction in 1953-4 (Laxminarayan and Tyagi, 1982, p. 58).

On the whole, tenancy does move both control over land and vulnerability to "exploitation" from richer to poorer rural households. However, the main motive for tenancy does not seem to be the achievement of optimum size, but "resource adjustment". Imperfections in the market for oxen hire (though not significantly for hired labor) are frequently associated with shifts of land from owners with few oxen, to operators with many (Jodha, 1980; Bliss, 1976). It is also worth testing whether major tenancy transactions take place to decrease fragmentation, so as to save time and land -- or in some cases to increase fragmentation, so as to reduce risk.

Nor are rentings-out, whatever their motives, simple non-discriminatory transactions. It is statistically demonstrable in Thanjavur, South India, and plausibly arguable for many other places, that landlords "ration" tenancies, favoring some characteristics linked to poverty -- shortage of owned land, surplus of unskilled labor -- but also some likely to be inversely linked to it: ownership of draught animals, high incidence of adult males, proven managerial capacity. Landlords' market power to select, as tenants, applicants with some poverty-linked and some non-poverty-linked features -- and thus to destroy any connection, positive or negative, between tenancy and poverty -- increases as irrigation raises the demand for tenanted land (Bell and Sussangkarn, 1983), i.e. exactly where tenancy gets more important, as we have seen above.

Thus, what weakens tenancy-poverty links is not that rather many tenancy transactions are "counter-examples" -- from small poor lessors to big lessees. More transactions, and much more land, are in a large majority of cases "flowing" the opposite way. There are too many exceptions, however, for tenancy to be in most LDC rural situations a major redistributor of asset control to the poor, or of rentier power to the rich. 30/ Tenancy

transactions might have such effects (despite the counter-examples) if their major intention -- or effect -- were to achieve an economic size of operational holding; but that seems not to be the case. Tenants and landlords seek to adjust land to other resource endowments (for an account of models conforming closely to the Bell-Sussangkarn account, see Binswanger and Rosenzweig, 1981, esp. p. 32). In so doing, they tend to dissociate tenancy from poverty or affluence relative to other forms of relationship to the land.

The absolute importance of tenancy to the poor, however, remains. When the data for landlessness are examined (see (h) below), it will be seen that in 1971-2, of the 7.5 mn. Indian rural households owning no land, 5.4 mn. rented in and operated farmland -- an average of 0.8 acres per tenant; whereas, among the further 41.5 mn. owning below 2.5 acres, the average farmer, due to leasing in (net of leasing out), increased his operated area by some 50 percent above the size of his owned area. Tenancy obviously matters enormously for poor Indian households, even on NSS data suggesting that only 10 percent of all Indian farmland is tenanted. If a true national picture were available, village studies suggest that a 15-20 percent figure would emerge. And tenancy elsewhere in South Asia looms larger than in India (though in most of Africa it is as yet less important).

Nevertheless, though small owners rely heavily on supplementary tenancies, the associations between "tenancy" and poverty relative to owners, or affluence relative to laborers, are fairly weak. This is partly because few Third World rural households are "pure" members of any of the three categories: many own a little land, rent in a little more, and do some farm labor for other, bigger owners. The de-linking also happens partly because tenancy arises more to adjust farmers' land to their available non-land input, than in response to their income levels.

Tenancy may seem a more important component of poverty -- or its alleviation -- to those familiar with the more heavily tenanted areas of India, or even more of South America. However, the question there is whether the politically realistic alternatives to tenancy would provide the poor with significantly greater or smaller shares in control over assets.

#### 4. Tenancy, poverty and laborers

Little is known about the effects of tenancy upon employment, and thus about whether local incidence of tenancy is a relevant "characteristic of poverty" (or of its reduction) in individual households that rely on farm labor for much of their income. It is well known that labor-intensity decreases as operational farm size increases. Also, we have seen that tenancy generally tends to reduce operational size below owned size 31/ (though we have not yet asked whether, without tenancy, other forces would have similar results). It might therefore seem a priori that tenancy, via reduced farm size and hence increased labor-per-hectare, must help non-operating laborers. However, while small farmers (and thus most tenants) have higher labor/land ratios than large operators (who might farm more land in the absence of tenancy), the ratio of hired labor to family labor is lower on the smaller holdings -- and may be further reduced by tenancy, given farm size, because rental obligations reduce real income, and thus cause family income-earning effort to be substituted for leisure-plus-hiring. So the effect of tenancy on the demand for hired labor is indeterminate in theory 32/ as well as little-explored in practice.

The rare occasions where a cross-section approach is possible confirm that "pure" tenants, especially where (as usually) they operate relatively small areas of land, hire less labor per acre than other farmers. In two villages in Chengalpattu district, Tamilnadu, from 2 January to 14 July 1976, the data in Table 4 confirm the small amounts of hiring-in done by "pure" tenants.

The linkage of tenancy to labor hire is complicated by at least three collinearities. Tenant farms tend to be smaller than owner-occupied farms, and thus to use more labor per acre (Berry and Cline, 1979; Rudra and Sen, 1980). Tenancy is associated with irrigation, and as such with higher labor-intensity.

Above all, tenancy is a necessary condition for sharecropping. There are both Marshallian and more complex arguments for expecting this to be linked to low labor-intensity. Also, there are both Cheungian and other arguments for expecting no such links (an excellent review is Binswanger and Rosenzweig, 1981, pp. 21-32). However, there is little theory or factual knowledge about relationships between sharecropping and the hired/family labor ratio. In 1975-7, in two ICRISAT villages with sharecropping (Pant, 1981, p. 38), a rise of 1 percent, across households, around the average proportion of land leased in -- quite high, about 35-40 percent, due to earlier exceptional drought -- was associated with a rise of 3.4 labor-hours used per hectare, significant only at 10 percent; of 2.8 family labor-hours (5 percent); and a fall of 0.6 hired-labor hours (n.s.). In this study, owned area per worker and irrigated/operated land ratios were introduced as independent explanatory variables. Further light on the independent effect of sharecropping is cast by Bell (1977), who finds clear negative effect on per-acre hired labor input if sharecropped land is compared with the operator's own land, but no effect if "pure" sharecroppers and "pure" owner-operators are compared.

This spotlights yet another complication. Relatively few tenants are not also small owners. Similarly, relatively few landlords completely give up cultivation. The effect of sharecropping on labor-hire as between a farmer's owned and operated land might differ, for several reasons, from its effect as between a pure sharecropper and a pure owner-operator. Hence the effect of tenancy on labor hire depends on whom the landowner chooses as tenants. The tendency towards these personalized choices appears to increase (as "rationing": Bell and Sussangkarn, 1983) with irrigation and other factors raising the effective demand for land. In many places, there are few people with no rights in land, and the effects of tenancy on landless labor are felt -- and to some degree controlled -- by micro-farmers, in deficit, who are tenants or landlords as well as laborers on the land of others. However, in areas such as Bangladesh, a rising proportion of very poor rural people neither owns nor operates any land. There, tenancy as a "characteristic of poverty" depends more urgently upon knock-on effects upon the landless, via the volume and wage of employment offered to them. About such effects we know shockingly little. More generally, plenty of empirical work suggests that owner-occupiers within a village are neither much more nor much less efficient than sharecroppers, and seldom much less likely to be poor; but we know almost nothing about whether a sharecropping-dominated (village) system is likely to make more or less efficient, or poverty-reducing, uses of and channels for labor, lending, and land than an owner-occupier system.

(f) Poverty, land reform, tenancy reform: assumptions about alternatives

1. The issues

The tenancy problem reveals two ways in which our attempt at a non-causal, comparative approach to poor people's characteristics -- defensible for topics such as demography or nutrition -- falls short when we turn to the role of assets. It is useful to know that the poor or ultra-poor have bigger families than the non-poor, yet are found in job and status groups that on average have smaller families. It is useful to know that the ultra-poor, but not the moderately-poor, are exceptions from Engel's Law and its derivatives, and reveal preference for improved nutrition over other uses of extra income (Lipton, 1983, 1983b). But it is not so useful to know whether tenants are on average poorer than landless or landowning households of the same demographic composition and farming similar amounts and qualities of land.

This is because -- to some extent irrespective of causal sequences -- there are promising approaches to the de-linking of poverty from large family size, or of ultra-poverty from perceived need to maintain food/outlay ratios as income rises. But such policy options make less sense in the case of assets, like land, in restricted supply. Land ownership and tenancy do drastically affect the characteristics of the poor, but not primarily through opening up gaps between owners, tenants, and laborers who are neither. Control over land structures the whole rural economy, and with it the incidence, severity, and nature of poverty among tenants, owners and laborers (and the all-pervasive mixed categories) alike. Hence the policy options that might reduce poverty, in respect of the topic "assets", are not -- as they are, to a considerable extent, in respect of the topics "demography" and "nutrition", and even to some extent "labor" (Lipton, 1983a) -- mainly decisions to shift policy benefits towards, or incentives affecting individual decisions among, persons or households with particular characteristics mediated by that topic. For example, policy benefits can, in principle, be usefully shifted towards the poor by being concentrated on families that are big; or that suffer low, illness-induced age-specific participation rates; or that suffer chronic, hunger-induced lassitude. Or such groups can be helped to take decisions that improve their chances to escape from poverty. But policy on poverty and land (or other scarce physical assets) has more to do with creating, or encouraging markets to create, structures of asset control that reduce poverty incidence by changing the relationships of major groups of people to the asset in question.

There are three major, linked analytical problems in respect of such land policy. First, equity concerns have focused on redistributing ownership holdings of land -- or on changing the terms of tenancies -- whereas efficiency concerns have focused on redistributing operational holdings. Second, analysts have constantly used evidence that group X is much more exposed to poverty than group Y to condemn a particular system of land ownership or tenancy, instead of comparing that system with a feasible alternative in respect of the incidence of poverty in groups X, Y, and the rest of rural and urban society taken together. Third, even when such comparisons are done, they frequently "compare model with muddle", i.e. they set current conditions, with imperfect markets and knowledge and local monopoly power, against idealized pictures of post-reform conditions (and States), instead of examining the alternative scenarios for poverty implicit

in alternative processes (no change, reform A, reform B, etc.), including the impact of avoidance, evasion and subversion of each policy alternative. 33/

## 2. Ownership or operation?

The emphasis of land reformers on the redistribution of ownership holdings is easy to understand. If land per household is the main determinant of assets per person, and if assets-per-person are the main determinant of freedom from poverty, than owned land is the relevant variable, whether equal or unequal. If land ownership is fairly equal, it makes no sense to prevent households from engaging in tenancy transactions, which principally serve to adjust operated land to other resources (Pant, 1981; Jodha, 1980). If land ownership is unequal, then again it makes little sense to legislate against tenancy, because poverty and inequality can be quite dramatically reduced by it -- as in three villages (in very different circumstances) in Thailand (Phongpaichit, pp. 70, 72).

Anti-poverty policy has often sought to avoid the difficult tasks of land ownership reform, while recognizing the case for tenancy -- and hence to institute legal controls over the terms of tenancy: over share-rentals, rules for termination of leases, etc. However, in the great majority of cases, such controls cannot be implemented if land ownership remains very unequal, and if the demand for rented land, relative to the supply, generates market-clearing prices significantly higher than the effective prices implied by official controls (Herring, 1983, ch.2, esp. pp. 42-44). Moreover, the poor tenant will usually gain from tenancy reforms, even if (as rarely) they are effective, only if he has access to other means of production, notably water-control (and loanable funds), that typically in developing rural areas accompany land ownership (ibid., pp. 28, 33, 40, 45).

Yet efficiency concerns are principally with the distribution of operational holdings. When Marshall, in claiming that sharecropping had to be highly inefficient because the land operator, committed to (say) a 50 percent cropshare, would push in labor and other variable inputs only so long as their marginal value-product exceeded double their marginal cost, he certainly overstated the case: that is, he did not consider circumstances that might render sharecropping efficient. These include reduction of supervision-costs for landowners who sharecrop out instead of employing; reduction of search-costs for those who choose to sharecrop rather than to work on land operated by others; risk-sharing effects; the possible sharing of input costs; and general-equilibrium models in which sharecropping maximizes output because potential sharecroppers equate marginal net income from labor in tenancy and in farm employment, while landowners equate marginal net income from land in owner-operation (with employees) and in sharecropping. However, this last (Cheungian) argument assumes away the very risks and supervision-costs that underpin the other defenses of sharecropping. The uneasy feeling remains that sharecropping does have some efficiency disadvantages over owner-farming or fixed rentals. 34/ The argument is summarized by Binswanger and Rosenzweig (1981), whose review of empirical work uncovers "only very minor differences in input and output intensities between sharecropped and owner-occupied farms and/or plots". Unfortunately, these differences appear to be concentrated on small farms in just those poorer regions of south Asia -- West Bengal, Bihar, Orissa, Bangladesh (ibid., p. 37) -- where sharecropping is most significant, and its practitioners poorest.

Given the technical options, poverty is the upshot of low input intensity (and/or inefficient input use) multiplied by inequality. Equality is impaired by gross maldistribution of owned land, which in much of Latin America and some of South Asia is in itself a major cause of poverty. Efficiency may be impaired by some tenurial arrangements, and is also almost certainly reduced by extreme disparities in operational holding size, and increased by redistribution towards small-to-medium operational holdings. 35/ In many African and South Asian environments, 80-100 percent of land is effectively owner-operated, but where the proportion is much lower -- and that includes some of the deltaic regions where lands are richest and the poor poorest -- there is major policy confusion between reform of ownership holdings (to alleviate poverty by greater equality) and reform of operational holdings (to alleviate poverty through higher output).

### 3. Comparing groups vs. comparing options

As we have seen, there are very few studies comparing poverty among households with different relationships to land. One of the better surveys, for Kerala in 1966-7 (before the major 1969 reforms), suggests a crucial distinction between the 22 percent of households who were tenants with so little owned land that they had to rent house sites (of whom 56 percent reported annual income below Rs.1000), and the 23 percent who were "other tenants" (43 percent); there were also 41 percent who were owner-cultivators (of whom 38 percent were below the 1000-rupee line), and 12 percent pure laborers (71 percent) (Herring, 1983, p. 182). Household sizes are not given, so this cannot be converted into a clear poverty indicator. But plainly it is only some tenants who are at greater risk than owner-operators, while both types of tenants (of average farm size) do much better than the landless. A similar finding is reported from the Philippines (Ledesma, 1982, p. 148); in Pakistan, however, the clear poverty ranking (worst for laborers, then tenants, then owners) has more to do with size difference than with tenurial status (Hirashima, 1977, p. 66). This sort of comparison, however, like the more often feasible comparisons of poverty incidence by holding size, gives limited guidance on the poverty incidences to expect from different types of tenure systems. The group comparisons, that is, might tell us where to find poor people within a given structure of man-land relations. They tell us little about how different structures of relations affect the incidence of poverty or the characteristics of the poor.

"Before and after" studies of particular land reforms, while important, would probably not answer that question either. Too many other things are happening, and the effects of the reform (and of the other things) are almost impossible to disentangle from the effects of avoidance, evasion and concealment.

What may be more helpful are comparative studies of the incidence and severity of poverty, and the characteristics of the poor, in places with radically different land distributions, as between size-classes of owned or operational holdings and/or as between different systems of man-land relations. Ideally, such places should be ecologically comparable areas of the same country. A good context for such a study might be a country where a parallel study of regional farm-management systems, concentrating on farm types, already exists, such as Brazil (Kutcher and Scandizzo, 1981), or India (Bhalla and Alagh, 1979).

#### 4. Poverty and agrarian restructuring

Perhaps surprisingly, we know a little more about how the processes of reforming land ownership and tenure affect the poor, than about the comparative statics of systems of ownership and tenure in respect of poverty incidence and severity. In China, an ingenious modelling approach, based on production-costs and accumulation in one commune, suggested built-in tendencies for the processes of collective accumulation and taxation to affect production costs and disposable income per worker in an equalizing way, but only in the long term -- twenty years rather than ten; a test from another commune confirmed the prediction of short-term rises in team, brigade, and total inequality (Griffin and Saith, 1981, ch. 6), albeit from a much lower level than prevailed in the great majority of developing rural areas outside China. The success of a variety of redistributive reforms (Taiwan, South Korea, Cuba, Kerala) in reducing rural poverty is fairly clear. What is less often discussed is the impact of the reform process, and of steps to avoid it.

Private actions to avoid the impact of tenancy reform tend to deepen poverty, whereas private actions to avoid the impact of ceilings legislation -- which is the first requirement of distributive reform of ownership holdings -- tend to reduce poverty. The main defenses of landowners, who feel threatened by controls over rents or by rights (e.g. of purchase) assigned to tenants, are (a) to evict tenants and resume personal cultivation, (b) to shorten the terms and reduce the security of tenancies, thereby reducing the risk that a tenant will either feel safe enough to insist on, or be well-established enough to secure, his legal rights under the controls. The power of landlords in the political, and especially in the judicial, processes is such that legal constraints against eviction seldom work -- always assuming that the ownership-based structure of rural power is unchanged (see the discussions of Sri Lanka in Herring, 1983, chs. 2-3).

Tenancy reform can often also be avoided legally by inserting intermediaries between landowner and cultivator. In the Philippines, this process has been linked to a reduction in tenancy sizes and incomes, a fall in the ratio of hired to family labor, and hence damage to the landless, the poorest of all (Ledesma, 1982, pp. 121-2, 203).

Unlike some land reform, all tenure reform, when even fully implemented, excludes the landless. Both they and small owner-occupiers can be damaged as credit is concentrated on the tenant beneficiaries of reform. With some tenure reforms, the landless can further lose from co-operative farms whose management displaces labor -- hired before the reform by medium-sized farm -- with machinery (Alberts, 1981, p. 172, for evidence from Peru). But it is avoidance, rather than implementation, of tenancy reform that really threatens the poor.

On the other hand, avoidance of ceilings legislation usually helps the poor. Such avoidance takes two forms. First, landowners surrender their worst and most underfarmed lands to the reform authority. Second, landowners divest themselves of land below the ceiling -- genuinely via sales, but also via bad-faith transfers to relatives and clients -- before divestment is required. These processes, however, both tend to redistribute ownership holdings towards poorer groups, as is well documented for India (Vyas,

1979). Poor relatives and clients, having been "given" land in bad faith, often hang on grimly, and (as in West Bengal in 1968) may find themselves suddenly supported by governments that seek to enforce the transfer legislation. Land sales -- necessarily to people owning well below the ceiling acreage -- at best pass ownership to the poorest, and at worst move land into smaller and hence more labor-intensive units. Even bad land, transferred by large holders to satisfy ceilings laws, is available for distribution.

We have, perhaps, excessive expectations of democratic and non-revolutionary land reform. Thus in Pakistan the resumption of "only 1.9m. acres -- 3.9 percent of land .... one-fourth of the land [previously owned] in holdings larger than 500 acres" in Pakistan under Ayub Khan, and the subsequent "limited aggregate effect of [Bhutto's] ceiling provision" in appropriating a further claimed 2.8m. acres and redistributing them to 9.2 percent of non-landowning tenants (Herring, 1983, pp. 98-9, 111-3), seem to me quite substantial. The same could be said of the effect of land redistribution under ceilings legislation in several Indian states (at least Kerala, Karnataka and West Bengal), in Sri Lanka, in Egypt (Harik, 1979), and in some Latin American countries (Morales Nieto, 1978, p. 156, for Colombia; Alberts, 1981, pp. 136-41, for Peru).

Commentators who compare the poverty impact of changes in land ownership structure with official targets are aghast at the evasion, underfulfilment and slow progress -- at the "mere" 4 million acres, for example, acquired under ceilings legislation in India (Laxminarayan and Tyagi, 1982, p. 36). But if one compares the impact with reasonable expectations in non-revolutionary situations, one is likely to be more favorably impressed (for data, see Tai, 1974, pp. 533-40, for seven major national reforms in 1951-59; King, 1977, pp. 223, 316, for South Korea and Indonesia; and Griffin, 1976, p. 94, for Morocco). One should be impressed, perhaps, not only by the fact that many rich farmers escape loss while many of the poorest rural people do not gain -- and even this is false in some cases -- but by the large areas of land transferred, gradually, towards poorer people. This is perhaps especially surprising where urban-based governments are willing neither to see rural-to-urban surplus transfers eroded by the rapid dispersal of large farms, nor to make reforms more acceptable to powerful rural people by largely compensating them, out of general (including urban) taxation, for lands expropriated. Certainly the harsh arithmetic, in cases such as Sri Lanka, means that politically feasible ceilings will not release enough land for all the poor: if as many as possible are to achieve holdings just sufficient to feed their families and escape poverty, then many deficit farmers can be made up to a viable holding size, but most of the landless, including many of the poorest, will be left out (ILO, 1971). However, when we look at the history of development in Europe, we will be surprised -- not at the failure of Asian and Latin American land redistribution to eliminate rural poverty in the last thirty years, nor at its failure to benefit many of the poorest -- but at the large amount of redistribution, cooperative and individual, that has happened within these highly unequal structures of power.

(g) Landlessness, micro-farming and poverty: choices of measure

Many possible definitions of "landlessness", "near-landlessness" (which we call "micro-farming"), and "land-orientated poverty" exist. But

what are the levels, trends, and interrelations of these three phenomena? The following discussion will be mainly about Indian large-sample data (NSS) for three reasons. First, these data yield the richest harvest of both insight and confusion. Second, recent important papers clarify these data (I. Singh, 1982; Cain, 1983; Sanyal, 1984; Pal and Quizon, 1983). Third, they can usefully be set against other relevant materials, national (ARIS, n.d.; Labor Bureau, 1977) and local (the village studies of ICRISAT and AERC Vallabh Vidyanagar). However, a very brief account of evidence from other countries will follow.

We are concerned with lack of the land asset as a possible characteristic of poor rural people, and/or of people living in poor rural regions. What should be measured, to indicate "lack of land asset" likely to correlate with poverty incidence or severity? We could choose to measure:

36/

1. Lack of household land operated or owned?

"Given the policy concerns" to reduce poverty, Cain (1983, p. 150) argues that the best definition of landlessness is non-ownership, a view also taken (though less insistently) by Sanyal, and on the whole rejected by I. Singh (1982, pp. 4-6). There is a case for using "ownership". First, owners presumably seek to maximize net benefit to themselves from their owned land, and thus choose a poverty-minimizing mix of owner-operation and renting-out. Second, tenancy -- especially cropsharing, with excess supply of tenants, and with talk of tenancy reform to encourage landlords to insist on short and insecure leases -- can verge, at the margin, on quasi-employee status.

But there is an equally persuasive case for using operational holdings to measure the likely contribution of a household's land to its chances of freedom from poverty. Owners whose land is entirely "rented out" on usufruct mortgage have typically gone most of the way to landlessness -- and the tenants, even if legally owning nothing, to acquiring land. Moreover, the agricultural tenant household that can market management and labor must normally be at less risk of poverty, other things equal, than if it could market labor only. Perhaps smallholding, owned or operated, on very "bad" land does little to cut the risk of poverty, but elsewhere it matters; and the tenant's ability to trade labor and management for usufruct, even if insecure and limited, renders it inappropriate to assign him to the same category of "landlessness" as the pure laborer. 37/

Of course, a rural non-operating landowner can be rich (e.g. as a landlord). But so can a non-owning operator (as a big tenant), or even a non-owning non-operator (e.g. as a merchant). The "zero-class syndrome in which many analysts get trapped", therefore, applies not only to assuming that all the non-operators are poor (Sanyal, 1984, pp. 7-8), but also to assuming that all non-owners are poor! Perhaps the Penny-Singarimbun (1973) proposal -- to measure, and correlate with poverty risk, "land owned and operated, plus half land owned or operated but not both" -- is worth exploring, though very demanding on the data.

Meanwhile, we do not claim that all rural non-operators (or non-owners) of land are at relatively high risk of poverty, let alone the "near-landless" on either definition. Careful micro-studies in eight Third World

environments suggest that about one-third of rural income, yet only one-quarter of work, originates outside agriculture (Chuta and Liedholm, 1979; see also Sec. (a) (2) above). So "non-ownership, non-operating" income is not only substantial, but earned with less work (i.e. less poverty-linked?) than most agricultural income!

However, this fact does not delink landlessness -- owned or operational -- from the risk of poverty. In most of Africa, including the areas studied by Chuta and Liedholm, artisan households are also earning income from agriculture. Even in South Asia, where caste specialization often affects artisan households, the better-off artisan castes generally own significant farmland too, as a whole series of AERC studies from Gujarat and Rajasthan shows (Choudhary, 1962, p. 27, also showing operational holding; Shah, 1968, p. 111; M. Desai, 1966, pp. 18, 113; B. Desai, 1967, p. 104; anon., 1970, p. 90). With growing shares of rural people almost everywhere -- and already large shares in Latin America and Asia -- dependent mainly on working for other farmers to live, and with agriculture still accounting for the big majority of rural income and work-time, it makes sense to look for landlessness, and perhaps especially operational landlessness, as a major characteristic of the rural poor.

## 2. Lack of arable land or of any land?

Operational holdings refer to farmland; ownership holdings, to all land, irrespective of farm worth or of use. Hence Cain (1983, pp. 150-1; our italics) argues for a concept of "owned arable landlessness" in South Asia, because most non-arable land is in "the homestead; there is no, or almost no, house-rent market, so that "the only alternative to owning a houseplot is a way of life close to vagrancy ... [only] ownership of arable land ... defines one's position with respect to the means of production".

There are several problems with this proposal. (1) In many areas -- Kerala, much of Java, and especially Sri Lanka -- the closely-tended, highly-fertilized house-plot, though small, is a major source of income, and often of direct calories, to large sections of poor people with no arable land. 38/ (2) In Bangladesh and parts of West Bengal, fishponds are significant non-arable, non-homestead uses of owned areas. (3) Major rental markets in hutments, often tied to land rents, exist (for non-vagrants) in Kerala (Herring, 1983, pp. 181-2) -- and clearly elsewhere also, because the 10 percent of households who owned no land whatever in rural India in the 1972-3 NSS round (Sanyal, 1984, Table 2) must have lived somewhere. (4) Indeed, these NSS data for households not owning even "house sites" could be related to interregional variations in the incidence of extreme asset poverty; admittedly, some such persons are teachers, officials, railway workers, etc., but these should be fairly evenly spread across the land. (5) Attempts to deduct all, and only, owners of no more than their houses (house sites? homesteads?) from NSS data of "landowners" (and to add them to the landless) -- or to reduce estimates of owned acres by assumed areas not arable -- involve heroic assumptions, especially for comparisons over time (or among States), as Cain himself stresses (pp. 152-4 and fns. 14-15).

### 3. Landlessness, near-landlessness and land quality

Complete lack of land obviously conduces to poverty more than a holding of average size, but need not be much, or at all, better than a tiny holding. And a tiny holding of reliably irrigated land can be worth more than several acres of rocky outcrop. To allow for this, efforts are made to assess the numbers of "near-landless" (Esman, 1978; Singh, 1981). Unfortunately, additions of landless and near-landless (whether land is owned or operational, arable or total) are likely to be bad guides to poverty, even if data are fully reliable and if non-farm incomes are negligible, for two reasons.

First, the ratios between landless, "near-landless", and not-quite-so-near-landless vary -- affecting poverty incidence and severity. In 1961-2, the NSS estimates of the proportions of rural households with zero, .01-.49, and .5-.99 acre ownership holdings (including homesteads) were, respectively, 11.7 percent, 26.2 percent and 6.3 percent; by 1971-2 they were 9.6 percent, 27.8 percent and 7.4 percent respectively (Cain, 1983, p.155). Thus "landless" fell from 26.4 percent of "landless and near-landless" to 21.4 percent. Simply adding up landless and near-landless would miss this source of expected gains -- if the figures are right -- for poor people. Similar problems arise for operational holdings.

Second, land quality is critical. An acre or two in many areas of Rajasthan really is little better than nothing, as a hedge against poverty. In many parts of the Punjab, half an acre is much better than nothing. Landlessness must mean a zero holding anywhere. But "near-landlessness" requires different definitions according to land quality.

Sanyal (1984) has tried to solve these two problems by constructing, in effect, a Sen index of access to owned land. He defines the ownership holding for each State as the area, h acres, likely to permit monthly expenditure per person, MEP, at the poverty line -- given the average quality of land in each State (this MEP in turn is defined, following Sengupta and Joshi (1979), as that associated with a particular caloric norm). The NSS borderline closest to h is then used to construct a Sen index 39/ of what might be called "land ownership poverty" (LOP).

#### (h) Some results for India

##### 1. NSS data for 1971-72

We shall revert to the questions of how far LOP incidence can be expected to be related to poverty; here, we stress that several aspects of the above procedure overstate LOP. 40/ There is, however, considerable interest in the variations, over space and time, 41/ in the Sen indexes and other data for India compiled by Sanyal, Laxminarayan and Tyagi, and others, and reported in Table 5.

In the 1971-2 NSS round, one Indian rural household in four was operating no farmland; one in ten owned none; and only one in fourteen neither owned nor operated land. There is no obvious reason why these figures should be grossly inaccurate. 42/ A number of comments should be made.

(i) Link to non-farm rural income: For eight States, we know the proportions of rural households dependent mainly on non-farm income for 1972-3 (Sec. (a) (2)). As expected, Table 5 (together with the last column of Table 6) shows the States with higher diversification out of farming -- Punjab, Haryana, Tamilnadu -- with a substantially higher proportion of rural people operating no farmland than do the more agriculture-dependent rural areas of Bihar, Gujarat and Maharashtra, though Kerala is an exception to this relationship. There is no relationship between a State's rural diversification and the extent of non-ownership of land (of any sort).

(ii) Ownership and operation: States are a very coarse level of disaggregation. However, even across States, a clear relationship exists between farm operation and what one might call "ownership of farmable land": land in amounts that, however tiny, are significantly above the 25-90 square metres (0.006-0.022 acres) that the poorest 20-26 percent of rural households typically have under the roof (Bhat, 1964, p. 224; anon., 1970, p. 137).

Thus a scatter diagram for the fifteen states listed in Table 5, excluding Punjab/Haryana, shows a quite good regression of the proportion of non-operators among rural households (y) on the proportion of non-owners (x) ( $r^2 = .283$ , significant at 6 percent). However, Punjab-Haryana is an outlier, with far more non-operators than would be predicted from the numbers of non-owners. This is plainly because of the exceptionally large number of "owners" with tiny holdings, presumably often house-site only -- 48.5 percent of owners own below one acre (as against the all-India figure of 35.2 percent), and the average area they own is a mere 0.07 acres, far less than in any other State. 43/ Conversely, in Assam and Kerala, which are significantly below the regression line, rural households owning below one acre nevertheless average quite significant owned areas; hence a given proportion of non-owners translates into a rather small proportion of non-operators, because many small owners nevertheless do have considerable amounts of "farmable" land, and choose to operate it.

We have seen that non-owners and small owners are substantial net leasers in. In 1971-2, of 41.5mn. rural householders in India with ownership holdings below 2.5 acres -- averaging 0.7 acres each -- 9.7mn. leased in (an average of 1.71 acres), and 3.3mn. leased out (average only 0.72 acres). So these small owners leased in, net, at least 14.2 mn. acres -- there may have been some concealment (fn. 42). Thus net leasing in raised the operational area of the average Indian farmer owning below 2.5 acres (whether or not leasing in or out) by some 50 percent above his owned area (Laxminarayan and Tyagi, 1982, Tables 9, 27). On top of this, of the 7.5mn. non-landowning rural households (calculated from ibid., Table 9, and Sanyal, 1984, table 2), 5.4mn. leased in an average of 0.81 acres each, or 0.6 acres per non-landowning family whether leasing or not (Laxminarayan and Tyagi, 1982, Table 27). There is probably some concealed leasing in (though perhaps not very much in these small farms); anyway, these figures underestimate the role of tenancy, both in ameliorating the effects of landlessness on the poor and on permitting those with control of local land markets to extract monopoly rent from the poor.

In view of the considerable importance of leasing-in, what is striking about the ownership-operation relationship in Table 5 is its closeness.

(iii) Landless, near-landless, poor: An upper limit to the rural numbers usefully definable as "landless or near-landless" is those who neither own nor operate land, plus those who own holdings too small -- whether owner-farmed or leased out -- to contribute "substantially" (see below) to their family income. This is an upper limit because many in the latter group farm considerable amounts of leased-in land. (Moreover, because many in both groups rely on income from artisanship, trade or government service, the figure here proposed is even more of an upper limit to those in poverty induced by landlessness or near-landlessness -- though not, of course, to those in poverty for any reason.)

What is meant by "contribute substantially to their family income"? It is here proposed that a household deriving -- from the application to its owned land of other owned inputs plus labor -- at least one-third of its requirements to stay above the poverty line, cannot be defined as "landless or near-landless". I. Singh (1981, p. 14a) estimates the average household size, among persons likely to be in these groups, at 4.69 in 1980. 44/ Thus the number of rural households in a State, whose leading poverty characteristic in respect of assets is being landless or near-landless, is at most the number not owning or operating land, plus the number owning too little land to feed (4.69/3) or 1.56 persons. Given the high incidence of small children (and the low body weight of adults) in poor households, about 300 lbs. of cereals per person -- i.e. (1.56x300) or 469 lbs. of cereals (or the traded equivalent in other foods -- might about meet one-third of household annual food needs. It can be reasonably assumed that, at the poverty line, the household spends 20 percent of income on non-food. Thus a household at risk of being poor because "landless or near-landless" would either own and operate no land, or own land insufficient to yield -- net of off-farm production costs -- a value equivalent to about 469 (100/100-20), or about 585 lbs., of cereal, per year. (If a household owns enough land to produce this, but chooses to rent out instead of owner-operating, it would be strange to call it poor because landless. 45/)

Costs (i.e. factor shares) are attributed, for major Indian regions and quartile MEP-groups, in Quizon and Pal (1983, Tables 1-6). Accordingly, in Table 6, we can estimate the proportion of farm output that a landowning household in the poorest quartile must pay to non-members of the farm household in order to obtain its 585 lbs. of cereals. It has no land costs, and we assume it relies entirely on self-employed labor. 46/ We assume these households must bear the costs of fertilizer and farm equipment, and -- assuming some ownership -- only half the cost of bullocks, irrigation and "other". On these assumptions for the lowest-quartile MEP group, almost exactly 25 percent of farm output is eaten up by off-farm costs in the semi-arid tropical (SAT) regions, 15 percent in the Eastern rice region, 23 percent in the in the coastal rice region, and 39 percent in the North-west wheat region. 47/ The corresponding gross output requirements from owned land, in cereal equivalent per year, to avoid near-landlessness are about 585 (100/[100-25]) or 780 lbs. in the SAT, 688 lbs. in the Eastern and 760 lbs. in the coastal rice regions, and 959 lbs. in the NW wheat region.

How much land is needed to achieve this? Cereal yields for 1975-6 are given by States in Laxminarayan and Tyagi (1982, p. 153), but these figures, for cereals available to humans, exclude the substantial use made, by small farmers in particular, of stalks and stubble as livestock feed. A modest 15

percent is therefore added to these yields, to allow for the value of these items. 48/

As Table 6 shows, while absolute landlessness is rare in India, "near-landlessness" may be a significant problem. But the inclusiveness of the people who are not significant tenants definition must again be stressed. Many of the households in Column 5 (and therefore Column 6) of Table 6 are "adequate tenants", left with a crop-share at or above Column 1 levels after paying rent; and many other Column 5-6 households are not mainly dependent on agriculture, i.e., are in Column 7. To estimate the numbers of near-landless people who are not significant tenants who depend mainly on farming for their livelihood, a different approach is needed.

## 2. Rural Labor Enquiry evidence

In mid-1965 and mid-1975, the Indian Ministry of Labor enquired into the numbers and conditions of rural persons and households whose "largest source of income was wage-paid manual labor" in the previous farm year (1964-5 and 1974-5 respectively). A household that derived 35 percent of income from this source, 34 percent from operated (owned or other) farmland, and 31 percent from non-manual employment, is classified as a rural labor household. A rural labor household obtaining 51 percent of employee income 49/ from manual, wage-period farm labor was classified as "agricultural labor" (Labor Bureau, 1978, pp. 4-7).

These criteria do not coincide with the NSS's, used elsewhere in this paper. They look only at incomes from employment and own-account work, leaving aside rentier incomes; and they look at operational holdings only, irrespective of ownership, as a source of farm income which could be big enough to prevent a household from being classified as landless. Nevertheless, there is good reason to believe that "rural laborers" correspond rather well with those at risk of poverty through lack of adequate access to owned land. The data are useful, not only to cast light on the NSS landlessness data, but to introduce the question of trends.

From 1964-5 to 1974-5, rural households in India increased from 70.4 mn. to 82.1 mn. The proportion whose main single income source was manual employment rose very slightly, from 36.1 percent (i.e. 25.4 mn. households) to 36.9 percent (i.e. 30.3 mn.). 50/ Among these rural laborers, 43.5 percent had cultivated farmland during 1964, and 47.5 percent during 1974-5. 40.9 percent cultivated below half an acre, 19.3 percent half an acre to one acre, and 15.4 percent one to one-and-a half acres in 1974-5 (ibid., pp. 22-24). There was no big rise in reliance on employee income; there was some improvement in access to land by rural laborers — especially farm laborers. 51/ Of the 40 percent of rural labor households with over an acre of operated farmland, few can have been "poor because near-landless"; some will have been tenants, but some (though fewer) of the other 60 percent will have been renting out owned land. It is interesting to juxtapose the RLE estimate, that only 17.5 percent of Indian rural households in 1974-5 were labor households operating no land, with Sanyal's deduction (Table 5 above) that 27.4 percent of Indian rural households in 1972-3 were non-operators (of whom only a quarter were also non-owners). Clearly, about 10 percent of Indian rural households operate no land, but do not rely on rural labor as a main income source. Who are they? The obvious answer, "Artisans", has to

confront two facts from the twenty-odd village surveys from Gujarat and Rajasthan, mostly from the 1960s, that we have scanned. First, in most villages, a clear majority of artisans operates land (Bhat, 1964, p. 35; Saxena and Charan, 1973, p. 35; for owned land, compare N. Shah, 1968, p. 111). Second, many of the groups of specialists in traditional services (barbers, washers, carpenters, etc.) are as vulnerable to poverty as "landless agricultural laborers".

Perhaps the NSS group of 27-28 percent of Indian rural households that do not operate any land includes two quite different subsets. First come the 17-18 percent who are non-operating rural laborers, at great risk of poverty; only where jobs are increasingly assigned by achievement is this likely to be a temporary circumstance within the life-cycle (for village-study evidence, see Lipton, 1983b); this group is augmented by perhaps 2-3 percent of landless artisans. The other 7-8 percent of non-operating rural households are at the other end of the income scale: perhaps owning large areas and living from assorted types of rentier income, perhaps schoolteachers or officials.

### 3. Supporting micro-evidence

Cain (1981, pp. 442-9) convincingly compares evidence from one village in Bangladesh (Char Gopalpur) and three in semi-arid India. In the latter, in a variety of political and ecological circumstances and despite population growth, he finds landlessness affecting a decreasing proportion of households. The proportion of households currently owning no land was 12 percent in summer 1980, but 32 percent at inheritance (median date 1957), in Aurepalle; 17 percent (22 percent) in Shirapur; 18 percent (41 percent) in Kanzara; but in the Bangladesh village 29 percent (20 percent). Intra-owner distribution had also improved in the Indian villages (though the gains were mostly in deciles 3 to 6: the very poorest gained much less). Cain attributes this largely to threats of land reform, but adds that distress sales in Bangladesh -- and lack of social order, permitting the rich illegally to take land from the weak -- also create the contrast. The great variation in the extent to which states have accepted responsibility to stabilize incomes in bad years (enabling the micro-farmers to avoid forced sales of land) also must mean that "in many parts of India, conditions [viz. changes in, or harm done by, landlessness] are likely to be much closer to those described in Char Gopalpur, Bangladesh, than in the three Indian villages" (*ibid.*, p. 470). The NSS and RLE data -- suggesting little change, but if anything some improvement -- are the net upshot of areas of improvement and areas of deterioration within a vast country.

Nevertheless, much evidence suggests that growing "landlessness and near-landlessness" is not the central problem of Indian's rural poor. A study in two talukas of central Gujarat (Dantwala and Shah, 1971, esp. p. 87; Shah and Shah, 1974, for confirmation for the longer 1929-65 period) clearly shows a shift towards smaller holders, and away from tenancy. The fact that some of this is due to demographic pressure need not mean that distribution has worsened.

The high incidence of land operation among farm laborers, already spotlighted in the NSS, is confirmed by the micro-studies, but so is the small (and over the long term dwindling) amount, even of bad land, involved per family. In Matar Taluka, Gujarat the proportion of households dependent

mainly on farm labor rose from 1.8 percent in 1929-30 (cultivators 93.7 percent) to 24.4 percent in 1965-6 (53.6 percent) (*ibid.*, p. 248). Despite the enlargement of the laborer group by cultivators -- who (although relying increasingly on labor income, because of demographically-induced rises in person/land ratios) must have raised average size of holding for the laborer group as a whole -- average size of holding among cultivating labor families fell from 3.1 acres in 1929-30 to about 2 acres in 1965-6, and only 21.7 percent of the 244 agricultural labor families were "owner-cultivators" in 1965-6 (as against 12 out of 23 in 1929-30). Matters were made worse by the rise of about 30 percent in average family size during the 36 years -- to 4.4 for families relying mainly on agricultural labor income, 5.1 for cultivator families with 0-5 acres, and 5.4 for the village as a whole (*ibid.*, pp. 60, 146).

During a later period in Gujarat, however, a pair of surveys in Jambua village in 1964-5 and 1975-6 (V. Patel, 1980) strongly confirms the State-specific and nationwide findings of Vyas (1976, 1979): landlessness, whether defined in ownership or operational terms, and with or without "near-landlessness", has in recent years not been a growing component of rural poverty. Land operating households in Jambua increased by 36.6 percent (and total village population by 33.6 percent); "small farms", below 5 acres, increased their share in the numbers of operated holdings from 49.6 percent to 60.1 percent (i.e. by 21.2 percent), but in land operated from 22.3 percent to 31.3 percent (i.e. by 40.7 percent); hence average operated size per small farm fell by only 5 percent over the period -- as against a 10 percent fall in the size of the average farm above 5 acres, despite the "relegation" of the least-big of these latter farms from the big to the small group (*ibid.*, p. 131).

The Jambua resurvey, incidentally, confirms one of the two major hidden disadvantages of small farms as a hedge against poverty: fragmentation. Not only are small farmers' fragments smaller than big farmers' -- a finding confirmed in many micro-studies, notably Bambal (1966, p. 99) -- raising the "wasted" share of human and animal effort (in walks to, from and among workplaces) and of land (in partitions); the ratio seems to be getting more unfavorable to small farmers with demographic change (Patel, 1980, p. 123). The other hidden disadvantage of small-farm hedges against poverty -- difficulty in managing bad years without asset depletion, especially since bigger farmers' adjustments to bad years reduce demand for hired labor, which damages employment prospects for deficit farmers -- is also well exemplified in micro-studies, this time in the ICRISAT villages (Walker and Jodha, 1982, p. 9). Singh and Walker (1982, p. 25) find that "average resource stability ... was not significantly different" among operational farm-size groups (and that sharecropping helped to transfer risk to better-off landowners: pp 23-4) -- but that is only half the battle, if smaller, poorer farmers (1) must sacrifice expected income to richer people in order to "buy" such insurance, and (2) remain (Walker and Jodha, 1982) bad at handling risk without decumulating their few remaining assets.

\* \* \*

In rural India, at most 20 percent, probably closer to 15 percent, of people both depend mainly on agriculture for income, and have no, or minimal, access to land. By this, we mean that they are either non-owning, non-operating farm laborers, or owners of land insufficient to produce even one-third of caloric requirements. These proportions are increased only marginally if we add rural people with "no, or minimal, access to land" who are rural non-farm laborers. Where land is relatively good, these 15-20 percent probably overlap rather closely with India's rural ultra-poor. In areas of bad or ill-watered land, the "landless and near-landless" are little or no likelier to be poor or ultra-poor than persons owning up to 5-7 1/2 acres.

A few words are needed about landless agricultural laborers in urban India. Agricultural labor is the main occupation of 7 to 10 percent of the urban workforce, with, with women and casual work more heavily represented than in other urban activities. In 1972-3, almost 40 percent of female casual laborers in urban Gujarat, and over 60 percent in urban Maharashtra, gave their main income source as "agricultural labor" (male casuals respectively 22 percent and 33 percent: Visaria, 1980, p. 20).

The risk of urban poverty, and especially of ultra-poverty, increases sharply with casual labor -- and with female participation, up to a ceiling rate (Lipton, 1983a). While we do not know that these urban casual farm laborers are landless, or almost so, it is highly probable -- especially for women. More research into poverty and landlessness among urban farmworkers would be fruitful.

(1) Landlessness and near-landlessness: non-Indian evidence

I. J. Singh (1982, pp. 7, 9-12) has usefully summarized our limited information for Bangladesh and Pakistan. In Bangladesh in 1978, about 30 percent of rural households owned no land. About 40 percent were "dependent mainly on manual wage employment", and presumably around a quarter of these owned some land.

The data do not permit reliable inferences about recent trends; 52/ but the data for the 1960s (Khan, 1977a, pp. 150, 155-7), when set against the 1978 information, suggest a sharp increase in the incidence of landlessness, near-landlessness and rural labor-dependency. This is supported by village-level surveys (Cain, 1981), as are the very high levels of near-landlessness (Khan, Islam and Huq, 1981, p. 42). All this is in contrast to India, where these incidences have been stagnating or in mild decline, with population-growth and polarizing forces at least offset by the impact of land-reform (however unsatisfactory) and its avoidance, and by growing productivity on some of the tiny holdings of the near-landless.

The data on rural poverty in Bangladesh clearly indicate prolonged increases, at least in severity (Sen, 1981; Khan, 1977a). These trends cannot be directly proved to be due to the spread of landlessness and near-landlessness, but it is highly probable. Off-farm employment is likely to have been adversely affected both by the problems of the jute industry and by the shift to much less labor-intensive methods of rice processing, especially milling.

Information for Pakistan is even scarcer. Singh (1981, p. 6) suggests that agricultural non-operators of land -- and landless farm-labor households -- rose from 9 percent to 20 percent of rural people in the 1960s, but adds that "this reconstruction is very weak and involves many assumptions about the data". At the 1972 Agricultural Census, only 12 percent of farm households depended entirely on labor income; 34 percent were pure labor households, owning no land (Herring, 1983, p. 10). 53/

Between 1963 and 1973, distribution of land in Indonesia, and within it in Java, does not appear to have become more unequal (Rosenberg and Rosenberg, 1980, pp. 28, 34). However, population growth, upon a limited land surface, increased the proportion of persons forced by operational "near-landlessness" to live mainly from farm labor, and/or forced by low ownership levels to enter into less and less favorable tenancy arrangements (ibid., pp. 34, 49; Penny and Singarimbun, 1973). Tenancy in Java, through on ever harsher terms, did equalize access to land; of 164 families in one village in 1970, 37 percent owned no land (and a further 30 percent owned below 0.25 acres), but only 6 percent (28 percent) controlled corresponding areas (Penny and Singarimbun, 1973, pp. 10, 13). Micro-studies by Hart (1980) and others (see references in Lluch and Mazumdar, 1981) also suggest that one-third of Java's rural households were landless or near-landless in the mid-1970s, rather than "almost half" (Palmer, 1977, p.211). Both before and during Indonesia's "green revolution", the terms of access to these very fertile Javanese lands may well have been moving in favor of owners, but actual lack of access, while quite significant, does not appear to have increased.

In the Philippines, agrarian reform appears to have increased the income gap between (often poor) tenants and (often ultra-poor) landless laborers, but to have narrowed the gap between tenants and owners (Rosenberg and Rosenberg, 1980, pp. 82-93). Some village-level data confirm this (Ledesma, 1982, pp. 121-2, 203), and also show sharp rises in the proportions of pure landless-labor households, with neither owned nor operated land (Rosenberg and Rosenberg, 1980, p. 108).

Some Latin American evidence indicates similar perverse effects from tenancy reforms, with evictions (to evade reform) increasing the number of landless who supply hired labor, while the enlarged commercial farms (replacing former tenant holdings) demand less labor-per-hectare (Alberts, 1981, pp. 170-178, for Peru; Nieto, 1978, for Colombia).

African circumstances are of course rather different. For example, Nigerian micro-evidence suggests a clear downtrend in the land share of the 40 percent of rural people with the smallest holdings -- but if, as Matlon's data suggest, farm size (at least in Northern Nigeria) is not significantly related to income expectations because it deters off-farm work, then the "smallest" 40 percent need not have been poorer than the others to begin with, and may have gained more in off-farm income-share than they lost in landed income-share (Collier, 1983, pp. 203-6). Land scarcity -- and inequality -- in Africa is much more than is usually believed (Ghai and Radhwan, 1983, p. 11), but this tells us little about poverty, because poverty is not nearly as firmly linked to landholding status as in most rural areas outside Africa. Egypt, with its dense river-basin farming, is more like Asia in these respects than like most of Africa, but Egyptian land-use reform appears clearly to have increased both access to land, and demand for labor from those who remained landless (Harik, 1979, pp. 36-9, 80-4).

Plainly, the recent evidence about levels and trends in landlessness and near-landlessness, and their relation to rural poverty, outside India is fairly unsatisfactory. (Some of the older information, such as that in the excellent CEPAL studies summarized in Stavenhagen (1970), is now so out of date as to be seriously misleading.) But some negatives can be quite strongly affirmed. Landlessness and tenancy are not in general increasing. Land distribution, and the terms of tenancy, are not in general worsening. Ceilings-plus-redistribution is not an absurd failure. Land access inequality is not as important a direct correlate of poverty as this author, anyway, had believed -- especially if we allow for the very strong relationship between farm size and household size (Singh, Asokan and Walker, 1982, p. 24; Bambal, 1966, p. 59; Bhat, 1964, p. 67; Chaudhary and Bapat, 1975, p. 310, on fallowing; Norman, 1976, pp. 14-17, 31-38, for Nigeria).

Does all this mean that land inequality doesn't matter? Exactly the opposite. Just as with high-risk poverty-induced undernutrition, so with land hunger as a cause of dangerous ultra-poverty: if there is not so far to go as had been imagined, the journey becomes more promising, and the case for delay looks more like a feeble excuse. Also, the evidence on labor (Lipton, 1983a) suggests not only that the ultra-poor do even worse than had been feared in respect of wages and participation and unemployment (fluctuations as well as levels in each case), but also that they do worst when assetless; lack of any fall-back weakens their bargaining position and compels them to incur massive search costs. Land redistributions do achieve something -- and may not need to achieve their full target, may indeed succeed despite much evasion, if the chief aim is to provide a reserve position for the ultra-poor.

TABLE 1:  
PERCENTAGES OF HOUSEHOLDS IN EACH LANDOWNING GROUP  
WHO ARE IN GIVEN "POVERTY RISK" CLASSES BY OUTLAY PER PERSON PER MONTH:  
W. INDIA, 1972-3

Size of land holding possessed acres	GUJARAT					MAHARASHTRA				
	Spending below Rs 15/ person/month	In poorest outlay/person/ month decile	In 2nd- poorest decile	In middle quintile	In richest quintile	Spending below Rs 15/ person/month	In poorest outlay/person/ month decile	2nd poorest decile	Middle quintile	Richest quintile
Nil	36.8	9.8	10.3	22.6	17.8	60.0	12.8	12.6	15.3	23.2
< 1.0	44.0	14.1	11.0	19.5	14.5	63.6	12.9	10.6	20.3	14.9
1-2.49	39.8	11.8	13.3	20.7	15.3	66.6	12.1	12.9	19.5	12.7
2.5-4.99	41.2	14.9	11.1	20.0	17.1	59.4	10.9	10.7	21.6	17.5
5-7.49	37.3	9.1	13.6	19.5	18.5	58.8	9.5	9.2	21.1	20.2
7.5-9.99	29.9	6.9	6.9	17.3	26.8	57.5	4.8	8.6	30.2	17.2
10-19.99	24.4	5.4	7.7	19.3	24.0	47.7	6.0	7.9	20.5	24.0
20+	13.5	1.9	3.3	21.0	25.7	36.1	3.9	4.4	18.6	38.7
All	34.7	10.0	10.0	20.0	20.0	57.3	10.0	10.0	20.0	20.0

Source: Visaria (1978), tables 1-2, A1-A2.

TABLE 2: POVERTY AND DEPENDENCE ON NON-LANDED WORK:  
RURAL INDIA, 1977-78

<u>Household Type</u> <u>(main source of income)</u>	<u>Percentage</u> <u>share in</u> <u>all rural</u> <u>households</u>	<u>Incidence</u> <u>of poverty</u> <u>within each</u> <u>household type</u> <sup>a/</sup>	<u>Percentage share in</u> <u>all rural households</u> <u>households below</u> <u>the poverty line</u>
1. Self-employed in agricultural occupations	46.1	30.1	35.0
2. Self-employed in non-agricultural occupations	10.6	38.1	10.1
3. Agricultural labor households	29.9	58.8	44.2
4. Other labor households	6.9	38.5	6.7
5. Other rural households	6.5	23.5	3.9
6. All households	100.0	39.6	100.0

a/ Percentage of households spending below Rs. 50/person/month.

SOURCE: NSS Draft Report No. 298 (8), cited in Sundaram and Tendulkar (1983),  
p. 59.

TABLE 3: TENANCY AND OPERATIONAL SIZE, INDIA, 1971-72  
 Leased-in area  
 (by size class of operated area: percent of operated area)

<u>State</u>	<u>.002-1 ha.</u>	<u>1-2.02 ha.</u>	<u>2-4.04 ha.</u>	<u>4.05-10.12 ha.</u>	<u>10.13 ha+</u>	<u>All sizes</u>
Andhra Pradesh	13.1	11.3	11.2	9.8	4.3	9.1
Assam	26.9	22.7	16.0	7.6	1.4	19.6
Bihar	26.6	20.1	10.6	5.8	2.1	14.5
Gujarat	4.6	3.1	5.3	4.0	3.4	4.0
Haryana	25.9	34.1	31.9	20.7	14.7	22.6
Himachal Pradesh	14.4	10.5	4.4	-	10.1	
Jammu, Kashmir	4.8	6.3	11.0	14.0	-	8.0
Karnataka	18.2	20.3	12.1	16.7	15.8	15.8
Kerala	9.0	9.1	7.0	8.3	1.8	8.3
Madhya Pradesh	21.1	10.5	8.4	7.7	3.7	7.5
Maharashtra	7.1	7.7	7.5	5.9	5.3	6.1
Orissa	22.0	12.9	13.2	8.3	8.8	13.5
Punjab	13.8	35.5	38.3	26.3	18.9	28.1
Rajasthan	6.4	5.3	8.6	6.6	3.8	5.6
Tamil Nadu	21.5	14.8	14.4	5.8	2.2	13.2
Uttar Pradesh	19.7	15.0	12.9	8.1	10.4	13.3
W. Bengal	25.7	23.8	14.4	5.8	-	18.6

Source: Laxminarayan and Tyagi, 1982, pp. 74-9, using NSS, 26th round.

Note: All figures likely to be under-estimates, but ratios between pairs of figures in the same row (State) should not be very seriously wrong.

TABLE 4: LABOR HIRING BY TENANTS AND OTHERS

(Two villages in Chengalpattu, Tamil Nadu, 1976)

<u>Group</u>	<u>Number of Households</u>	<u>Land (acres):</u>			<u>Labor days hired 2 Jan to 14 July 1976</u>	<u>Hired days per acre operated</u>
		<u>Owned</u>	<u>Rented in (net)</u>	<u>Operated</u>		
"Landless"	104	-	52.2	52.2	42	0.80
"Petty peasants"	55	25.1	122.5	147.6	175	1.19
"Medium peasants"	25	101.2	21.0	122.2	430	3.52
"Big peasants"	11	406.5	-21.5	385.0	1182	3.07
Landlords	9	174.2	-174.2	-	-	-

SOURCE: Shivakumar (1978), pp. 763-4.

Table 5. NON-OWNERSHIP, NON-OPERATION, NEAR-LANDLESSNESS: INDIA, 1972-3

STATE	Percentage of rural households				Z (LOP cut- off): hec- tares	100H percent- age of rural house- hold owning below Z %	100I average short- fall of these behind Z %	G Gini coeff. among these	Sen LOP	Owned	For households owning no land, or land between 0 and Z hectares:			Percentage of all rural house- holds below poverty line 1972-3*	X below 1 Acre	Average owned size	Of Landowners			
	Not owning	Not op- erating	Owning, not operating	Neither owning nor operating							Leased In	Leased Out	In-Out Owned				Average owned size	Z 1-2.5 acres	Average owned size	Z 0.01 2.49
Andhra P.	6.9	36.0	29.7	6.4	2.02	78.6	78.7	0.62	0.73	19633	5830	28580	1.16	70.9	40.6	0.20	17.7	1.58	58.3	0.62
Assam	25.0	28.4	13.8	14.6	1.00	69.6	72.3	0.58	0.61	3174	5499	306	1.64	69.7	21.1	0.40	23.4	1.70	44.5	1.08
Bihar	4.3	20.6	7.5	3.1	1.00	71.7	77.7	0.57	0.65	11089	8597	1193	0.68	56.4	48.6	0.22	18.7	1.58	67.3	0.60
Gujarat	13.4	33.7	25.5	8.3	2.02	67.5	75.3	0.63	0.61	10417	3287	510	0.27	63.3	25.8	0.15	13.0	1.70	38.8	0.67
Jammu and Kashmir	0.9	6.6	6.1	0.6	1.00	59.2	50.5	0.31	0.39	1559	272	32	0.15	12.3	21.0	0.62	37.2	1.73	58.5	1.33
Karnataka	12.5	29.8	20.3	9.5	2.02	67.2	73.4	0.60	0.60	4258	11618	2133	2.23	54.8	23.6	0.15	14.9	1.73	38.5	0.98
Kerala	15.7	11.7	1.4	10.2	1.00	88.8	80.6	0.56	0.81	4518	754	147	0.13	87.5	56.5	0.32	16.5	1.53	73.0	0.59
Madhya P.	9.6	16.9	12.1	4.9	2.02	57.2	70.0	0.56	0.50	19145	8232	1006	0.38	44.4	19.2	0.17	11.5	1.70	30.7	0.74
Maharashtra	15.8	31.0	21.1	9.9	4.05	85.1	76.2	0.61	0.84	68257	7775	1952	0.09	75.8	20.2	0.15	12.3	1.56	32.5	0.68
Orissa	10.6	25.1	17.3	7.8	1.00	68.9	72.3	0.56	0.60	6202	3751	977	0.45	67.7	34.3	0.27	24.1	1.63	58.4	0.83
Punjab and Haryana	7.1	58.6	52.9	5.7	1.00	67.5	90.4	0.76	0.66	39	4087	308	9.97	17.6	48.5	0.07	8.4	1.63	56.9	0.30
Rajasthan	2.9	7.8	5.5	2.3	2.02	46.8	59.2	0.41	0.36	10562	4326	429	0.37	29.1	12.4	0.22	11.7	1.66	24.1	0.92
Tamil Nadu	17.0	41.9	27.9	14.1	2.02	89.8	83.1	0.68	0.85	17584	5495	1153	0.25	71.6	43.5	0.20	17.9	1.61	61.4	0.61
Uttar Pradesh	4.5	24.3	20.4	3.8	1.00	65.6	71.4	0.56	0.57	22067	16064	2558	0.61	29.8	38.8	0.22	27.2	1.63	61.0	0.73
West Bengal	9.8	30.9	23.1	7.8	1.00	77.6	75.7	0.59	0.70	8033	6507	833	0.71	71.9	46.7	0.25	21.1	1.68	67.8	0.70
All India	9.6	27.4	20.5	6.9	1.00	(62.2)	(82.8)	(0.59)	0.58	97151	83876	9493	0.77	57.9	35.2	-	17.7	-	52.9	1.00

SOURCES: Sanyal (1984), tables 2-5; Sarvekshana, July 1979; Laxminarayan and Tyagi (1982), pp. 74, 116-7.

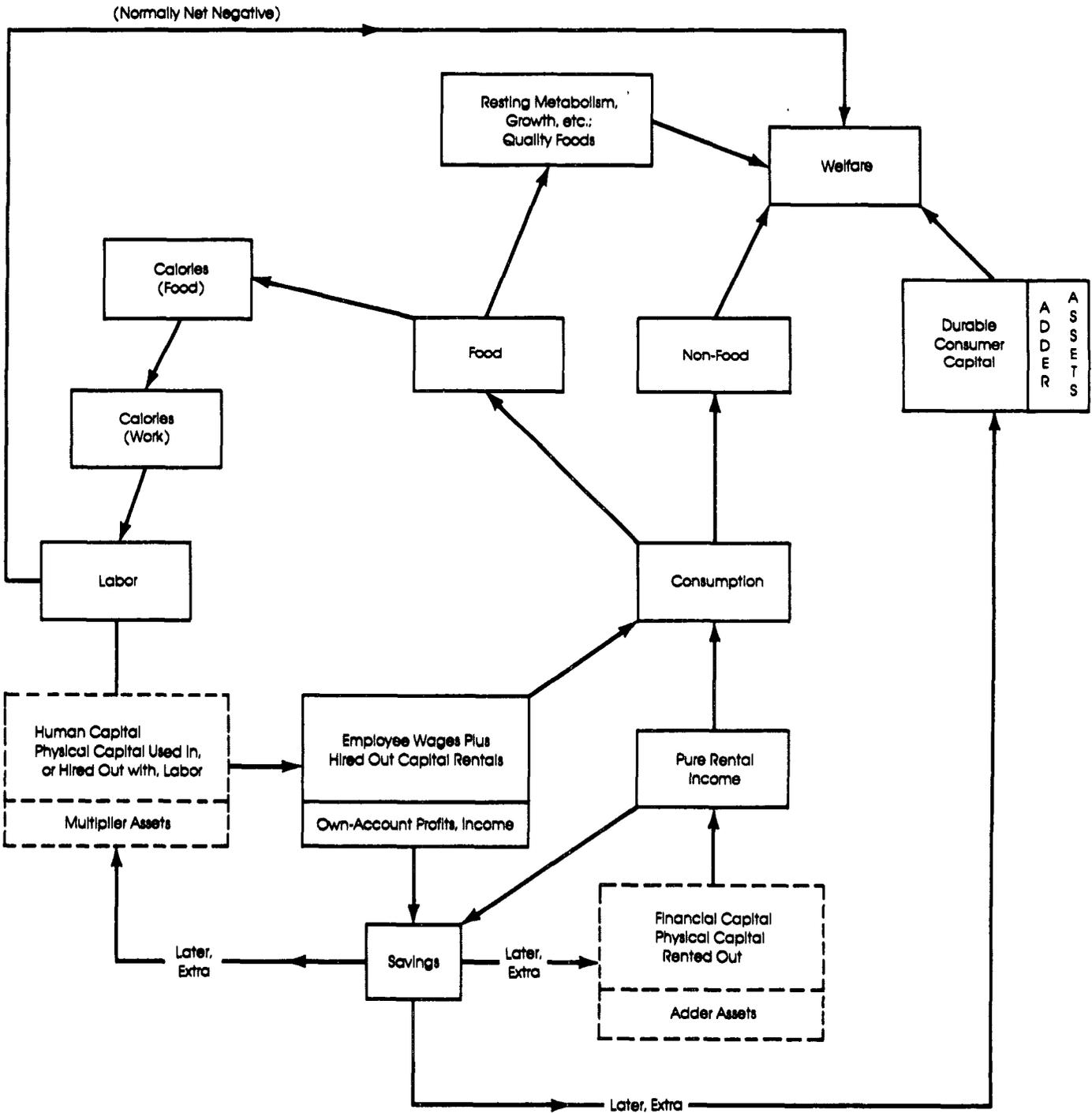
NOTE: Z is the National Sample Survey land-category upper limit above the area, in hectares, ownership of which is associated with being on the "poverty line" in each State. The next four columns then show the incidence, shortfall, and "intra-poor Gini" of those in "Land Ownership Poverty" (LOP) -- i.e. owning below Z -- and then the Sen index of LOP calculated from these by Sanyal. The next four columns estimate the role of declared leasing in and out in modifying the LOP of households owning below Z. The definitions of H, I and G are as in the construction of the Sen index (Sen, 1981).

TABLE 6. LANDLESSNESS, NEAR-LANDLESSNESS, ETC.: INDIA 1970-1

STATE	1	2	3	4		5	6	7
	Gross cereal output needed to avoid "non-near-landless" net grain output	Cereal output (gross): lbs. per acre; + 15% allowance for live-stock benefits: lbs.	Owned acreage needed to avoid "near-landlessness" if cereals "typical" of farming	Neither owning nor operating (landless)	Owning below "requirement" (near-landless, or "adequate" tenants).	Proportion of all rural households:	Total "landless", and "near-landless" or "adequate tenants"	Proportion of all rural workforce, 1971, mainly non-agricultural
Andhra Pradesh	773	1089	0.71	6.4	37	43	17.3	
Assam	688	1032	0.67	14.6	27	42	15.9	
Bihar	688	975	0.70	3.1	47	50	10.4	
Gujarat	780	950	0.77	8.3	29	37	14.1	
Hayara	959	1366	0.70	"	"	"	21.5	
Jammu, Kashmir	959	1329	0.72	0.6	14	15	17.1	
Karnataka	773	1115	0.69	9.5	23	32	15.5	
Kerala	760	1553	0.49	10.2	49	59	38.0	
Madhya Pradesh	780	761	1.02	4.9	24	30	9.4	
Maharashtra	780	715	1.09	9.9	27	37	12.7	
Orissa	688	942	0.73	7.8	33	41	14.8	
Punjab	959	2191	0.44	(5-7)	35	41	20.5	
Rajasthan	780	724	1.08	2.3	13	15	12.5	
Tamil Nadu	773	1683	0.46	14.1	38	53	19.1	
Uttar Pradesh	823	1054	0.78	3.8	32	36	12.3	
West Bengal	688	1340	0.51	7.8	39	47	18.2	

Notes, sources, methods: "Non-near-landless" net grain output is 585 lbs. (see text). In Col. 1, we multiply this by the ratio of output gross, to output net, of all off-farm production costs, for the poorest quartile, by regions and States, estimated from Pal and Quizon (1983); we assume that all fertilizer and farm equipment costs, plus half bullock, irrigation and other costs, but no land or labor costs, must be paid "off-farm". Col. 2: Laxminarayan and Tyagi (1982), p. 153. Col. 3: Col. 1-Col. 2. (Assumes non-cereals produce no more value-added per acre than cereals; Cols. 3-6 are therefore maximum estimates). Col. 4: See Table 5. Col. 5: interpolated from Sanyal 1983, Table A.1, using *ibid.*, Table 4, col. 3. Includes "adequate tenants", viz. owning below the critical Col. 3 average, but renting in (net) enough land to retain Col. 1 output levels after rent payments. Col. 6: Col. 4-Col. 5; includes landless, near-landless, and "adequate tenants". Many in each group do not live mainly from agriculture (see text); Col. 7 (Singh, 1981, table 7.4) shows 1971 proportion of rural workforce engaged mainly in non-agricultural activities.

**Adders and Multipliers: Assets in the Food-Work-Welfare Cycle**



FOOTNOTES

1. Only in India, among LDCs, are closely comparable village-level and regional-sample data available on such a basis. Inequality within a small rural area is much more in most of India, Bangladesh and Pakistan than in most of Africa, but less than in most of Latin America.
2. The better-off persons are generally bigger, and less "selected" for high metabolic efficiency. These characteristics raise, respectively, their kgs. per person and their caloric requirements per kg., as compared to poor persons. Also the child/adult ratio is higher among the poor, again lowering their relative requirements per person. See Lipton (1983).
3. In the higher deciles, a substantially larger proportion of household members are adults, able to work; and unemployment rates are lower. Work per household member, despite much lower rates of female participation, is probably not much less in top than in bottom deciles. Is the bottom decile's work twenty times nastier, per hour?
4. The fact that this analysis switches between ownership and operation of land and other assets, when analyzing the relationship of asset-holding to poverty, is inevitable, given the data. The bitty evidence suggests that the damage done by such sloppiness is surprisingly small. For a constructive, but very data-thirsty, suggestion, see Penny and Singarimbun, 1973.
5. (a) Normally, it is the second part of the "calories-labor-income" sequence that can be made more efficient (multiplied) by appropriate physical or human assets. They might conceivably also multiply the first conversion, by raising metabolic efficiency. (b) The distinction between "multipliers" and "adders" is, in regard to returns, precisely analogous to the variable-fixed distinction in regard to costs.
6. A poor household would presumably try to structure these assets, not only for high yield, but also to reduce the covariance of their yield with labor income. Less poor people would presumably be less concerned with the latter, risk-reducing, objective, partly because their risk aversion is less, partly because labor income is a smaller part of their total income.
7. This is not so, however, where extra land is relatively plentiful (at little greater cost per unit of output) than intra-marginal, and/or draught-power is especially scarce. In Botswana, draught animals are much more unequally distributed than land: see Watanabe and Mueller, 1982, Table 3.
8. A powerful statement is Chenery et al. (1975). There is evidence that countries with rapid growth tend to show above-average records in alleviating poverty, but also that, without conscious policies for "redistribution with growth", early development probably increases

economic inequality, down a "Kuznets curve". See World Bank (1980), pp. 35-6, 40.

9. Notably because land is worked more labor-intensively in smaller holdings (partly because labor search costs, for employer and employee, are avoided by family labor). See Berry and Cline, 1979.
10. See above, fn. 4.
11. These need not imply collective or cooperative land management or use.
12. These are Siamese twins. As population grows, the dilemma of the commons intensifies. This "tragedy" (akin to Prisoner's Dilemma or the isolation paradox) arises because each user of a common facility, e.g. a grazing right, faces incentives leading him to increase use, e.g. private herd size, until marginal private revenue equals marginal private cost. But, with a common facility and uncontrolled access, marginal private cost is zero. Hence the totality of use (e.g. of private herds grazing common land) is much larger than the socially optimum level, which would equate marginal revenue and marginal social cost -- the latter being well above zero. Since marginal social cost increases with the number of grazing beasts, more herders (population growth) normally increase the excess of actual, privately optimizing, use over the social optimum, and deepen the "tragedy".
13. This Program, since 1973 indirectly supported by two successive IDA loans (the first and second Livestock Development Programs), involves public fencing and borehole provision on ranches of several hundred acres. These facilities are rented to private ranchers. The aim is to reduce their overgrazing on the remaining common lands; the previously common lands, now enclosed for ranching, were supposed to have been ungrazed communally beforehand. Both aim and supposition are open to question (Hitchcock, 1979; Lipton, 1979).
14. This is particularly likely if (a) growth has been unequal, concentrating on persons with marginal propensities to consume animal products well above, and cereals well below, the national average, or (b) exporters have privileged access (e.g. under the Lome "beef protocol" as Associates of the European Community) for some animal products.
15. In the sense that, while it is technically feasible to lift or ease the apparent "constraints", the cost of doing so -- unless prices or technology become much more favorable -- is prohibitive.
16. Details of the construction of this line are given in Visaria (1978). It certainly falls far above the level of nutrition-linked ultra-poverty, as defined in Lipton (1983). However, this hardly matters in this context, especially as the probability of being in the bottom two MEP deciles -- which are certainly ultra-poor -- is also, as Visaria shows, unaffected in both States by landholding up to the levels stated here.

17. (a) The increases in average family size continued to accompany increased holding size well after the 7.5-acre level, but the incidence of poverty then fell off sharply. (b) Completely non-landowning households who derived most of their income from cultivating land (as pure tenants) were too small a sample -- 2 in rural Maharashtra, 15 in rural Gujarat -- so the ".1-1 acre owner-cultivators" are used.
18. For example, in rural Gujarat, 20.1 percent of landless households were in the bottom two MEP deciles (and 17.8 percent in the top two); 25.3 percent (14.5%) of households owning 0.01-1 acres; 25.1 percent (15.3%) with 1-2.5 acres; 26.0 percent (16.1%) with 2.5-5 acres; and 22.7 percent (18.5%) with 5-7.5 acres. Only for larger holdings did the position shift notably: 13.8 percent (26.8%) at 7.5-10 acres; 13.1 percent (24.0%) with 10-20 acres; and 5.2 percent in the two poorest deciles (but 35.7% in the two richest) for households owning above 20 acres (Visaria, 1978, p. 49).
19. The three poverty lines use MEP of Rs. 42 (1972-3), corresponding to expected calorie intake of 2435/CU; Rs. 38; and Rs. 32 (corresponding to the lower calorie norms advocated by Sukhatme, 1982). The linear regressions of percentages in poverty (P) on NSS year(t) (1963-4 = 0, 1964-5 = 1 ... 1973-4 = 11), are: for an Rs. 42 poverty line,  $P_1 = 43.83 - 1.21t$  ( $r^2 = 0.55$ ); for Rs. 38,  $P_2 = 34.78 - 1.04t$  ( $r^2 = .53$ ); and for Rs. 32,  $P_3 = 22.23 - 0.91t$  ( $r^2 = 0.58$ ). All beta coefficients and constants are significant at 2 percent or better.
20. By definition, these households' main income source is agricultural labor, so that land must be a smaller source.
21. Ledesma (1982, p. 22) divides household members into "economically active, i.e. aged 13-65" and "other". We arbitrarily weight these at 1 and 0.5 consumer-units respectively. The differences among the four groups in monthly expenditure per person are smaller -- i.e. the child/adult ratio is presumably larger in landed households -- but the direction is the same.
22. Later sections consider terms of access to land (e.g. tenancy), levels and trends in poor people's access and terms, and the position of particular groups (women, low castes, etc.) regarding the land-poverty relationship.
23. A large majority of Roy's districts reveal, where a significant result is obtained, persistently inverse relationships, including the progressive "leader", Ludhiana. Yet -- greatly influenced by one district, Amritsar -- Roy implies that the inverse relationship has vanished. Bhalla and Chadha (1982, p. 881), for a random stratified sample of 1,663 farm households throughout Punjab State in 1974-5, show that gross output per acre rises by 0.46 percent (significant at 0.01) for each 10 percent fall in farm area. The response of net output would be more, since large farmers tend to use more purchased inputs per acre than small ones. Yet the authors conclude that "in the central Punjab plains, the traditional inverse relationship between farm size and productivity stands reversed" (Bhalla and

Chadha, 1982a, p. 876); no separate data or equations for sub-regions are given.

24. These authors also find an inverse relationship in a large majority of cases where there is statistical significance.
25. Readily available land too bad for economic crop farming, but suitable for grazing -- often rocky below a few inches of soil -- decreases the private cost of holding draught, as do the relatively ample crop residues of traditional long-strawed millets and sorghum. Grazing rights are less and less often communal, however; maintenance costs are raised by the need to supplement feed with cattle-cake, etc., before the heavy work of breaking the hardpan; and capital costs of draught beasts are substantial. Hence draught livestock in semi-arid areas, while attractive to own compared with other potential draught sources, are very unequally distributed among operational holdings.
26. The fragmentation of small holdings into very small plots means -- in conjunction with the extremely imperfect market in hired services of draught animals -- that small farm operations lose out heavily. That is because -- in semi-arid areas especially, with their extensive farming, and often substantial rocky areas between farmlands -- large parts of draught-animal energy are used by small farmers in movement to, from and among small plots, rather than in ploughing. This is not a true (technological) economy of scale, since either consolidation of plots (without changing the distribution of land among farms) or a less imperfect hire market would remove this drawback of smallness even without technical change.
27. We assume either share-rent with the Cheungian general-equilibrium argument sufficiently valid that remaining Marshallian input-reduction inefficiencies are outweighed by the efficiency effects of the move towards optimum size, or fixed rent.
28. This is analogous to Rudra's observation that strong price correlation between two markets need not prove that both are efficiently integrated; both might be subject to similarly structured monopoly power or other distortions.
29. There is no convincing reason why concealment of leasing in -- presumably, for fear that landlords would retaliate if tenants revealed it to survey officials -- should distort the ratios between entries for any one State in Table 3. If anything, such concealment and fear would be greater for smaller tenants, so that the extent to which tenancy in was moving land to smaller operations would be greater than suggested by Table 3.
30. That is especially the case since "small to large" leases are of two types: mortgages, in which the small owner is often in process of losing land (and almost always obtaining bad terms for its rental) on account of an earlier loan; and true rentals, in which the small owner chooses to adjust operated land downwards and use labor elsewhere. Prevalence of the former type would normally be linked to

poverty, of the latter to escape from poverty. The two types were hardly ever separated in survey data (an exception is Chaudhary and Bapat, 1975, pp. 308-11).

31. A contrary impression in NSS data (Sanyal, 1984, Table 1) is due to the inclusion of significant homestead and other non-farm land in "ownership" but not in "operational" holdings.
32. Not least because the appropriate theory is that of the farm household, with integrated decisions on production and consumption (Barnum and Squire, 1979).
33. This need not weaken the case for reform. On the contrary, some sorts of legislation, apparently intended to reduce poverty by changing rights in land, are evaded in ways that actually support that intension. See below.
34. Most comparisons (a) fail to separate differences in labor input and output per acre, associated with sharecropping, from differences associated with size -- normally sharecroppers have smaller holdings, and thus more available family labor per acre, than owner-operators (one would thus expect them to achieve yields better than owner-operators (not just equally good), if the inverse relationship applied and if sharecropping did not affect efficiency); (b) fail (unlike Bell, 1977) to separate (i) one operator's input allocations between sharecropped and owner-farmed land, and (ii) village-level allocations between sharecropping and owner-occupying operators; (c) fail to ask whether, even if all types of holding are farmed equally (in)efficiently, total output would rise if the whole system of tenure were changed, to all-owner-operated or all-sharecropped.
35. That is, the minimum of the average-cost curve is, for most crops (or crop combinations) in most developing rural environments, likely to occur as a fairly small operational holding size, say 1-6 acres per household. This is more clearly so (a) if holding size is measured per person or per worker, not per household; (b) if costs are measured at social values, since smaller holdings are relatively intensive users of unskilled (including off-peak) family labor with low opportunity-cost, and relatively small users of subsidized foreign exchange or capital-intensive purchased inputs, per acre.
36. (i) In the Indian NSS materials, the relevant data are for "(household) ownership holdings" and "household (agricultural) operational holdings". The data for "operational holdings" tout court list the numbers of farm businesses in each size group. One household sometimes owns only a part of an operational holding -- and, much more rarely, one household owns more than one operational holding. The "household operational holding" is the area corresponding to the household's share in the "operational holding" -- or, rarely, in "operational holdings" (Sanyal, 1984, Table 1). (ii) NSS data also classify households by area of "land possessed" -- operational landholding whether agricultural or not (ibid., p. 6).

37. A further, pragmatic, argument for using operational holdings is that they are more easily observed, less sensitive in an environment of agrarian reform, and thus more likely to be accurately reported, than are ownership holdings. Leasing out is obviously and massively understated by NSS -- being allegedly 5 percent of leasing in -- yet some tenants, fearful of angering landlords, conceal even leaseings-in.
38. The Sri Lankan evidence (ILO, 1971) suggests that most households classified as landless in fact have (own? operate?) a significant patch of homestead land, around 0.4-0.8 acres. This usually grows crops for home use, and often cassava, an important calorie source.
39. Let Z be the nearest "NSS borderline", between ownership holdings, above the "poverty-line holding" -- that just sufficient to achieve a non-poverty MEP. In each State, (i) H is the proportion of rural households owning below Z; (ii) I is the proportion of Z by which the average land area owned by the "sub-Z household" falls short of Z; (iii) G is the Gini coefficient of land ownership among sub-Z households. Then the LOP index (P) for a State (Sen, 1981) is given by  $P = H (I + [1 - I]G)$ . See Sanyal, 1984, Table 5.
40. First, the Z "poverty" borderline used in Table 5 is in several States set higher than the true borderline (2.5 areas in the Punjab, against zero; 2.5 in Jammu (1); 2.5 in Uttar Pradesh (0.5)), so as to permit G and I to be estimated, but implicitly overstating H. Second, the NSS's discontinuous gaps between recorded holdings groups imply overstatement of G. Third, there is a relationship, not allowed for in these data, between low ownership holding and reliance on other sources of income. Fourth, within-State heterogeneity -- associating worse land within a District (or sub-region) with higher owned holdings -- is not allowed for. Of course Sanyal is well aware of all this -- he is making the best of the available data.
41. The high LOP Sen index for 1971-72 in Maharashtra is due partly to the 12.5-acre Z used (the evidence in Visaria, 1978, would suggest 10 acres); similarly, the high index in the Punjab is due to the 2.5-acre Z.
42. Owners of small holdings are likely to state those holdings fairly reliably. Owners of large holdings have two motives to understate them: to conceal renting-out and thus evade laws giving rights to benefits; and to conceal ownership as such, or operation, and thus evade ceilings laws. Moreover, big owners are very unlikely to report zero holdings or very small ones; they can satisfy both the law and a hard-pressed (but moderately observant) interviewer by reporting a significant, but legal, owned (and operated) area. Operators have some motive to conceal land rented-in, if landlords might retaliate against them for disclosure -- but the motive is weak, since the survey hardly ever asks for the landlord's name, and he is anyway unlikely to discover whether information has been given. Land operation is directly observable even in the few days that an NSS survey officer works in a village; it is thus rather unlikely that an operator of land will claim to be a non-operator (he

- may well, if large, understate his holding). Renters out in India massively understate their activities, but probably almost all in the large ownership groups, which might be seriously affected by legislation: rentals-in in NSS data in 1971-2 exceeded rentals-out by 20 to 1 (Laxminarayan and Tyagi, 1982, p. 121).
43. The emergence of this phenomenon can be seen by comparing Punjab-Haryana (P-H) with all India (A-I) over time, in respect of (a) percentage of ownership holdings below 1 acre, (b) average size of those holdings. In the 8th round (1954-5), (a) was only 13.9 percent for P-H (well below the 24.2 percent for A-I), and (b) was 0.24 acres, not much different from West Bengal (0.28), Uttar Pradesh (0.27) or Orissa (0.27). In the 17th round (1960-1), (a) had leapt to 40.8 percent for P-H (32.5 percent A-I) and (b) had fallen to 0.17 (W. Bengal and U.P. 0.25, Orissa 0.19). By the 26th round (1971-2), (a) rose further to 48.8 percent for P-H (35.2 percent A-I) and (b) fell to 0.07 (cp. 0.25 in W. Bengal, 0.27 in U.P. and Orissa). See Sanyal, 1984, Tables 3 and 4. The major growth of non-farm activity in P-H is plainly the main cause, especially if the Haryana survey results of S. Bhalla (1983), that agricultural laborers are not leasing out land, apply also in the Punjab. They may be selling it!
  44. Around 1980, he estimates 15.0m. Indian households as "non-cultivators with income from wages over half total income" (average family size 4.4), and 14.0m. "cultivators operating below 1 acre" (5.0), out of 93.6m. rural households (5.6). The comparable figures for Pakistan are 2.0 m. (4.5) and 0.2 m. (4.9) out of 10.1 m. (5.8) and for Bangladesh 3.0 m. (4.6) and 1.1 m. (5.1) out of 14.3 m. (5.8).
  45. An exception arises where most renting-out, by non-operating small landowners, is on the basis of usufructuary mortgage. Sanyal (1984, Table A.2) cites NSS data for 1971-2 to show that this was the case for the 0.01-0.99 acre ownership group, in Andhra Pradesh, Bihar, Kerala, Haryana (not Punjab), and Tamil Nadu. However, in all these cases, the proportion of this ownership group leasing out at all was small -- respectively 7.8 percent, 10.3 percent, 3.5 percent and 8.0 percent -- and there can have been little impact on the size of our "potentially poor due to near-landless" groups.
  46. We seek to assess, not opportunity-costs, but direct (real) costs, to be deducted from gross output and paid off the farm. The great majority of farms below the size-limits of Table 6, col. 3, if they operate what they own, can do so with family labor alone. Probably a large majority, apart from exchange-labor, indeed does this.
  47. For assignment of States among regions, see Quizon and Pal (1983), p. 2. Where a State is divided between regions, we average the cost assignment; where a State is assigned "mostly" to one region but "partly" to another, we weight them 2:1. Since three of the four "divided" States are divided between the semi-arid tropical region and coastal rice region, with closely similar shares of off-farm costs in gross output (on our assumptions, for owner-occupiers in the

poorest quintile, 25 percent and 23 percent respectively), this can involve serious error for only one State (Uttar Pradesh).

48. In the 0.02-5 acre group of operational holdings, livestock value averaged 263 Rs/acre (Laxminarayan and Tyagi, 1982, p. 148). Four papers to ICRISAT's 1983 Hyderabad conference on marketing estimated the proportion of gross cereal output value comprised, in different areas, by stalks for cattle; 15 percent was the lowest estimate.
49. The report (Labor Bureau, 1978, p. 7) refers to over 50 percent of "total income", but in the context this must mean "total income from employment" if the categories (agricultural labor, other rural labor, and non-labor rural households) are to be mutually exclusive and jointly exhaustive.
50. The proportion of rural households who were agricultural laborers -- i.e., whose main income source was agriculture, but not on operated land -- actually declined marginally, from 30.9 to 30.8 percent (Bureau of Labor, 1978, pp. 22-3). Growing absolute landlessness and proletarianization, at all-India level, is a myth.
51. Households operating no land fell from 56.1 percent to 50.8 percent of agricultural laborers (ibid., p. 22), and such agriculture-dependent households with no operational holding thus fell from 17.3 percent to 15.6 percent of all rural households (see fn. 50). Unfortunately, Statewise data -- and acreages operated -- are not available.
52. Certainly, no such inferences can be drawn from the 1977-8 Land Occupancy Survey. The two successive years involved distinct samples, of different size and reliability (Cain, 1983). Also, the period is far too short for trends to be inferred.
53. Of operational farms, rented or owned, 43 per cent covered below 7.5 acres (average size 3.7 acres) (Herring, p. 100). In 1970-71, farmers owning below 5 acres appear to have enjoyed 50-60% higher incomes than tenants, and about double the income of landless farm laborers (Naseem, 1977, p. 49).

- Adams, D., D. Graham and J. von Pischke (eds.), Limitations of Cheap Credit in Promoting Rural Development, Economic Development Institute, CN-83 (revised January 1983), World Bank, Washington, D.C., January 1983.
- Alberts, T., Agrarian Reform and Rural Poverty: A Case Study of Peru, Lund Economic Studies, Policy Institute, University of Lund, 1981.
- Anon., Rampura (Mehsana Dist., Gujarat) (surveyed - hereafter s. - Aug.-Dec. 1962; reference (crop) year - hereafter r. - 1961-2), Indian Village Studies (hereafter IVS) No. 15, Agro-economic Centre for Gujarat and Rajasthan at Sardar Patel University (hereafter AERC), Vallabh Vidyanagar, 1970.
- Anon., Harsawa (Sikar District, Rajasthan): A Village in a Semi-arid Region (1962-3), IVS no. 16, AERC Vallabh Vidyanagar, 1970.
- ARIS: Additional Rural Income Survey 1970-1, National Council for Applied Econ. Research, New Delhi, mimeo, n.d.
- Bambal, P., Kothiakad (Kaira Dist., Gujarat): Socio-economic Study of a Ravine Affected Village (s. Nov. 1963-Feb. 1964; r. 1962-3), IVS No. 6, AERC Vallabh Vidyanagar, 1966.
- Bardhan, P. 'Terms and conditions of sharecropping contracts: an analysis of village survey data in India', in Land, Labor and Rural Poverty, mimeo, University of California, 1982.
- \_\_\_\_\_, Land, Labor and Rural Poverty, Oxford University Press, Delhi, 1984.
- \_\_\_\_\_, and T. N. Srinivasan (eds.), Poverty in South Asia, Columbia U.P., 1984.
- \_\_\_\_\_, and A. Rudra, 'Interlinkage of land labor and credit relations: an analysis of village survey data in East India', EPW, 13, XIII, Annual Nos.6 & 7, Feb. 1978.
- Barnum, H., and L. Squire, A Model of an Agricultural Household: Theory and Evidence, Occasional Paper no. 27, World Bank, Washington, D.C., 1979.
- Bell, C., 'Alternative theories of sharecropping: some tests using evidence from N. E. India' JDS, 13, 4, July 1977.
- \_\_\_\_\_, and C. Sussangkarn, Rationing and Adjustment in the Market for Tenancies: The Behavior of Cultivating Households in Thanjavur District, RPO 671-84, Working Paper No. 3, World Bank, October 1983.
- Berry, A. and W. Cline, Agrarian Structure and Productivity in Developing Countries, Johns Hopkins, Baltimore, 1979.
- Bhaduri, A. 'Agricultural backwardness and semi-feudalism', Economic Journal, 83, March 1973.
- Bhalla, S., 'Tenancy today', EPW, XVII, 19-21, May 1983.

- Bhalla, G. and Y. Alagh, Performance of Indian Agriculture: A Districtwise Study, Sterling, New Delhi, 1979.
- \_\_\_\_\_, and G. Chadha, 'Green revolution and the small peasant: a study of income distribution in Punjab agriculture', I, EPW, XVII, 20, May 15, 1982, and II, EPW, XVII, 21, May 22, 1982.
- Bhat, M., Naurangdeshar (Sriganganagar Dist.) - a Rajasthan Canal Village, IVS No. 4 (r. 1961-2; s. 1962), AERC Vallabh Vidyanagar, 1964.
- Binswanger, H., 'Attitudes towards risk: experimental measurement in rural India', American Journal of Agricultural Economics, 3, Aug. 1980.
- \_\_\_\_\_, et al. (eds), Rural Household Studies in Asia, Singapore University Press and Agricultural Development Council, Singapore, 1980.
- Bliss, C., 'Risk-bearing in Indian agriculture', Agricultural Development Council Seminar, CIMMYT, El Baton, Mexico, 1976.
- Brambhatt, D., Naurangdeshar (Sriganganagar Dist., Rajasthan): Impact of Irrigation on a Rajasthan Canal Village (s. 1969; r. 1968-9), Resurveys of Indian Villages No. 2, AERC Vallabh Vidyanagar, 1974.
- Cain, M., 'Landlessness in India and Bangladesh: a critical review of national data sources', Economic Development and Cultural Change, 32, 1, October 1983.
- \_\_\_\_\_, 'Risk and insurance: perspectives on fertility and agrarian change in India and Bangladesh', Population and Development Review, 7, 3, Sept. 1983.
- Cernea, M. 'The large-scale formal organization and the family primary group', Journal of Marriage and the Family, Nov. 1975.
- Chenery, H. et al., Redistribution with Growth, for World Bank and the Institute of Development Studies, University of Sussex, Oxford University Press, 1975.
- Cheung, S., Theory of Share Tenancy, Chicago, 1969.
- Choudhary, K. and M. Bapat, Impact of Famine Relief Measures in Gujarat and Rajasthan, AERC Vallabh Vidyanagar, 1975.
- Chuta, E. and C. Liedholm, Rural Non-farm Employment: A Review of the State of the Art, Rural Development Paper No. 4, Michigan State University, 1979.
- Collier, P., 'Oil and inequality in rural Nigeria', in Ghai and Radwan (eds.), 1983.
- Desai, B., Moti Khadol (Kaira Dist., Gujarat): A Charotar Village (s. Nov. 1963-Feb. 1964; r. 1962-3), IVS No. 10, AERC Vallabh Vidyanagar, 1967.

- Desai, G., G. Singh, and D. Sah, Impact of Scarcity on Farm Economy and Significance of Relief Operations: a Micro-study in Gujarat, Monograph No. 84, Center for Management in Agriculture, Indian Institute of Management, Ahmedabad, 1979.
- Desai, M., Studies in Rural Problems: 5 (Rajasthan): Hasteda (s. Oct. 1961-Mar. 1962; r. 1960-1), AERC Vallabh Vidyanagar, 1966.
- Eckholm, E. , Losing Ground; Environmental Stress and World Food Prospects, Pergamon Press, New York, 1976.
- Esman, M., Landlessness and Near-landlessness in Developing Countries, Rural Development Ctee., Cornell University, September 1978.
- FAO, Communal Tenure Systems, FAO Agricultural Studies, No. 17, 1953.
- Ghai, D., and S. Radhwan, Agrarian Policies and Rural Poverty in Africa, ILO, Geneva, 1983.
- Goddard, A., 'Land tenure, land holding and agricultural development in the Central Sokoto Close-settled Land Zone', Savanna, 1, 1, 1972.
- Griffin, K., Land Concentration and Rural Poverty, Routledge, 1976.
- Harik, I., Distribution of Land, Employment and Income in Rural Egypt, LNLNo. 5, Cornell University Rural Development Ctee., 1979.
- Hart, G., 'Patterns of household labor allocation in a Javanese village', in Binswanger et al. (1980).
- Herring, R., Land to the Tiller: The Political Economy of Agrarian Reform in South Asia, Yale, 1983.
- Hill, P., Dry Grain Farming Systems, Cambridge, 1982.
- Hirashima, S., 'Zamindars and Kammees in the Punjab', in Hirashima (ed.), 1977a.
- \_\_\_\_\_, (ed.), Hired Labor in Rural Asia, Inst. of Developing Economies, Tokyo, 1977a.
- Hitchcock, R., Kalahari Cattle Posts, Government of Botswana, 1979.
- ILO, Poverty and Landlessness in Rural Asia, Geneva, 1977.
- \_\_\_\_\_, Matching Employment Opportunities and Expectations ('Ceylon Report'), Geneva, 1971.
- Jamison, D. and L. Lau, Income, Education and Farm Efficiency, Johns Hopkins, 1982.
- Jodha, N., Agricultural Tenancy in Semi-arid Tropical Villages in India, Progress Report (Economics Program) 17, ICRISAT, Patancheru, October 1980.

- \_\_\_\_\_, 'Decline of common property resources and its implications for livestock farming in arid regions of Western Rajasthan: micro-level evidence', mimeo (draft), ICRISAT, 1983.
- \_\_\_\_\_, 'Famine and famine policies: some empirical evidence', EPW, 10, 41, Oct. 11, 1975.
- \_\_\_\_\_, 'Market forces and erosion of common property resources', mimeo, Workshop on Agricultural Markets, ICRISAT, October 1983a.
- Khan, A. R., 'The distribution of income in rural China' in ILO, 1977.
- \_\_\_\_\_, 'Poverty and inequality in rural Bangladesh', in ILO, 1977a.
- \_\_\_\_\_, and E. Lee, Agrarian Policies and Institutions in China after Mao, ILO (ARTEP), Bangkok, 1983.
- \_\_\_\_\_, R. Islam and M. Huq, Employment, Income and the Mobilization of Local Resources: a Study of Two Bangladesh Villages, ILO/ARTEP, Bangkok, 1981.
- King, R., Land Reform: A World Survey, Bell, 1977.
- Kutcher, G., and P. Scandizzo, The Agricultural Economy of Northeast Brazil, Johns Hopkins, 1981.
- Labor Bureau (Ministry of Labor, Government of India), Rural Labor Enquiry 1974-75, Chandigarh, 1978.
- Laxminarayan, H. and S. Tyagi, Changes in Agrarian Structure in India, Agricole (New Delhi), 1982.
- Ledesma, A., Landless Workers and Rice Farmers: Peasant Sub-classes under Agrarian Reform in Two Philippine Villages, International Rice Research Institute, Los Banos, 1982.
- Lipton, M., Poverty, Undernutrition, and Hunger, World Bank Staff Working Paper No. 597, World Bank, Washington, D.C., August 1983.
- \_\_\_\_\_, Labor and Poverty, World Bank Staff Working Paper No. 616, World Bank, Washington, D.C., October 1983a.
- \_\_\_\_\_, Demography and Poverty, World Bank Staff Working Paper No. 623, World Bank, Washington, D.C., November 1983b.
- \_\_\_\_\_, Botswana: Employment and Labor Use, Ministry of Finance and Development Planning, Gaborone, 1979.
- \_\_\_\_\_, African Agriculture in the Light of Asian Experience: The Case of Botswana, Guest Lecture, Institute of Development Mangement, Gaborone, 1979a.
- Lluch, C. and D. Mazumdar, Wages and Employment in Indonesia, mimeo, World Bank, 1980.

- Meyer, R. and A. Alicbusan, 'Farm household heterogeneity and rural financial markets: evidence from Thailand', in Adams et al. (eds.), 1983.
- Morales Nieto, J., Agrarstruktur and Agrarreform in Kolombien, D.Sc. (Econ.), Muenster University, 1978.
- Mundle, S., Land, Labor and the Level of Living in Rural Punjab, mimeo, ILO, Geneva, June 1982.
- Naseem, S., 'Rural poverty and landlessness in Pakistan', in ILO, 1977.
- Nigerian Economic Society, Poverty in Nigeria, Proceedings of 1975 Annual Conference, Ibadan University, n.d.
- Olayide, S., and S. Essang, 'Aspects of Rural Poverty in Nigeria', in Nigerian Economic Society, n.d.
- Pal, R. and J. Quizon, Factor Costs, Income, and Supply Shares in Indian Agriculture, Report No. ARU-16, OPS-ARD, World Bank, Washington, D.C., December 1983.
- Palmer, I., 'Rural poverty in Indonesia with special reference to Java', in ILO, 1977.
- Pant, C., 'Tenancy in semi-arid tropical villages of South India', ICRISAT Economics Program, Progress Report 20, Patancheru, May 1981.
- Parthasarathy, G., 'Employment, wages and poverty of hired labor within Indian agriculture', in Hirashima, 1977.
- \_\_\_\_\_, and G. Rama Rao, 'Employment and unemployment among rural labor households,' EPW, VII, 52, December 29, 1973.
- Patel, V., Jambua (Panchmahals Dist. Gujarat): Change in the Socio-Economic Life of a Tribal Village (r. 1974-5; s. 1975), Resurveys of Indian Villages no. 5, AERC Vallabh Vidyanagar, 1980.
- Pathak, R., K. Ganpathy and Y. Sarma, 'Shifts in pattern of asset-holdings of rural households, 1961-62 to 1971-72', EPW, XII, 12, March 19, 1977.
- Penny, D. and M. Singarimbun, Population and Poverty in Rural Java, Cornell International Agricultural Development mimeo No. 41, Cornell University (Department of Agricultural Economics), Ithaca, May 1973.
- Phongpaichit, P., Employment, Income and the Mobilization of Resources in Two Thai Villages, ILO (ARTEP), Bangkok, December 1982.
- Priebprom, S., Employment and Income from Farming, Non-farm Enterprises and Off-farm Work in Khon Koen, Thailand, Ph.D., Michigan State University, 1982.
- Rahman, M. (ed.), Agrarian Egalitarianism: Land Tenures and Land Reforms in South Asia, Iowa State University, Kendall/Hunt, Dubuque, 1981.

- Ray, D., 'The small lessor and the big lessee: evidence from W. Bengal', EPW, XIII, 51 and 52, December 23-30, 1978.
- Rosenberg, J. and D., Landless Peasants and Rural Poverty in Indonesia and the Philippines, LNL No. 3, Cornell U. Rural Development Ctee., 1980.
- Roy, P., 'Transition in agriculture: empirical indicators and results' (evidence from Punjab, India), Journal of Peasant Studies, 8,2, 1981.
- Rudra, A. and A. Sen, 'Farm size and labor use: analysis and policy', EPW, XV, 6-7, February 1980.
- Ryan, J., P. Ray, and M. Rathore, 'Factor proportions, factor market access and the development and transfer of technology', ICRISAT Journal Article No. 48, ICRISAT, October 1978.
- Sanusi, N., Rural Household Income and Expenditure in Village B, West Java, Agric. Mimeo no.92, Department of Ag. Economics, Cornell U., Ithaca, January 1982.
- Sanyal, S., 'Trends in Landholdings in Rural India', in Bardhan and Srinivasan (eds.), 1984.
- Sarvekshana, Volume VI, Numbers 1-2, July-October 1982, National Sample Survey, Government of India.
- Saxena, S. and A. Charan, Dingri (Udaipur Dist., Rajasthan): A Village Near a New Rail Link (s. Jul.-Oct. 1964; r. 1963-4), IVS no. 18, AERC Vallabh Vidyanagar, 1973.
- Sen, A. K., 'Development: which way now?', Economic Journal, 93, December 1983.
- \_\_\_\_\_, Poverty and Famines, Oxford University Press, 1981.
- \_\_\_\_\_, 'An aspect of Indian agriculture', EPW, Annual No., February 1962.
- Sengupta, S. and P. Joshi, 'A note on the demarcation of poverty line based on NSS 27th round data', Sarvekshana, 3, 1, July 1979.
- Shivakumar, S., 'Aspects of agrarian economy in Tamil Nadu: a study of two villages I: class structure', EPW, XIII, 19, May 13, 1978.
- Simmons, E., Rural Household Expenditures in Three Villages of Zaria Province, Samaru Miscellaneous Paper No. 45, Ahmadu Bello University, 1976.
- Singh, B., Poverty Characteristics in Ten Gujarat Villages, mimeo, Institute of Development Studies, Brighton, 1980.
- \_\_\_\_\_, Agrarian Structure, Economic Change and Poverty: The Experience of Central Gujarat, Ph.D., Sussex University, Brighton, 1981.

- Singh, I., The Landless Poor in South Asia, mimeo (delivered to 18th conference of International Association of Agricultural Economists, Djakarta, August-September, 1982), World Bank, Washington, D.C., July 1982.
- Stavenhagen, R. (ed.), Agrarian Problems and Peasant Movements in Latin America, Doubleday, New York, 1970.
- Sundaram, K. and S. Tendulkar, Towards an Explanation of Interregional Variations in Poverty and Unemployment in Rural India, Working Paper No. 237 (revised), Delhi School of Economics, May 1983.
- Tai, H., Land Reform and Politics: A Comparative Analysis, University of California, 1974.
- Visaria, P., Size of Land Holding, Living Standards and Employment in Rural Western India, 1972-73, ESCAP-IBRD Project on Asian Income Distribution Data (Working Paper No. 3), mimeo, World Bank, Washington, D.C., October 1978.
- Vyas, V., 'Presidential address: Some aspects of structural change in Indian agriculture', Indian Journal of Agricultural Economics, 34, 1, January-March 1979.
- \_\_\_\_\_, 'Structural change in agriculture and the small farm sector', EPW, 11, 1-2, January 10, 1976.
- Walker, T. and N. Jodha, Efficiency of Risk Management by Small Farmers and Implications for Crop Insurance, Economic Program Progress Report No. 45, ICRISAT, November 1982.
- Watanabe, B. and E. Mueller, 'A Poverty Profile for Rural Botswana', mimeo, 1982.
- White, G. and P. Nolan, 'Urban bias, rural bias or State bias? Urban-Rural relations in post-revolutionary China', Journal of Development Studies, 20, 2, April 1984.
- World Bank, World Development Report 1980, Washington, D.C., 1980.



## **World Bank Publications of Related Interest**

### **Adoption of Agricultural Innovations in Developing Countries: A Survey** Gershon Feder, Richard Just, and David Silberman

*Staff Working Paper No. 542. 1982. 65  
pages.*

*ISBN 0-8213-0103-9. Stock No. WP 0542.  
\$3.*

### **Agrarian Reform as Unfinished Business—the Selected Papers of Wolf Ladejnsky**

Louis J. Walinsky, editor

Studies in agrarian policy and land reform spanning four decades, grouped chronologically according to Ladejnsky's years in Washington, Tokyo, and Vietnam and while at the Ford Foundation and the World Bank. Oxford University Press, 1977. 614 pages (including appendixes, index).

*LC 77-24254. ISBN 0-19-920095-5, Stock  
No. OX 920095, \$32.50 hardcover; ISBN  
0-19-920098-X, Stock No. OX 920098,  
\$14.95 paperback.*

### **Agrarian Reforms in Developing Rural Economies Characterized by Interlinked Credit and Tenancy Markets**

Avishay Braverman and T.N.  
Srinivasan

*Staff Working Paper No. 433. 1980. 32  
pages (including references).*

*Stock No. WP-0433. \$3.*

### **Agricultural Credit**

Outlines agricultural credit practices and problems, programs, and policies in developing countries and discusses their implications for World Bank operations.

*A World Bank Paper. 1975. 85 pages (in-  
cluding 14 annex tables).*

*Stock No. BK 9039 (English), BK 9052  
(French), BK 9053 (Spanish). \$5 paper-  
back.*

### **The Agricultural Development Experience of Algeria, Morocco, and Tunisia: A Comparison of Strategies for Growth**

Kevin M. Cleaver

Compares agricultural experience of Algeria, Morocco, and Tunisia. Provides insights into the importance of food and agriculture for development, and determinants of agricultural growth.

*Staff Working Paper No. 552. 1983. 55  
pages.*

*ISBN 0-8213-0120-9 Stock No. WP 0552.  
\$3.*

### **The Agricultural Economy of Northeast Brazil**

Gary P. Kutcher and Pasquale L.  
Scandizzo

This study, based on an agricultural survey of 8,000 farms, assesses the extent and root causes of pervasive rural poverty in northeast Brazil. The authors review a number of policy and project options; they conclude that courageous land reform is the only effective means of dealing with the problem.

*The Johns Hopkins University Press, 1982.  
288 pages.*

*LC 81-47615. ISBN 0-8018-2581-4, Stock  
No. JH 2581. \$25.00 hardcover.*

---

#### **NEW**

---

### **Agricultural Extension by Training and Visit: The Asian Experience**

Edited by Michael M. Cernea,  
John K. Coulter, and John F.A.  
Russell

Captures nearly ten years of experience with the Training and Visit Extension System. Addresses five issues: farmer participation, the research-extension linkage, training, system management, and monitoring and evaluation. Within this framework, extension system managers and evaluators from six Asian countries and six discussants present their experience and analyses. Notes the World Bank's strong commitment to agricultural development in its member countries and to helping least advantaged farmers to improve

their productivity. Valuable to policy-makers, project designers, rural sociologists, extension workers, and other agricultural researchers.

*1984. 176 pages.*

*ISBN 0-8213-0301-5. Stock No. BK 0301.  
\$13.50.*

---

#### **NEW**

---

### **Agricultural Extension: The Training and Visit System**

Daniel Benor, James Q. Harrison,  
and Michael Baxter

Contains guidelines for reform of agricultural extension services along the lines of the training and visit system. The central objective—making the most efficient use of resources available to governments and farmers—is achieved through encouraging and facilitating feedback from farmers to research workers through extension personnel who visit and advise farmers on a regular, fixed schedule, thus helping research to solve actual production constraints faced by the farmer.

Explains the complex relationships in training and visit extension and draws attention to the range of considerations that are important to implementing the system.

*1984. 95 pages.*

*ISBN 0-8213-0140-3. Stock No. BK 0140.  
\$5.*

### **Agricultural Land Settlement**

Theodore J. Goering, coordinating  
author

Examines selected issues related to the World Bank's lending for land settlement and gives estimates of the global rate of settlement and the world's ultimate potentially arable land.

*A World Bank Issues Paper. 1978. 73  
pages (including 4 annexes). English,  
French, and Spanish.*

*Stock Nos. BK 9054 (English), BK 9055  
(French), BK 9056 (Spanish). \$5 paper-  
back.*

### **Agricultural Price Management in Egypt**

William Cuddihy

*Staff Working Paper No. 388. 1980. 174  
pages (including annex, bibliography).*

*Stock No. WP-0388. \$5.*

## **Agricultural Price Policies and the Developing Countries**

George Tolley, Vinod Thomas, and Chung Ming Wong

This book first considers price policies in Korea, Bangladesh, Thailand, and Venezuela, bringing out the consequences for government cost and revenue, farm income, and producer and consumer welfare. Other effects, including those on agricultural diversification, inflation, economic growth, and the balance of payments are also discussed. The second part of the book provides a methodology for estimating these effects in any country. Operational tools for measuring the effects on producers, consumers, and government are developed and applied.

*The Johns Hopkins University Press. 1982. 256 pages.*

LC 81-15585. ISBN 0-8018-2704-3, Stock No. JH 2704, \$25 hardcover; NEW: ISBN 0-8018-3124-5, Stock No. JH 3124, \$9.95 paperback.

---

### NEW

---

## **Agricultural Prices in China**

Nicholas R. Lardy

Analyzes recent adjustments to China's agricultural pricing systems and its effects on urban consumers and overall production patterns. Defines price ratios from key inputs and outputs and examines price/cost relations in view of the institutional setting for price policy.

*Staff Working Paper No. 606. 1983. 84 pages.*

ISBN 0-8213-0216-7. Stock No. WP 0606. \$3.

## **Agricultural Research**

Points out that developing countries must invest more in agricultural research if they are to meet the needs of their growing populations. Notes that studies in Brazil, India, Japan, Mexico, and the United States show that agricultural research yields a rate of return that is more than two to three times greater than returns from most alternative investments and cites some of the successes of the high-yielding varieties of rice and wheat that were developed in the mid-1960s. Discusses the World Bank's plans to expand its lending for agricultural research and extension, particularly for the production of food and other commodities that are of importance to low-income consumers, small farmers, and resource poor areas.

*Sector Policy Paper. 1981. 110 pages (including annexes). English, French, and Spanish.*

Stock Nos. BK 9074 (English), BK 0160 (French), BK 0161 (Spanish). \$5 paperback.

## **Agroindustrial Project Analysis**

James E. Austin

Provides and illustrates a framework for analyzing and designing agro-industrial projects.

EDI Series in Economic Development. The Johns Hopkins University Press, 1981. 2nd printing, 1983. 224 pages (including appendixes, bibliography, and index).

LC 80-550. ISBN 0-8018-2412-5, Stock No. JH 2412, \$16.50 hardcover; ISBN 0-8018-2413-3, Stock No. JH 2413, \$7.50 paperback.

*French: L'Analyse des projets agroindustriels. Economica, 1982. ISBN 1-7178-0480-3, Stock No. IB 0537. \$7.50 paperback.*

*Spanish: Analisis de proyectos agroindustriales. Editorial Tecnos, 1981. ISBN 84-309-0882-X, Stock No. IB 0520, \$7.50 paperback.*

---

### NEW

---

## **Alternative Agricultural Pricing Policies in the Republic of Korea: Their Implications for Government Deficits, Income Distribution, and Balance of Payments**

Avishay Braverman, Choong Yong Ahn, Jeffrey S. Hammer

Develops a two-sector multimarket model to evaluate agricultural pricing policies, replacing insufficient standard operational methods. Measures the impact of alternative pricing policies on production and consumption of rice and barley, real income distribution, import levels of rice, self-sufficiency in rice, and public budget. Provides a valuable synthesis of the work that has been done to date on agricultural household models. Helps economists evaluate the impact of alternative pricing policies aimed at reducing deficits. Based on the experience of the Grain Management Fund and the Fertilizer Fund in Korea.

*Staff Working Paper No. 621. 1983. 174 pages.*

ISBN 0-8213-0275-2. Stock No. WP 0621. \$5.

## **Argentina: Country Case Study of Agricultural Prices, Taxes, and Subsidies**

Lucio G. Reza

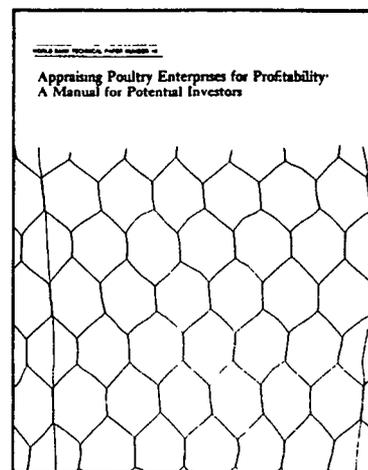
*Staff Working Paper No. 386. 1980. 72 pages (including 3 annexes).*

Stock No. WP-0386. \$3.

---

### NEW

---



## **Appraising Poultry Enterprises for Profitability: A Manual for Potential Investors**

International Finance Corp.

Decisionmaking tool for entrepreneurs and project managers considering investments in integrated poultry projects. Use this guide to conduct on-site investigation of proposed project. Figure production costs and determine fixed asset and working capital for broiler operations. Analyze market and accurately forecast market prices. This comprehensive guide tells how to manage integrated broiler operations, gives specifications for broiler and breeder houses and summarizes production costs.

*Technical Paper No. 10. 1983. 110 pages. ISBN 0-8213-0165-9. Stock No. BK 0165. \$5.*

## **The Book of CHAC: Programming Studies for Mexican Agricultural Policy**

Edited by Roger D. Norton and Leopoldo Solis M.

The principal tool of analysis is the sector model CHAC, named after the Mayan rain god. This model can be used throughout the sector to cover short-cycle crops, their inputs, and their markets. It can also be broken down into submodels for particular localities if more detailed analysis is required. The model helps planners weigh the costs among policy goals, which can vary from region to region. This volume reports the experience of using the CHAC model and also presents purely methodological material.

*The Johns Hopkins University Press, 1983. 624 pages (including maps, bibliographies, index).*

LC 80-29366. ISBN 0-8018-2585-7, Stock No. JH 2585. \$35 hardcover.

**Building National Capacity to Develop Water Users' Associations: Experience from the Philippines**

Frances F. Kortzen

Staff Working Paper No. 528. 1982. v + 69 pages (including references)

ISBN 0-8213-0051-2 Stock No WP 0528. \$3

**Bureaucratic Politics and Incentives in the Management of Rural Development**

Richard Heaver

Analyzes management problems in implementing rural development from a bureaucratic political standpoint. Emphasizes the need to take account of informal interests in managing programs. Suggests possible methods for assessing incentives.

Staff Working Paper No. 537. 1983 74 pages.

ISBN 0-8213-0084-9. Stock No. WP 0537. \$3.

---

**NEW**

---

**The Common Agricultural Policy of the European Community: A Blessing or a Curse for Developing Countries?**

Ulrich Koester and Malcolm D. Bale

Examines the importance of the European Community (EC) in global agricultural trade. Points out that the EC is the leading importer of agricultural goods and is the dominant exporter of a number of agricultural products. Emphasizes that policymakers in developing countries must understand the implications of the EC's common Agricultural Policy. Spells out how this policy operates and categorizes important commodities.

Staff Working Paper No. 630. 1984. 64 pages

Stock No. WP 0630. \$3.

**The Design of Organizations for Rural Development Projects: A Progress Report**

William E. Smith, Francis J. Lethem, and Ben A. Thoolen

Staff Working Paper No. 375. 1980. 48 pages. English and French.

Stock Nos. WP 0375 (English), BK 9241 (French). \$3.

*Prices subject to change without notice and may vary by country.*

**The Design of Rural Development: Lessons from Africa**

Uma Lele

Analyzes new ways of designing rural development projects to reach large numbers of low-income subsistence populations. The third paperback printing contains a new chapter by the author updating her findings.

The Johns Hopkins University Press, 1975; 3rd printing, 1979. 260 pages (including glossary, appendix, maps, bibliography, index).

ISBN 0-8018-1769-2, Stock No. JH 1769, \$9.95 paperback.

French: *Le developpement rural: l'experience Africaine. Economica*, 1977. ISBN 2-7178-0006-9, Stock No. IB 0545, \$9.95 paperback.

**Economic Analysis of Agricultural Projects**  
Second edition, completely revised and expanded  
J. Price Gittinger

Sets out a careful and practical methodology for analyzing agricultural development projects and for using these analyses to compare proposed investments. It covers what constitutes a "project," what must be considered to identify possible agricultural projects, the life cycle of a project, the strengths and pitfalls of project analysis, and the calculations required to obtain financial and economic project accounts.

The methodology reflects the best of contemporary practice in government agencies and international development institutions concerned with investing in agriculture and is accessible to a broad readership of agricultural planners, engineers, and analysts.

This revision adds a wealth of recent project data; expanded treatment of farm budgets and the efficiency prices to be used to calculate the effects of an investment on national income; a glossary of technical terms; expanded appendixes on preparing an agricultural project report and using discounting tables; and an expanded, completely annotated bibliography.

EDI Series in Economic Development.

The Johns Hopkins University press. July 1982. 2nd printing, March 1984. 528 pages (including appendixes and glossary/index).

LC 82-15262. ISBN 0-8018-2912-7, Stock No. JH 2912, \$37.50 hardcover; ISBN 0-8018-2913-5, Stock No. JH 2913, \$13.50 paperback.

Spanish: *Analisis economico de proyectos agricolas*. Editorial Tecnos, S.A. ISBN 84-309-0991-5. \$13.50.

**Economic Aspects and Policy Issues in Groundwater Development**

Ian Carruthers and Roy Stoner

Staff Working Paper No. 496. 1981. 110 pages (including annex, bibliography).

Stock No. WP-0496. \$5.

**Economic Return to Investment in Irrigation in India**

Leslie A. Abbie, James Q. Harrison, and John W. Wall

Staff Working Paper No. 536. 1982. 52 pages.

ISBN 0-8213-0083-0. Stock No. WP 0536. \$3.

**Farm Budgets: From Farm Income Analysis to Agricultural Project Analysis**  
Maxwell L. Brown

Clarifies the relation between simple farm income analysis and the broader field of agricultural project analysis and emphasizes the more practical aspects of project preparation. Gives guidance to those responsible for planning in agriculture.

EDI Series in Economic Development. The Johns Hopkins University Press, 1980. 154 pages.

LC 79-3704. ISBN 0-8018-2386-2, Stock No. JH 2386, \$15 hardcover; ISBN 0-8018-2387-0, Stock No. JH 2387, \$6.50 paperback.

Spanish: *Presupuestos de fincas* Editorial Tecnos, 1982. ISBN 84-309-0886-2, Stock No. IB 0522, \$6.50 paperback.

**Fishery**

Highlights the importance of fisheries to the economies of developing countries and recommends that the World Bank provide assistance to those countries that have the fishery resources and are willing to develop them further.

Sector Policy Paper. 1982

ISBN 0-8213-0138-1. Stock No. BK 0138, \$5 paperback.

**Forestry**

Graham Donaldson, coordinating author

Examines the significance of forests in economic development and concludes that the World Bank should greatly increase its role in forestry development, both as a lender and adviser to governments.

Sector Policy Paper. 1978. 63 pages (including 7 annexes). English, French, and Spanish.

Stock Nos. BK 9063 (English), BK 9064 (French), BK 9065 (Spanish). \$5 paperback.

---

**NEW**

---

**Forestry Terms—Terminologie forestiere**

English—French; Français—Anglais.

Presents terminology related to forestry development and erosion control in arid and semiarid lands. Since fuel-wood problems and desertification have become serious, particularly in Western Africa, the World Bank has become increasingly involved in wood-based energy and erosion-control and in forest-management projects. Assists translators and researchers who work in this field.

*A World Bank Glossary—Glossaire de la Banque mondiale*

1984. 48 pages.

ISBN 0-8213-0175-6 Stock No. BK 0175. \$5.

**Improving Irrigated Agriculture: Institutional Reform and the Small Farmer**  
Daniel W. Bromley

*Staff Working Paper No. 531. 1982. 96 pages.*

ISBN 0-8213-0064-4. Stock No. WP 0531. \$3.

**India: Demand and Supply Prospects for Agriculture**

James Q. Harrison, Jon A. Hitchings, and John W. Wall

*Staff Working Paper No. 500. 1981. 133 pages (including 5 appendixes, references, annex).*

Stock No. WP-0500. \$5.

**Irrigation Management in China: A Review of the Literature**

James E. Nickum

Analyzes irrigation management in the People's Republic of China. Major topics covered are the institutional environment, the organizational structure, water fees and funding, and water allocation. The report is based on Chinese-language materials published in China and now available in the United States.

*Staff Working Paper No. 545. 1983. 106 pages.*

ISBN 0-8213-0110-1. Stock No. WP 0545. \$5.

**Land Reform**

Examines the characteristics of land reform, its implications for the economies of developing countries, and the

major policy options open to the World Bank in this field.

*A World Bank Paper. 1975. 73 pages (including 2 annexes).*

Stock No. BK 9042. \$5 paperback.

**Land Tenure Systems and Social Implications of Forestry Development Programs**

Michael M. Cernea

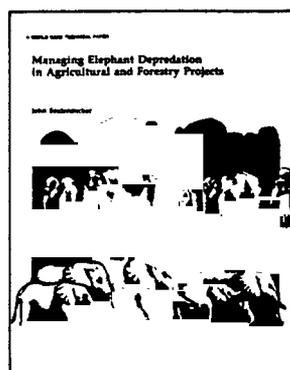
*Staff Working Paper No. 452. 1981. 35 pages (including references, bibliography).*

Stock No. WP-0452. \$3.

---

**NEW**

---

**Managing Elephant Depredation in Agricultural and Forestry Projects**

John Seidensticker

Outlines procedures for managing elephants in and around project areas as part of the project design. Helps project designers plan activities that will protect wildlife and prevent financial loss from damage by animals. Illustrates methods used to investigate elephant behavior and ecology. Notes that careful scheduling of project activities is required to ensure that elephants are not isolated in production areas.

*Technical Paper No. 16. 1984. 50 pages.*

ISBN 0-8213-0297-3.

Stock No. BK 0297. \$3.

**Managing Information for Rural Development: Lessons from Eastern Africa**

Guido Deboeck and Bill Kinsey

*Staff Working Paper No. 379. 1980. vii + 70 pages (including 5 annexes, index).*

Stock No. WP-0379. \$3.

**Measuring Project Impact: Monitoring and Evaluation in the PIDER Rural Development Project—Mexico**

Michael M. Cernea

*Staff Working Paper No. 332. 1979. 137*

*pages (including 3 annexes, appendix, map).*

Stock No. WP-0332. \$5.

**Monitoring and Evaluation of Agriculture and Rural Development Projects**

Dennis J. Casley and Denis A. Lury

This book provides a how-to tool for the design and implementation of monitoring and evaluation systems in rural development projects. Because rural development projects are complex, they seek to benefit large numbers of people in remote rural areas, and they involve a variety of investments. The need for monitoring and evaluating them during implementation has been accepted in principle, but effective systems have not heretofore been formulated. The concepts of monitoring and evaluation are differentiated and issues that need to be considered in designing systems to monitor and evaluate specific projects are outlined, emphasizing the timeliness of the monitoring functions for effective management. Elaborates on such technical issues as selection of indicators, selection of survey methodology data analysis, and presentation. It is directed primarily to those working with specific projects and will be useful to project appraisal teams, to designers of monitoring and evaluation systems, and to project staff who work with these systems.

*The Johns Hopkins University Press. 1982. 145 pages.*

LC 82-7126. ISBN 0-8018-2910-0, Stock No. JH 2910. \$8.50 paperback.

**Monitoring Rural Development in East Asia**

Guido Deboeck and Ronald Ng

*Staff Working Paper No. 439. 1980. 91 pages (including annexes).*

Stock No. WP-0439. \$3.

---

**NEW**

---

**Monitoring Systems and Irrigation Management: An Experience from the Philippines**

Agricultural economists, planners, and field workers will find this 1983 case study report a practical guide for designing efficient monitoring and evaluation systems for irrigation and similar projects. It illustrates the practical application of the principles covered in the 1982 publication *Monitoring and Evaluation of Agriculture and Rural Development Projects*. Highlights the problems as well as the successes.

1983. 162 pages.

ISBN 0-8213-0059-8. Stock No. BK 0059.\$5.

---

**NEW**

---

**Opportunities for Biological Control of Agricultural Pests in Developing Countries**

D. J. Greathead and J. K. Waage

Describes how to use living organisms as pest control agents, either alone or as one component of pest management. Biological control offers hope of long-term—permanent—results, causes no pollution, poses no risk to human health and is often cheaper than chemical controls. Gives methods and costs. Specifies controls for specific crops found in developing countries.

Technical Paper No. 11. 1983. 55 pages. ISBN 0-8213-0164-0. Stock No. BK 0164. \$3.

**Prices, Taxes, and Subsidies in Pakistan Agriculture, 1960-1976**

Carl Gotsch and Gilbert Brown

World Bank Staff Working Paper No. 387. 1980. 108 pages.

Stock No. WP-0387. \$5.

**Project Evaluation in Regional Perspective: A Study of an Irrigation Project in Northwest Malaysia**

Clive Bell, Peter Hazell, and Roger Slade

This innovative study develops quantitative methods for measuring the direct and indirect effects of agricultural projects on their surrounding regional and national economies. These methods are then applied to a study of the Muda irrigation project in northwest Malaysia. A linear programming model is used to analyze how a project changes the farm economy, and a social accounting matrix of the regional economy is then estimated. This provides the basis for a semi-input-output model, which is used to estimate the indirect effects of the project on its region. Thereafter, a similar methodology is used to estimate the project's effects on key national variables, thus

permitting a full social cost-benefit analysis of the project.

The Johns Hopkins University Press. 1982. 336 pages (including maps and index).

LC 81-48173. ISBN 0-8018-2802-3, Stock No. JH 2802, \$30 hardcover

**Rethinking Artisanal Fisheries Development: Western Concepts, Asian Experiences**

Staff Working Paper No. 423. 1980. 107 pages (including references).

Stock No. WP-0423. \$5

**Rural Development**

Discusses strategy designed to extend the benefits of development to the rural poor and outlines the World Bank's plans for increasing its assistance in this sector.

Sector Policy Paper, 1975, 89 pages (including 14 annexes).

Stock No. BK 9036 \$5 paperback.

---

**NEW**

---

**Rural Financial Markets in Developing Countries**

J. D. Von Pischke, Dale W. Adams, and Gordon Donald

Selected readings highlight facets of rural financial markets often neglected in discussions of agricultural credit in developing countries. Considers the performance of rural financial markets and ways to improve the quality and range of financial services for low-income farmers. Also reflects new thinking on the design, administration, evaluation, and policy framework of rural finance and credit programs in developing countries.

The Johns Hopkins University Press. 1983. 430 pages.

ISBN 0-8018-3074-5. Stock No. JH 3074. \$32.50 hardcover.

**Rural Poverty Unperceived: Problems and Remedies**

Robert Chambers

Staff Working Paper No. 400. 1980. 51 pages (including references)

Stock No. WP-0400 \$3

**Rural Projects through Urban Eyes: An Interpretation of the World Bank's New-Style Rural Development Projects**

Judith Tendler

World Bank Staff Working Paper No. 532. 1982. 100 pages.

ISBN 0-8213-0028-8. Stock No. WP 0532. \$3.

---

**NEW**

---

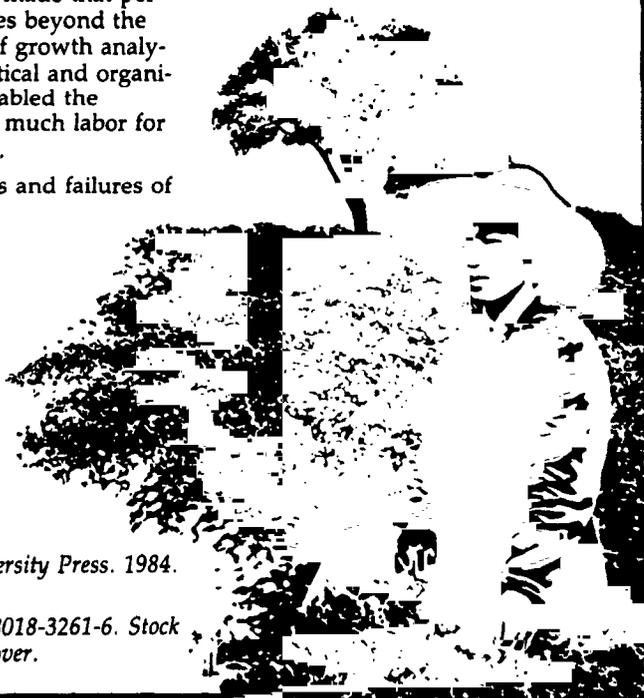
**Rural Development in China**

Dwight H. Perkins and Shahid Yusuf

Looks at China's rural development experience as a whole since 1949. Analyzes China's agricultural performance and traces it back to the technology and other sources that made that performance possible. Goes beyond the conventional sources of growth analysis to examine the political and organizational means that enabled the Chinese to mobilize so much labor for development purposes.

Describes the successes and failures of

China's rural development policy. Helps clarify both the strengths and weaknesses of a self-reliant strategy of rural development.



The Johns Hopkins University Press. 1984. 232 pages.

LC 83-049366. ISBN 0-8018-3261-6. Stock No. JH 3261. \$25 hardcover.

---

**NEW**

---

**Sheep and Goats in Developing Countries: Their Present and Potential Role**  
Winrock International Livestock Research and Training Center

Sheep and goats are viewed as an integral component of complex agricultural systems. This comprehensive analysis leads to recommendations on the need for a balanced production system approach for research, training, and development programs. Assesses the role of sheep and goats in food production systems by examining advantages and disadvantages, aid/donor support, constraints on contributions, and overcoming constraints. Emphasizes the need for a combination of support activities and marketing and pricing policies for small ruminants and their products. Reviews ongoing projects.

*Technical Paper No. 15* 1983. 109 pages.  
ISBN 0-8213-0272-8.  
Stock No. BK 0272. \$5.

**Sociocultural Aspects of Developing Small-Scale Fisheries: Delivering Services to the Poor**

Richard B. Pollnac

*Staff Working Paper No. 490*. 1981. 64 pages (including references).  
Stock No. WP-0490. \$3.

**Some Aspects of Wheat and Rice Price Policy in India**

Raj Krishna and G.S. Raychaudhuri

*Staff Working Paper No. 381*. 1980. 62 pages (including 2 appendixes, 6 tables, bibliography).  
Stock No. WP 0381. \$3.

---

**NEW**

---

**Sub-Saharan Agriculture: Synthesis and Trade Prospects**  
Shamsher Singh

Agricultural production, the single

most important determinant of overall economic growth, has been sluggish in Sub-Saharan African countries during the past two decades. This overview takes a three-pronged approach to understanding the problems of agricultural production in the 47 countries that make up the region. It outlines domestic and global constraints; summarizes price, trade, and consumption forecasts for major agricultural exports; and project trends.

*Staff Working Paper No. 608*. 1983. 172 pages (including more than 75 tables and charts).

ISBN 0-8213-0221-3. Stock No. WP 0608. \$5.

**A System of Monitoring and Evaluating Agricultural Extension Projects**

Michael M. Cernea and Benjamin J. Tepping

*Staff Working Paper No. 272*. 1977. 121 pages (including 9 annexes, bibliography).  
Stock No. WP-0272. \$5.

**Thailand: Case Study of Agricultural Input and Output Pricing**

Trent Bertrand

*Staff Working Paper No. 385*. 1980. 143 pages (including 2 appendixes).  
Stock No. WP-0385. \$5. NEW

**Traditional Land Tenure and Land Use Systems in the Design of Agricultural Projects**

Raymond Noronha and Francis J. Lethem

The feasibility of agricultural projects and their intended impact are often determined by traditional patterns of tenure and land use. This paper provides agricultural project designers with an analytical basis and rationale for examining systems and suggests how to use such information in designing projects.

*Staff Working Paper No. 561*. 1983. 54 pages.

ISBN 0-8213-0168-3. Stock No. WP 0561 (English) \$3.

ISBN 0-8213-0269-8. Stock No. BK 0269 (French) \$3.

---

**NEW**

---

**Training and Visit Extension**  
Daniel Benor and Michael Baxter

Contains a comprehensive explanation of the organization and operation of the training and visit system of agricultural extension. Emphasizes simplicity and decisiveness. Defines organization and mode of operation and allows continuous feedback from farmers to extension and research workers. This method has been adopted in some 40 countries in Asia, Africa, Europe, and Central and South America. Useful to extension staff at all levels, agricultural research personnel, trainers, and staff of agricultural organizations, as well as universities and training institutions involved in agricultural and rural development and public administration.

1984. 214 pages.

ISBN 0-8213-0121-7. Stock no BK 0121. \$15.

**Women and the Subsistence Sector: Economic Participation and Household****Decisionmaking In Nepal**

Meena Acharya and Lynn Bennet

Fascinating analysis of the complex social, demographic, and economic factors that affect women's decisionmaking role in the subsistence sector. Data collected from seven villages show women play a major role in agricultural production, both as laborers and managers. Bringing women into the market economy would make better use of local resources and improve their status and economic security in Nepal.

*Staff Working Paper No. 526*. 1983. 160 pages.

ISBN 0-8213-0024-5 Stock No WP 052 \$5.



# Distributors of World Bank Publications

**ARGENTINA**  
Carlos Hirsch, SRL  
Galena Guemes  
Florida 165, 4th Floor-Ofc. 453/465  
1333 Buenos Aires

**AUSTRALIA, PAPUA NEW  
GUINEA, FIJI, SOLOMON  
ISLANDS, AND VANUATU**  
Info-Line  
Overseas Document Delivery  
Box 306, GPO  
Sydney, NSW 2001  
Australia

**BAHRAIN**  
MEMRB  
P O Box 22103  
Manama Town 317

**BANGLADESH**  
Micro Industries Development  
Assistance Society  
G P O Box 800  
Dhaka

**BELGIUM**  
Publications des Nations Unies  
Av du Roi 202  
1060 Brussels

**BRAZIL**  
Publicacoes Tecnicas Internacionais  
Ltda.  
Rua Peixoto Gomide, 209  
01409 Sao Paulo, SP

**CANADA**  
Le Diffuseur  
C P 85, 1501 Ampere Street  
Boucherville, Quebec J4B 5E6

**CHILE**  
Editorial Renacimiento  
Miraflores 354  
Santiago

**COSTA RICA**  
Libreria Trejos  
Calle 11-13  
Av. Fernandez Guell  
San Jose

**CYPRUS**  
MEMRB  
P O Box 2098  
Nicosia

**DENMARK**  
Samfundslitteratur  
Rosenebns Alle 11  
DK-1970 Copenhagen V

**EGYPT, ARAB REPUBLIC OF**  
Al Ahran  
Galaa Street  
Cairo

**FINLAND**  
Akateeminen Kirjakauppa  
P O Box 128  
SF-00101  
Helsinki 10

**FRANCE**  
World Bank Publications  
66 Avenue d'Iena  
75116 Paris

**GERMANY, FEDERAL REPUBLIC  
OF**  
UNO-Verlag  
D-5300 Bonn 1  
Simrockstrasse 23

**GREECE**  
MEMRB  
24, Ippodamou Street  
Athens-11635

**HONG KONG, MACAU**  
Asia 2000 Ltd  
6 Fl., 146 Prince Edward Road, W,  
Kowloon  
Hong Kong

**INDIA**  
CBS Publishers' Distributors Ltd  
Post Box 7015  
New Delhi 110002

10 First Main Road  
Gandhi Nagar  
Bangalore 560009

Apeejay Chambers, P O Box 736  
3 Wallace Street  
Bombay 400001

8/1-B, Chowringhee Lane  
Calcutta 700016

7/188, 11(CA), Swarup Nagar  
Kamput 208002

Sivaganga Road  
Nungambakkam  
Madras 600034

**INDONESIA**  
Pt. Indira Limited  
Jl. Sam Ratulangi 37  
Jakarta Pusat  
PO Box 181

**IRELAND**  
TDC Publishers  
12 North Frederick Street  
Dublin 1

**ITALY**  
Licosa Commissionaria Sansoni SPA  
Via Lamarmora 45  
50121 Florence

**JAPAN**  
Eastern Book Service (EBS)  
37-3, Hongo 3-Chome, Bunkyo-ku  
113  
Tokyo

**JORDAN**  
MEMRB  
P O Box 3143  
Jabal  
Amman

**KENYA**  
Africa Book Service (E.A.) Ltd  
P O Box 45245  
Nairobi

**KOREA, REPUBLIC OF**  
Pan Korea Book Corporation  
P O Box 101, Kwangwhamun  
Seoul

**KUWAIT**  
MEMRB  
P O Box 5465  
Kuwait

**MALAYSIA**  
University of Malaya Cooperative  
Bookshop, Limited  
P O Box 1127, Jalan Pantai Baru  
Kuala Lumpur

**MEXICO**  
INFOTEC  
San Lorenzo 153-11, Col. del Valle  
Deleg. Benito Juarez  
03100 Mexico City

**MOROCCO**  
MEMRB  
2 Rue Molere Racine  
Casablanca

**THE NETHERLANDS**  
Medical Books Europe, BV (MBE)  
Noorderwal 38,  
7241 BL Lochem

**NIGERIA**  
University Press Limited  
Three Crowns Building Jericho  
Private Mail Bag 5095  
Ibadan

**NORWAY**  
Tanum Karl Johan, A.S.  
P O Box 1177  
Sentrum  
Oslo 1

**PAKISTAN**  
Urza Book Agency  
65, Shahrah-e-Quaid-e-Azam  
P O Box No. 729  
Lahore 3

**PANAMA**  
Ediciones Libreria Cultural  
Panamena, S A  
Av. 7, Espana 16  
Panama Zone 1

**PERU**  
Editorial Desarrollo SA  
Apartado 3824  
Lima

**PHILIPPINES**  
National Book Store  
701 Rizal Avenue  
Metro Manila

**PORTUGAL**  
Livraria Portugal  
Rua Do Carmo 70-74  
1200 Lisbon

**SAUDI ARABIA**  
Janr Book Store  
P O Box 3196  
Riyadh 11471

**SINGAPORE, TAIWAN, BURMA**  
Information Publications Private, Ltd.  
02-06 1st Fl., Pei-Fu Industrial Bldg.,  
24 New Industrial Road  
Singapore

**SPAIN**  
Mundi-Prems Libros, S A  
Castello 37  
28001 Madrid

**SRI LANKA AND THE MALDIVES**  
Lake House Bookshop  
P O Box 244  
100, Sir Chittampalam A. Gardiner  
Mawatha  
Colombo 2  
Sri Lanka

**SWEDEN**  
For single titles:  
ABCE Fritzes Kungl. Hovbokhandel  
Regenngsgatan 12, Box 16356  
S-103 27 Stockholm

For subscription orders  
Wernnergren-Williams AB  
Box 30004  
S-104 25 Stockholm

**SWITZERLAND**  
Librairie Pavot  
6 Rue Grenus  
Case postal 381  
CH 1211 Geneva 11

**TANZANIA**  
Oxford University Press  
P O Box 5299  
Dar es Salaam

**THAILAND**  
Central Department Store  
306 Silom Road  
Bangkok

**TRINIDAD & TOBAGO**  
Systematics Studies Unit  
55 Eastern Main Road  
Curepe  
Trinidad, West Indies

**TUNISIA**  
Societe Tunisienne de Diffusion  
5 Avenue de Carthage  
Tunis

**TURKEY**  
Haset Kitapevi A S  
469 Istiklal Caddesi  
Bevoglu-Istanbul

**UGANDA**  
Uganda Bookshop  
Attn. Mr. Martin-Luther Galwango  
P O Box 7145  
Kampala

**UNITED ARAB EMIRATES**  
MEMRB  
P O Box 6097  
Sharjah

**UNITED KINGDOM AND  
NORTHERN IRELAND**  
Microinfo Ltd.  
P O Box 3  
Alton, Hampshire GU 34 2PG  
United Kingdom

**VENEZUELA**  
Libreria del Este  
Aptdo 60 337  
Caracas 1060-A

**WESTERN SAMOA**  
Wesley Bookshop  
Apia











## The World Bank

### Headquarters

1818 H Street, N.W.  
Washington, D.C. 20433, U.S.A.

Telephone: (202) 477-1234

Telex. WUI 64145 WORLDBANK

RCA 248423 WORLDBK

Cable Address INTBAFRAD  
WASHINGTONDC

### European Office

66, avenue d'Iéna  
75116 Paris, France

Telephone. (1) 723-54.21

Telex 842-620628

### Tokyo Office

Kokusai Building  
1-1 Marunouchi 3-chome  
Chiyoda-ku, Tokyo 100, Japan

Telephone (03) 214-5001

Telex 781-26838

