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Tax Designed for Levy by Panchayats**

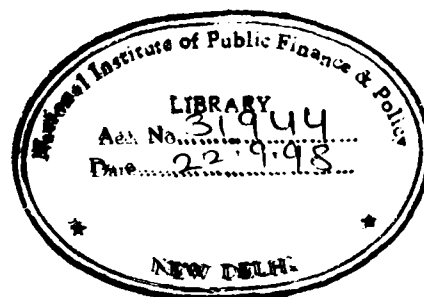


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A Land-Based Agricultural Presumptive Tax Designed for Levy by Panchayats

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With economic reform and the dismantling of the structure of implicit taxation of agriculture through imported-protected industrialisation, accompanied by partially-compensating input subsidies, the case for an explicit tax on agriculture resurfaces with, however, a new emphasis on retention within the sector of resources so raised for infrastructure development and productivity-enhancing land improvements. This paper designs a crop-specific presumptive levy to supplement the land revenue, and presents the results of a field survey in northern Karnataka covering three crops as a prototype of the kind of exercise necessary.

The survey confirms prior expectations of wide disparities in returns between crops and justifies the crop-specific approach recommended. The flat rate options to the agricultural income tax on plantations already on offer in some states suggest that a more widely-based presumptive scheme for taxation of profitable crops will prove acceptable. There cannot be any national uniformity in the crops chosen for taxation nor indeed should such uniformity be sought. There is a fortunate convergence between the requirement of stable norms for presumptive purposes, and the requirement of a taxable threshold for exemption of crop failure, whether idiosyncratic or non-idiosyncratic.

For reasons having to do with information availability, and amenability to jurisdictional demarcation, it is recommended that powers of levy of both the crop-specific supplementary and the basic land revenue be decentralised to the panchayat level of government. Unless a beginning is made in a sequential crop-specific manner towards the tapping of agricultural surpluses for the local financing of agricultural infrastructure, any improvement in rural levels of living will remain dependent on uncertain transfers from higher levels of government, themselves constrained by the compliance crisis in the country.

I Introduction

THE power to tax agricultural income in India, under the constitutional allocation of spheres of authority, is vested with state-level governments, separately from the power to tax non-agricultural income, which is vested with the central government. This separation of powers of levy dates back to the pre-Independence Income Tax Act of 1935 under which Provincial Governments were granted the sole right to tax agricultural income. The exemption of agricultural income from the central income tax continues under section 10(1) of the (presently operative) Income Tax Act of 1961.¹

Two types of direct taxes on agriculture are found at state-level. There is a land-based tax, called the land revenue. This has a long ancestry, and remains a universal levy (although some states like Haryana and Punjab have recently abolished the land revenue). There is also a schedular agricultural income tax which is less universal, levied in only seven states (Assam, Bihar, Karnataka, Kerala, Orissa, Tamil Nadu and West Bengal),² and confined essentially to plantation crops.³

The combined yield from land revenue and the agricultural income tax amounted in 1994-95, the most recent year for which

consolidated figures of actual collections aggregating across all states are available, to Rs 1,222 crore, of which land revenue accounted for over 90 per cent.⁴ The total amounted to a mere 0.8 per cent of total national tax revenue aggregating across centre and states; and 2.2 per cent of tax revenues collected by the states. The common feature amidst the diversity of state-level land revenue legislation, which has reduced the levy to revenue insignificance over the years, is the long period between revisions of 'settlement' rates as they are called. So low are these rates today, that they are to be seen more in the nature of user charges for the maintenance of land records by the village-level state government functionary appointed for revenue collection purposes.

This paper does not purport to provide a survey of the present design of land revenue in each state. What is important is that state governments have no incentive to restructure the levy because land revenue is shared with panchayats, fully in some states, partially in others. Karnataka has been an exception since 1983; see Section V. The sharing was most usually not by origin (jurisdiction of collection) but by formula, either per capita or some other such with redistributive intent. This left neither the panchayat nor the state government with a stake in improved collections. The land revenue in India is a

textbook illustration of the folly of trying to achieve fiscal redistribution through tax sharing arrangements in place of independent and transparent grants.

Following the 73rd Amendment to the Constitution, which gave a constitutional status to panchayats as a third-tier in India's federal structure, new panchayat legislation has been enacted in almost all states. The new fiscal provisions enacted, but not necessarily yet notified, are summarised elsewhere [Rajaraman et al 1996]. The design of land revenue, and the general features of sharing provisions remain essentially unchanged under the new legislation, although there may have been some alterations of detail.

On the need for taxing agricultural income in developing countries, there has been overwhelming agreement among economists from the time of Ricardo.⁵ Practice however did not conform to prescription. "Not one developing country has to date utilised the undoubted potential of properly constructed agricultural taxes as part of a conscious development policy as well as to raise revenue" [Bird 1974:41]. Ursula Hicks has spoken of the "allergy of modern India to the effective taxation of the agricultural sector" [Hicks 1961:330]. In the event, other non-transparent means of taxing agriculture were substituted, most usually import-

protected industrialisation, which raises the price of industrial goods consumed by the agricultural sector well above world prices, while agricultural prices remain at (or below) world prices; and by restricting imports raises the exchange rate and thereby lowers the earnings in domestic currency from agricultural exports. This then leads to pressure for subsidised inputs for agriculture, and thus to the maze of price distortions the unravelling of which is the core of the typical programme for structural adjustment and reform in developing countries.

The correction of this complex interlocking of price distortions through which the agricultural sector is non-transparently taxed and simultaneously appeased cannot be smooth or instantaneous. During that process there must gradually be brought into place a transparent mechanism for taxing of agricultural incomes without, however, any of the historical insistence on the need for transferring resources out of agriculture. The new emphasis has to be on *retention* of any resources raised from agriculture for infrastructure development and productivity-enhancing land improvements *within the sector* [Newbery 1992].

Because the general difficulties of enforcing income tax compliance in developing countries are especially severe in the agriculture context, the design of a tax on agriculture cannot be examined independently of the level of government at which it is to be levied. For reasons having to do with information availability, and amenability to jurisdictional demarcation, this paper recommends that powers of levy of the land revenue should be decentralised to the panchayat level of government. The paper further argues that the land revenue should be supplemented by a crop-specific presumptive levy, also land-based, but grounded by way of field surveys on crop yields, an observable indicator of taxability. Since field surveys are time-consuming, a supplementary levy of this type can only be implemented in a sequential manner, with an initial focus on the crop/s known to be most profitable in each area. The technical expertise for conducting the field surveys will be available only at state level, so that there will have to be a process whereby the district planning committees⁶ forward to the state government an initial list of agricultural activities for survey, in accordance with the local ordering in terms of profitability. Whichever among these is established by the field surveys as taxable will then be the first to be implemented. Inter-crop equity is ensured by this two-stage selection procedure. There cannot be any national uniformity in the crops chosen for taxation nor indeed should such uniformity be sought. The purpose of the tax is to enable public provision of productivity-enhancing improvements to

agricultural infrastructure, so that failure to implement the tax can only be a local decision with implications that, in the first instance, will be local rather than national.

Since this paper does not recommend a nationally uniform crop tax, the specifics of the levy can only be set in the context of a particular region. The paper presents the results of a field survey conducted in northern Karnataka, covering three commercial crops, as a prototype of the kind of exercise necessary. Two of the crops are 'sunrise' seed propagation activities conducted through bilateral tie-ups between farmers and seed companies. The third is intercropped chillies-cotton, traditional commercial crops of the region, grown under unirrigated conditions. The results more than bore out prior expectations of diversity in returns to agriculture. The samples selected are however small, and serve as no more than a prototype for the kind of survey required.

A first requirement for a presumptive agricultural tax is stability in the percentage of surplus over total variable cost to total revenue. Instead of taking a simple average across cultivators, the surplus is plotted as a function of yields per acre for each crop. The yield per acre at which the percentage stabilises serves as a natural endogenously generated exemption threshold. A yield threshold eliminates the risk element that land taxation introduces into net farmer income.⁷ The approach can and should be extended beyond crop cultivation to non-cultivation primary activities like livestock-rearing and shrimp farming, where there is prima facie evidence of taxability.

A simple single-rate structure is recommended here, not graded to yield levels above the threshold, so that no information is required either on the exact quantum of yield of each taxable cultivator or on the complete cropping pattern of every cultivator. The only information required is a listing of cultivators growing crops in the selected

subset. This, and information on whether the yield obtained by a particular cultivator falls above or below the stipulated exemption threshold will be easily and costlessly obtainable locally, which is why levies of this type are feasible only at panchayat level. The information costs advanced by Skinner, as a possible explanation of why land-based taxation of agriculture is rarely a serious revenue source despite its undoubted efficiency advantages [Skinner 1993:352-73] can thus be seen to be quite simply a result of levy at the wrong level of government.

A land-based tax bears clearer jurisdictional markers than a tax on output or exports of the kind advanced by Hoff (1991), and is for that reason suited to levy by local-level government. Since the incidence of an output tax falls in long-run competitive equilibrium on the consumers of agricultural products in proportion to their consumption, an output tax is more an indirect tax suited to levy by higher levels of government, rather than a replacement in any sense for the within-sector generation of revenues that a well-designed land tax makes possible.

Transfer of powers of levy to panchayats and greater visibility of the uses to which tax revenues are put substitutes downward accountability for the upward accountability ensured by present systems of auditing and control of government expenditure. There need not necessarily be a concomitant transfer of the revenue collection function. Judgment

TABLE 2: KARNATAKA AGRICULTURE INCOME TAX RATES - COMPOSITION SCHEME

Acres	Levy (Rs)
< 15	
15 - 20	750/acre
20 - 25	1000/acre
25 - 30	1400/acre
30 - 40	1750/acre
40 - 50	2250/acre

Source: Office of the Commissioner, Commercial Taxes, Government of Karnataka.

TABLE 1: SUMMARY OF LAND REVENUE STANDARD RATES IN KARNATAKA

Group	(Rs/acre/annum)							
	Dry Land		Wet Land		Garden Land		Plantation	
	Min	Max	Min	Max	Min	Max	Min	Max
Basic land revenue	0.64	6.26	1.06	25.73	0.96	39.90	6.25	11.56
Levy inclusive of 75 per cent cess	1.12	10.97	1.86	45.02	1.68	69.82	10.94	20.23
Zone	K.I	B.II	B.III	R.XXXX	K.VII	K.III	S.I	Puttur

- Notes: 1 Standard rates are determined at 4 per cent of the cash value derived from the average gross yield of the principal crops on land of the highest soil value in that zone/group/class. Actual rates are specified fractionally with respect to the standard rate.
- 2 For zones whose rates were modified and notified only in 1976 the rates presented are the modified rates.
- 3 In some zones, such as Belgaum II and Gangavathi XXXXI, there are two rates for garden (bagayat) land: a higher rate for 'parasthal bagayat' (surface-irrigated) and a lower rate for 'morasthal bagayat' (well-irrigated). The higher rate is the one reported in the table. In others, such as Tarikere III, there is a general rate, and a higher rate for land sown to areca; in these cases, the table reports the general rate.

Source: Mysore/Karnataka Gazette Notifications. The system underlying the numbering of zones is not explained in these documents.

on the relative revenue collection efficiency of different levels of government can only be empirically driven, and does not permit of resolution based on a priori arguments.

This paper does not recommend independent powers of concurrent levy for state and panchayat level governments on agricultural income, because that leaves neither level of government with adequate control over the total tax burden imposed.

The land-based levy recommended here is a presumptive levy on the income generated from the land rather than a levy on asset value in the sense of a property tax. The parameters of presumptive levies on income are defined in Rajaraman (1997).⁸ Land revenue as presently levied in most states, with all its regional diversity in terms of design and construction, is presumptive in conception. The actual relationship between levy and land productivity may be seriously lagged, inadequately stratified, or otherwise deficient, but the principle underlying the levy has always, historically and presently, been the productivity of land, however that productivity might have been assessed. A conventional income tax on agricultural income based on self-declaration supported by books of accounts is impossible in the context of small-scale farming in developing countries, because of the difficulties of verification and monitoring of large numbers of petty cash transactions. Even for organised operations like plantations, some states like Karnataka, Kerala and Orissa offer presumptive options to self-declaration for the agricultural income tax. Where this is done, the agricultural income tax functions essentially as a plantation crop-specific supplement of the type recommended in this paper.

The case for supplementary levies on a selected subset of crops is predicated on the expectation that returns to cultivation are not equalised by cropping pattern shifts, even within a homogeneous agro-climatic region. Any of a number of barriers to entry on account of factor-specificity or imperfections in factor markets can prevent shifts to the most profitable crop in a region. The new 'sunrise' agro-based activities in agriculture like seed propagation or floriculture for export are likely to be especially entry-barriered because of the need for tie-ups with buyers, who tend to limit their engagement so as not to over reach their monitoring and quality control capabilities.

A Committee on Taxation of Agricultural Wealth and Income (the Raj Committee) was set up in 1972, in response to the dissatisfaction with the poor yield of agricultural taxation repeatedly voiced in reports of assorted government committees. The Raj Committee recommended a progressive schedular agricultural holdings tax (AHT) on agricultural income to replace the land revenue. The AHT was not accepted

by any state government. The committee marks a major hiatus in the attempt to tax agricultural income in the country, because the rejection of its recommendations placed the final seal of political impossibility on the entire issue. The principal defects of the AHT were the attempt at universal coverage of all crops, which required information on the cropping pattern of each cultivator for assessment purposes, and the absence of any systematic exemption provision for idiosyncratic crop failure in the form of yield thresholds (as distinct from discretionary exemption for non-idiosyncratic yield failure covering an entire region). Instead, there was a nationally uniform taxable income threshold.⁹ These aspects of the design of the AHT resulted from the central concern of the committee with national uniformity and rate progressivity by holding size.

The essential point of departure of the scheme recommended here from that of the Raj Committee is that *no attempt is made to find a universal substitute for the land*

revenue presently in place. The cross-sectional pattern of relative rates of land revenue can be left untouched, with the absolute rates themselves reset if need be at their indexed value. *However, the pressure for this kind of rate revision has to be endogenously generated through jurisdictional retention of land revenue at panchayat level, accompanied by a hard budget constraint, rather than exogenously imposed.* The presumptive crop-specific supplementary levy recommended here is specified per acre sown to a particular crop, not with respect to total income from a crop, aggregating across acreage sown to it. Following from this, there is no acreage threshold. But there is a need for a taxable threshold per acre, which is what is specified in terms of crop yield, a readily observable indicator, rather than net income, which is not readily observable.

Section II is a brief review of Indian practice and prescription in respect of agricultural taxation. Section III examines the Raj

TABLE 3: PER CENT SURPLUS OF TR/ACRE AT THRESHOLD AND AVERAGE YIELDS

	Tomato Seed		Sunflower Seed		Chillies-Cotton	
	Threshold Yield	Average Yield	Threshold Yield	Average Yield	Threshold Yield	Average Yield
TR/Acre (per 3/4 acre) (Rs)	63,333 (47,500)	74,727 (56,046)	5,050	8461	i 4,140 ii 4,234 iii 6,000	5,738
Yield/acre (per 3/4 acre)	33.3 kg (25 kg)	39.0 kg (29.2 kg)	2 qtl	3.1 qtl		
Per cent threshold/average yield (per cent)	(85)	(100)	(65)	(100)	i 72 ii 74 iii 105	100
Per cent (TR-TVC) / TR (per cent)	70.48	66.73	51.31	52.33	i 68.25 ii 67.02 iii 61.08	63.74
(TR-TVC) /acre (per 3/4 acre) (Rs)	44,637 (33,478)	54,873 (41,155)	2,591	5,353	i 2,825 ii 2,838 iii 3,665	3,986

Notes: The implicit price from the TR and yield figures at the threshold and average may differ.
 Tomato Seed: The natural unit of land sown is 3/4 acre; figures per acre are shown for comparability across crops.
 Chillies-cotton: No physical yield figures are reported because the mix of chillies and cotton obtained varies between the three revenue thresholds. The average was 1.03 quintals chillies and 1.44 quintals cotton per acre.

TABLE 4: COST SUMMARY

	(Per cent)				
	Tomato	Sunflower		Cotton-Chillies	
Yield threshold	25 kg.*	(i) 2 qtls.	(ii) 2.4 qtls.	Rs 4,140	Rs 4,234
(Per cent threshold/average)	(85)	(65)	(77)	(72)	(74)
TR at threshold (Rs)	47,500*	5,050	6,440	4,140	4,234
Per cent TVC/TR	30	49	44	32	33
Per cent (TVC+int)/TR	32.25	52.68	47.30	34.40	35.48
Per cent irrigation cost/TR	2.69	15.77	12.37	-	-
Per cent development allowance/TR	2.00	2.00	2.00	2.00	2.00
Per cent land rental/TR	10.00	10.00	10.00	5.00	5.00
Per cent equipment cost/TR	0.10	0.42	0.33	0.40	0.39
Per cent total cost/TR	47.04	80.87	72.00	41.80	42.87
Per cent (TR-TC)/TR	52.96	19.13	28.00	58.20	57.13
[TR-TC] (Rs)	25,156*	966	1,803	2,410	2,419

Notes: * Tomato figures are per unit cultivated (0.75 acre); all other figures are per acre. The percentage TVC/TR are rounded approximations of figures reported in Table 3.

Committee AHT in some detail. Section IV delineates departures from the AHT in the scheme proposed here. Section V presents land revenue rates in Karnataka, along with the rate structure of the presumptive alternative to the agricultural income tax on plantation crops. Section VI presents the variable cost norms for the three crops from the field survey. Section VII adds on fixed costs to obtain taxable income, on which the suggested levies are based. Section VIII presents a summary of recommendations.

II

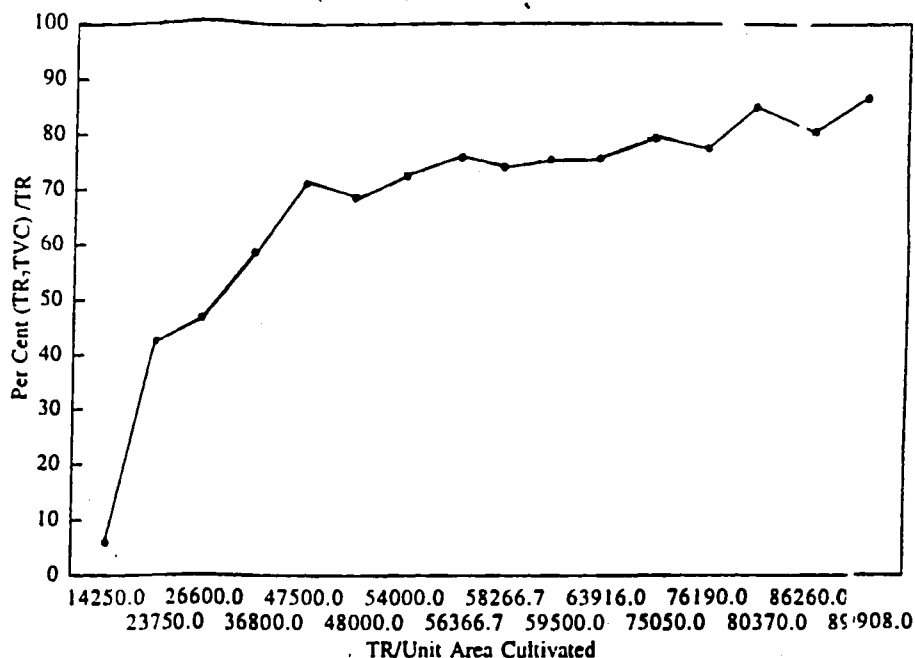
Agricultural Taxation in India

When the income tax was first introduced by the government of India in 1860, there was an experimental phase until 1886 during which agricultural income was by turns included and excluded from taxable income, and the income tax itself alternately imposed and withdrawn [details in Rajaraman-Bhende 1997: Appendix A]. When the income tax was reimposed permanently in 1886, agricultural income was exempted on the grounds that agriculturists were already paying land revenue. The exemption remained in place thereafter through subsequent enactments, but in response to the recommendations of the Todhunter Committee which emphasised the need to tax agricultural income over and above land revenue, the Income Tax Act of 1935 granted Provincial Governments the right to tax agricultural income.¹⁰

No attempt is made in this paper to track the provincial/state legislation on agricultural income taxation subsequent to the Central Enactment of 1935 empowering them to do so. The difficulties of subjecting agricultural income to taxation under conventional self-declaration made the revenue yield negligible at all times. Today the state-level agricultural income tax is levied in very few states, and where levied is reduced essentially to a tax on plantation income.

The agricultural income tax in Karnataka, the regional focus of the exercise conducted for the paper, is described briefly in Section V along with land revenue in the state. In Karnataka, there is a presumptive option to the agricultural income tax, called a 'composition scheme', under which flat levies progressively structured by size of holding may be paid as an alternative, independently of actual production, up to a ceiling of 50 acres. The Karnataka scheme is not crop-specific, but Kerala offers a similar 'compounded rates' option which is. These schemes already in place in some states indicate very clearly that the presumptive option in the agriculture context is known and currently on offer, and that a more widely-based presumptive scheme for taxation of profitable crops or activities would not be unacceptable in conception.

FIGURE 1: TOMATO SEED PROPAGATION
Per Cent (TR-TVC) / TR as a Function of TR/Unit



Land revenue remains the only universal levy on agriculture, under legislative provisions that vary from state to state. There was a major reform of land revenue during the colonial period. Indeed, it is the land surveys conducted more than a century ago that constitute the basis on which land revenue rates are levied to this very day. The land revenue is fundamentally presumptive, in that there is an underlying intent to relate the levies to land productivity, either explicitly through crop yields or implicitly by way of soil stratifications.¹¹ The rates are revised in principle every 30 years, but in practice are not adequately indexed to inflation or productivity improvements in the interim. In some states like Karnataka (see Section V), there are explicit provisions in the land revenue legislation prescribing that rate revisions should not incorporate productivity improvements effected in the 30 years prior to rate revision. In others, there are prescribed limits to the rate increase permissible. These provisions ensure that neither the quantum nor the structure of present-day levies need bear any relationship to present-day patterns of land productivity. Only a few states have crop-specific cesses on acreage sown to commercial crops, superimposed on the basic levy.¹²

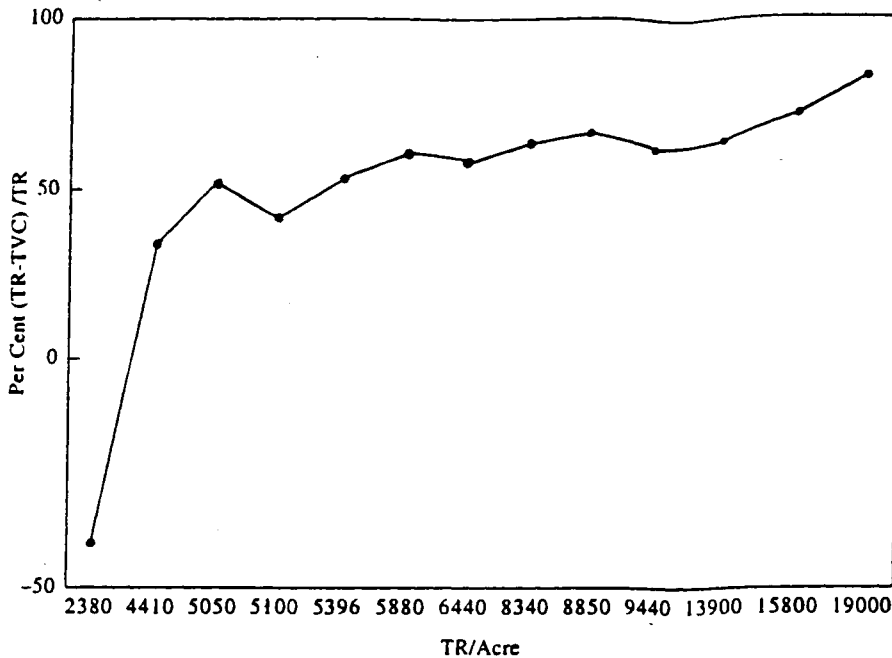
Dissatisfaction with the ineffectiveness of land revenue as a tax on agricultural income was sounded as early as 1956, much before the yield improvements of the green revolution [Kaldor 1956]. The judgment that agriculture was undertaxed was shared by a number of subsequent commentators [Kalecki 1960; Rao 1961; Hicks 1961; Bardhan 1961; Groves and Madhavan 1962; Little 1964; Mathew 1968; Joshi et al 1968;

and Bhargava 1972], although they differed on the manner in which taxation of agriculture should be reformed. The theme of undertaxation of agriculture began to be sounded also in a number of official documents with the increased if uneven prosperity that accrued to cultivators as a result of the green revolution. The Fifth Finance Commission recommended that the central income tax cover all, including agricultural, income [Government of India 1969:85]. The Fourth Five-Year Plan and the Direct Taxes Enquiry (Wanchoo) Committee of 1971 called not for unification but for parity in the rate structure between the taxation of agricultural income at state level and the central income tax on non-agricultural income [Government of India 1970:85].

In response, the ministry of finance, government of India appointed a Committee on Taxation of Agricultural Wealth and Income (the Raj Committee) in February 1972 to suggest methods by which taxation of agricultural wealth and income could be used "more effectively for raising additional resources for development, for reducing economic disparities and for efficient use of existing resources". The committee submitted its report in October 1972.

The major recommendation of the Raj Committee was a state-level but nationally uniform progressive schedular agricultural holdings tax (AHT),¹³ to replace the flat rate, nationally non-uniform land revenue in a two-phase operation. The Committee did not call for central levy of the AHT, but did suggest "partial integration" of agricultural income as calculated for purposes of the AHT with non-agricultural income of the

FIGURE 2: SUNFLOWER SEED PROPAGATION
Per Cent (TR-TVC) /TR as a Function of TR/Acre



assessee, for determination of the income tax slab rates applicable to the non-agricultural component. This second recommendation was implemented in the Finance Act of 1973, and remains in force to this very day, but has not been very effective in plugging the revenue leak from non-agricultural income classified as agricultural.¹⁴

The Raj Committee marks a hiatus in the Indian debate on agricultural income taxation. That neither the AHT, nor its variants suggested by Bagchi 1979 and others found acceptability in any state seemed to set the final seal of infeasibility on agricultural taxation. *The rejection of the AHT calls for an examination of the design of the AHT and its variants (section III) from which any fresh proposal for taxation of agricultural income must be differentiated.*

A lull followed the Raj Committee and its aftermath. In recent years, however, calls for taxation of agricultural income have been sounded again on equity grounds. These include Lakdawala (1983); Kahlon (1983); Shah (1986); Pandey (1991b and c); and Burgess and Stern (1993). Some of these, such as Pandey (1991c), suggest agricultural taxation on a presumptive basis. Some others, such as Lakdawala (1983), advise against it, on the grounds that a tax on potential income cannot be as progressive as a tax based on assessment. Surprisingly, some recommendations can still be found in recent literature for taxation of agricultural income under the central income tax [Guhan 1995:87] or for rate parity with the central income tax [Pursell and Gulati 1995:296]. Most advocacy of agricultural taxation is based on casual observation of pockets of rural prosperity. There are very few survey-based

attempts to address the issue of whether agricultural income is taxable. One exception is Arneja (1986), based on a 1978-79 field survey of 300 owner cultivators from 12 villages in four districts of Punjab, which concludes that the incidence of direct land taxes has been regressive [Arneja 1986:636].

Any scheme for agricultural taxation has to overcome the association of agricultural taxation with oppression, which is a function of the historical experience of high rates of levy, coupled with an absence of systematic, as distinct from discretionary, catastrophe exemption. With reasonable rates of levy, systematic provision for catastrophe exemption, and with retention of revenues raised by local-level government, the compliance resistance to agricultural taxation should in principle be possible to overcome. An important caveat should however be borne in mind. *Even where, as is recommended in this paper, the power to levy agricultural taxes is given to the panchayat level of governance, the maintenance of land records must remain the rightful preserve of state governments.* This is especially important in India where there are no formal titles to land ownership other than the land records maintained by the village-level official who is at present a state government functionary.¹⁵ This arrangement will have to remain in place for the foreseeable future, so that local records are not corruptible by local power structures, as has repeatedly happened historically in India.

Transfer of the levy to panchayats has to be accompanied by legislative provisions making the land revenue an obligatory panchayat levy, at floor rates prevailing at the time of transfer of powers of levy. This

will fortify panchayats in their confrontation with initial pressures to lower or repeal the tax within their jurisdictions. The crop-specific supplement can remain an option. Where there is presently an acreage exemption threshold for applicability of land revenue, as there is in Karnataka for example (see Section V), there is a strong case for removal of these thresholds at the time of transfer of the levy to panchayats.

This paper recommends that taxation of agriculture should not be attempted on any basis other than land-based presumption using survey-generated norms, except perhaps for the plantation sector. There is simply no information on the basis of which self-declared income can be verified and assessed. The next section examines the Raj Committee AHT in some detail, and delineates the departures from the AHT in the scheme proposed here. Among these is a more careful survey-based approach to the specification of yield norms. Any presumptive scheme is only as good as the norms used.

The call of Pandey (1991c) for reimposition of central wealth and capital gains taxation on agricultural properties is not endorsed here. Multiple tax burdens imposed by other levels of government will only place obstacles in the way of effective panchayat-level taxation of agriculture.

III

The Raj Committee Agricultural Holdings Tax

The principal defects of the land revenue system as seen by the committee were a lack of national uniformity, and a lack of progressivity in the rate structure. The committee proposed replacement of the land revenue by a progressive AHT. The committee devised a procedure for estimation of agricultural income, on which the AHT alone was to apply as a schedular, source-specific levy.

All agricultural income, including income from livestock, fisheries, poultry and dairy farming was to be subject to the AHT. The tax liability under the AHT on the taxable rateable value (TRV) of the *j*th holding was:

$AHT_j = (X/2)$ per cent of TRV_j ;
where X : the TRV in units of a thousand rupees.

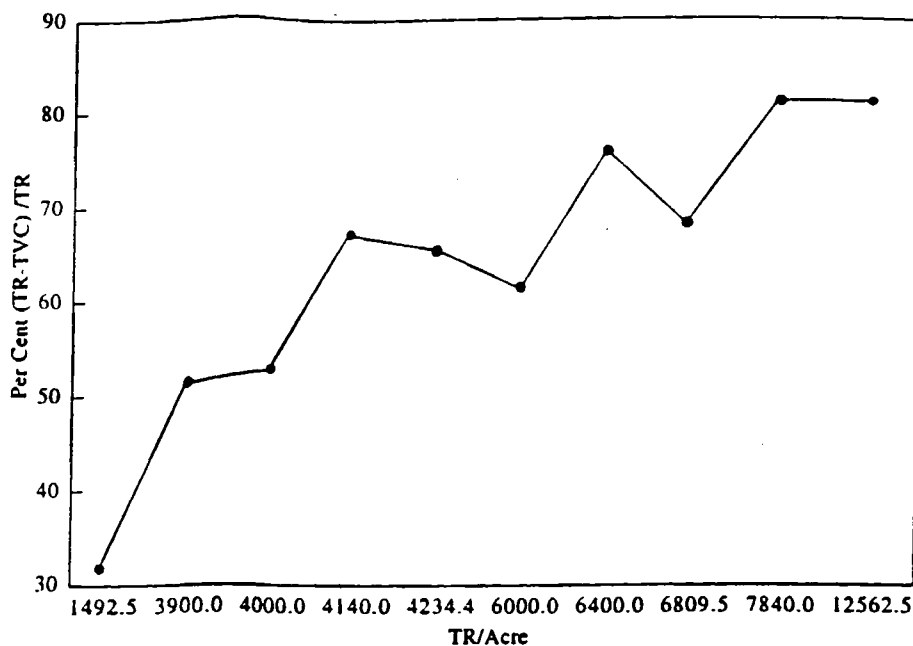
This formula was devised to build in progressivity in the rate structure. The AHT threshold was a TRV of Rs 480.

Computation of Taxable Rateable Value of Agricultural Holdings

(1) *Stratification*: By soil-climatic tract and crop/crop group.

(2) *Taxable base*: The operational holding; trusts and companies were not exempted, but had special rates and procedures for assessment.

FIGURE 3: RAINFED CHILLIES - COTTON
Per Cent (TR-TVC) / TR as a Function of TR/Acre



(3) *Yield norms*: By crop per hectare, for each tract, to be prepared afresh each year based on an average of the previous 10 years, valued at the relevant average harvest prices of the preceding three years to obtain the value of gross output.

(4) *Rateable value (RV)*: For the *i*th crop:

$$RV_i = [1-f_i] GO_i$$

where

RV : Rateable value/hectare.

GO : Value of gross output/hectare.

f : Fraction of gross output that goes out as paid-up costs (excluding costs of irrigation).

Paid up costs were defined to include only material and labour costs actually paid out by the farm operator for current cultivation. *The imputed cost of family labour was treated as part of the taxable income of the family. The committee did not recommend that field surveys be conducted for the determination of paid up costs, assuming perhaps that standard cost of cultivation surveys provided a ready source of information. However, these surveys are not available at the level of regional disaggregation recommended by the committee, nor do they have comprehensive crop coverage.*

For each district/tract, the schedule of RV_i of land per hectare for all *i* was to be prepared for each year and included in the legislation of the year in question. Grouping of crops into crop groups was suggested,¹⁶ with each such group given a single rating in terms of rateable value.

(5) *Assessable rateable value (ARV)*:

$$ARV_j = 0.8 \sum [RV_i] H_i \text{ for privately}$$

irrigated land

$$ARV_j = \sum [RV_i] H_i - [\text{water charges for publicly irrigated land}]$$

where

ARV_j : Assessable rateable value of *j*th holding.

H_i : number of hectares devoted to *i*th crop.

(6) *Taxable rateable value (TRV)*: A further 20 per cent, subject to a maximum of Rs 1,000 (termed the 'development allowance'), was to be deducted from ARV to obtain the taxable rateable value of the holding. The development allowance was meant to cover costs of soil conservation, digging of wells and other maintenance and depreciation. Thus,

$$TRV_j = 0.8 [ARV_j],$$

where $0.2 [ARV_j] < \text{Rs } 1,000$

$$TRV_j = ARV_j - 1000,$$

where $0.2 [ARV_j] \geq 1000$

The TRV threshold of Rs 480 implied an ARV threshold of Rs 600.

(7) *Frequency of assessment*: Annual, in accordance with the crop composition of the holding. The rateable values of the crops in turn were to be updated annually on the basis of moving averages (10 years) of yield, and (three years) of price.

(8) *Implementation*: Two phases. First, all operational holdings with ARV of Rs 5,000 or more were to be brought under the AHT. In the second phase, holdings with ARV of less than Rs 5,000 were to be covered.

The administrative complexity of the AHT is readily apparent. Bagchi (1978) suggested that the AHT could be made administratively simpler, while retaining its essential character, if a uniform RV were specified for each area/tract with respect to the *gross value of output of only one or two major crops grown in that area*, without taking account of all crops grown; and if paid out costs were estimated at a flat 30 per cent of gross value of output for all crops.¹⁷

The AHT was not implemented in any state in either its original or subsequently modified versions.¹⁸ On the administrative burden of annual assessment, Raj suggested a move to triennial or quinquennial assessments, which however would have served only to exacerbate the inequity inherent in a levy based on average yields. The Lakdawala Committee estimated the incremental yield from the tax in Uttar Pradesh, and found it to be negative in five of seven districts studied [UP Taxation Enquiry Committee Report 1980].

IV

Departures from the AHT in the Scheme Proposed Here

The differences between the scheme proposed in the present study and that of the Raj Committee are listed below.

(1) *Land Revenue*: The AHT was a substitute for the land revenue. The crop-specific levy advanced here is intended to supplement the land revenue already in place. A comprehensive overhaul of the land

revenue would require resources beyond the reach of cash-strapped state governments today. Indeed, rate revisions within the existing structure are often delayed much beyond the minimum stipulated period because of insufficiency of funds. That is not to suggest that present land revenue rates should necessarily be left untouched. There is considerable scope for indexation of these rates to inflation of product prices since the last revision.

(2) *Level of Implementation*: The scheme suggested here is designed neither for merger with the central income tax, nor like the Raj Committee AHT for nationally uniform schedular application at state level. The crop-specific supplementary along with the base land revenue is intended for levy at panchayat level, with local retention of the revenues so raised for improvement of local agricultural infrastructure. That, coupled with a hard budget constraint on downward fiscal transfers from state governments to panchayats, will generate panchayat-level pressures for enhancement of the land revenue, and greater willingness to comply resulting from local retention of the revenues so raised. Most compellingly, the information required for the crop-specific levy will be easily and costlessly accessible only at panchayat level.

(3) *Progression*: Rate increases by area sown to a crop of the AHT kind in place of flat rates per acre only encourage avoidable splitting of holdings and benami practices. The scheme suggested here does carry progression implicitly, since only those crops which yield higher returns (and which are clearly entry-barriered because of factor-specificity or other reasons, so that the disparity persists in equilibrium) are subject to the supplementary levy.

(4) *Stratification*: The approach taken here is crop and region-specific, akin but not identical to the AHT. It differs radically from the Bagchi proposal for basing the tax on the major crops grown in an area, which could be seriously inequitable if there is no freedom to move into the designated crops because of variations in soil quality or other supply-side barriers. Further, there could be minor horticulture or other crops in any region yielding much higher returns than the major crop of the region. Confinement to the major crops grown in such areas leads to an unwarranted loss of revenue from an entire region.

(5) *Field Surveys*: The specification of crop-specific norms on the basis of field surveys in the present study is the major point of departure from the approaches recommended hitherto, and is the fundamental difference from which flow all its other features such as the particular manner of phasing implementation, which can only be sequential, with an initial focus on the crops known to be most profitable in each area. Because the technical expertise for conducting the field surveys will be available only at state level, there will have to be a process whereby the district planning committees forward to the state government a list of agricultural activities selected for initial survey. Whichever among these proves to be taxable will then be the first to be implemented.

Standard cost of cultivation surveys are confined to the major field crops for which price support operations are in place. There is no equivalent standardised source of information on horticultural and other crops, nor for non-cultivation primary activities like aquaculture, which together constitute the new 'sunrise' sectors within agriculture broadly defined.

Because of the present-day diversity of agricultural activity, it is not possible to stop at collecting information on gross yields alone, and use standard factors to obtain net return therefrom. The assumption of homogeneity in both the AHT and Bagchi approaches in this regard is understandable since there was far less diversity at the time those were formulated. Even with field surveys, the resulting levy will be acceptable only if the norms resulting from the survey on the basis of which the levy is arrived at are made explicit, and if local consensus is sought on the reasonableness of both the norms and the levy.

(6) *Equity*: Since the most serious departures from the presumptive principle in the land revenue as it presently operates arise in respect of areas that have experienced recent alterations of irrigation status, or where improved crop strains, or new crops or activities have been introduced, the appropriate point of departure for a more equitable tax on agriculture would be in the

form of a supplementary levy on these profitable avenues, whether crop cultivation or allied land-based primary activities. Inter-crop equity is ensured by the two-stage procedure recommended here, whereby the selection of crops forwarded by the local bodies for consideration accords with the local ordering in terms of profitability, and the technical survey following defines a further subset based on objective evidence. Equity is emphatically not ensured by comprehensive crop coverage, since field survey-based crop-specific norms will not be possible.

(7) *Imputation*: The field survey design recommended here imputes the cost of family labour, unlike the Raj Committee approach which explicitly recommends that savings on hired labour costs from use of family labour constitute a part of taxable family income. Any expectation of cross-sectional stability in input norms in cultivation can only relate to the total labour requirement, not the hired component alone. Variability in total factor use can in principle be thought of as endogenous to the enterprise; variability in hired factor use is a function of in-house availability, which is exogenous in the short run (and there is no case for setting up adverse incentives for expanding family labour supply in the medium term). Additionally, since wages of agricultural labourers are not taxable, the equivalent return to family agricultural labour should also be non-taxable. Returns to agriculture should be computed only after deduction of such non-taxable components. Other home-

produced inputs are also imputed since, for a crop-specific approach such as this, it is immaterial whether the input involves a cash outlay or foregone income.

(8) *Taxable Threshold*: A threshold that does not systematically accommodate downside yield variability, both cross-sectionally within a region (idiosyncratic) and covering an entire tract or region (non-idiosyncratic), is seriously deficient in the agricultural context. In the scheme proposed here the threshold is generated cross-sectionally from plots of the surplus over total variable cost as a percentage of total revenue, at the yield at which the percentage stabilises. If no such stability obtains between cost and revenue over any range of observed yields, the crop/activity is not taxable on a presumptive basis. Thus there is a fortunate convergence between the requirement of stable norms for presumptive purposes, and the requirement of a taxable threshold for equity purposes. The Raj AHT rateable value threshold of Rs 480 per holding on the other hand, calculated from standard crop averages unadjusted for idiosyncratic yield failure, translated essentially into an exemption by holding-size, which varied by cropping pattern between regions and between cultivators in a region. The Bagchi scheme provided for both exemption by size of holding (1 hectare irrigated; 2 hectares irrigated) and rateable value (Rs 5,000) which, like the Raj Committee threshold carried no provision for idiosyncratic yield failure. For non-idiosyncratic yield shortfalls covering an entire region, both schemes

TABLE 5: SUGGESTED RATES OF LEVY PER ACRE

	Tomato	Sunflower	Cotton-Chillies		
Yield threshold	25 kg*	(i) 2 qtls. (ii) 2.4 qtls.	Rs 4,140	Rs 4,234	
(Per cent threshold/average)	(85)	(65) (77)	(72)	(74)	
TR at threshold (Rs)	47,500*	5,050	6,440	4,140	4,234
[TR-TC] at threshold (Rs)	25,156*	966	1,803	2,410	2,419
Per cent [TR-TC]/TR	52.96	19.13	28.00	58.20	57.13
Land revenue zone	V	V			V
Land category	Garden	Garden			Dry
Maximum rate of land revenue (per acre) (Rs)	16.27	16.27			3.64
incl of 75 per cent cess (Rs)	28.47	28.47			6.37
Maximum land revenue/ [TR-TC] (Per cent)	0.05	1.68	0.90	0.15	0.15
incl of 75 per cent cess (per cent)	0.08	2.95	1.58	0.26	0.26
Suggested rates of levy on [TR-TC]					
a Rate (percentage of TR-TC)	0.50	0.50	0.50	0.50	0.50
Total tax payable (Rs)	125.78*	4.83	9.02	12.05	12.05
Suggested/present levy incl cess (if > 1)	5.89	1.89	1.89
b Rate (percentage of TR-TC)	1.00	1.00	1.00	1.00	1.00
Total tax payable (Rs)	251.56*	9.66	18.03	24.10	24.19
Suggested/present levy incl cess (if > 1)	11.78	3.78	3.80
c Rate (Percentage of TR-TC)	5.00	5.00	5.00	5.00	5.00
Total tax payable (Rs)	1,257.8*	48.30	90.15	120.50	120.95
Suggested/present levy incl cess (if > 1)	58.9	1.70	3.17	18.92	18.99

Notes: * The tomato figures are per 0.75 acre; the suggested levy is blown up to a per acre basis before obtaining the ratio to the present land revenue rates.

provided for discretionary suspension of liability to pay.¹⁹ Discretionary provisions of this type are quite distinct from systematic provisions for yield variability.

(9) *Information Requirements for Assessment*: The scheme developed here suggests annual assessment limited to those farmers growing any of a few designated crops. Assessment at a pre-determined rate of levy per acre applies above a specified yield threshold, with information required only in respect of whether a particular farm falls in any year above that threshold or below it. The crop-specific supplementary permits adjustments to yield variability above the threshold, although a simple single-rate structure is least demanding in terms of information requirements and therefore recommended. The single rate is worked out at the threshold yield, not the average yield. The AHT by contrast required information on the complete cropping pattern of every cultivator.

(10) *Gross Output vs Marketed Surplus*: The Raj Committee did not adjust for marketed surplus at all, perhaps because of the expectation that smaller cultivators with a lower marketed surplus would in any case fall below the taxable threshold. In the crop-

specific approach proposed here, if a food crop is sufficiently profitable so as to be taxable in a particular area, but if smaller subsistence cultivators have a lower marketed surplus, and hence a smaller cash income as a percentage of gross output, an adjustment can be worked in.

(11) *Owned vs Operated Land*: Finally, the study here recommends taxation of land owned rather than land operated, in accordance with the consensus reached in the debate following the Raj Committee Report. The field survey however collected data on yields and costs of cultivation without reference to whether the land operated was owned or leased in.

V

Land Revenue and the Agricultural Income Tax in Karnataka

Land revenue is presently levied in Karnataka under the Karnataka Land Revenue Act, 1964. The basic land revenue in Karnataka has not been shared by the state government with panchayats ever since the 1983 enactment of new panchayat legislation in the state.²⁰ Prior to 1983, the basic land revenue was shared with local bodies, as reported by the Raj Committee [Government

of India 1972:149].²¹ It might seem paradoxical that the pathbreaking 1983 legislation which was intended to strengthen panchayats should have withdrawn a tax-sharing provision previously in place, but the intention seems to have been to replace a feeble revenue flow with a more substantial grant of Rs 10 per capita.²²

Following the 73rd Amendment to the Constitution, the Karnataka Panchayati Raj Act 1993 (Act No 14), as amended by Ordinance No 1 of 1995, continues to leave the basic levy entirely with the state government, but provides for a cess of 100 per cent on the basic levy, the revenue from which is to be given to panchayats by origin of collection. This provision has not been implemented so far. What is presently in place is the basic levy, with three cesses which together adding up to 75 per cent of the basic levy. Of this, 25 per cent is a health and education cess on the land revenue, which accrues to the relevant departments of the state government and not to panchayats. The remaining 50 per cent also does not go to panchayats, even though termed a local government cess. Gram panchayats receive an annual block grant of Rs 1 lakh unrelated to population. The additional provision by

the Tenth Finance Commission for local governments is to be given to gram panchayats at the rate of Rs 12 per capita, if matched by Rs 6 raised locally.

When the new provision for a 100 per cent cess shared by origin is implemented, it will give local government a stake in improved collections. As in other states, the land revenue in Karnataka is presently revenue-insignificant. 'Settlement rates', as they are called, must by statute be left unchanged for a minimum of 30 years, and even when revised, do not incorporate changes in cropping pattern or yield improvements in the interim because of a critical section of the Karnataka Land Revenue Act, which ensures that land that changes in irrigation status within a 30-year period prior to any revision of settlement rates is not re-classified.²³ Further, land irrigated under major irrigation schemes does not (ever) change its classification, so that rate revisions do not reflect the resulting enhancement to crop yields. The irrigation investment by the state government is inadequately recovered through independent water charges. The setting of land revenue rates with respect to principal crops covering two-thirds or more of cropped area in a particular land category²⁴ means that profitable minor crops are not fully taxed. Finally, there is a relatively high exemption threshold of 10 acres for unirrigated dry land,²⁵ below which no land revenue is payable. Holdings above the exemption limit are however charged for the full holding.

The (implicit) buoyancy of land revenue, from the decline over time in its share of SDP from agriculture, is negative. Collections in 1989-90 amounted to a mere 0.26 per cent of SDP from agriculture.²⁶

Land revenue rates have remained unchanged since the last settlement in 1965.²⁷ The unit of settlement is called a zone. Each zone is broadly homogeneous, but the boundaries conform to administrative demarcations. Zones are further subdivided into up to eight groups on the basis of physical configuration, rainfall, nature and yield of crops, and thereby implicitly soil quality.²⁸ Within each zone/group, the further subdivision into three classes, dry land, wet land and garden/plantation land is done as follows [Government of Karnataka 1984:3-4].

- Dry land ('kushki') is land without private sources of irrigation, where the rainfall is not sufficient to permit cultivation of paddy, sugarcane or other water-intensive crops. However dry land covered by major irrigation schemes of the state government, which make possible the cultivation of wet crops, retains its original classification nevertheless. Thus dry land need not necessarily be unirrigated land.

- Wet land ('tari') is land where water-intensive crops can be grown, with either

groundwater irrigation or surface irrigation from local rain-fed tanks, which are not the property of the state government, or under rain-fed conditions. Thus wet land need not necessarily be irrigated land.

- Garden land ('bagayat') is land covered with garden crops, defined to exclude plantation crops. Bagayat land can be either rainfed or irrigated. The distinction between dry and wet bagayat land is akin to that between kushki and tari, i.e. by type of crop, with unirrigated bagayat where the rainfall is sufficient to sustain wet garden crops classified as wet bagayat, and the same exception for canal-irrigated lands.

Plantations are in a separate category, and were exempt from payment of land revenue until 1976, when settlement rates were notified for plantation lands.

Thus, the differentiation between dry, wet, garden, and plantation land is crop-based,²⁹ with complications arising only in respect of dry land that has subsequently become irrigated by major irrigation schemes. The crop-specific enhancement suggested in this paper is therefore in line with the conventional basis of distinction in terms of land revenue rates.

Table 1 summarises the minimum and maximum standard rates in the state on each type of land, in terms of both the basic levy, and the consolidated levy after inclusion of the 75 per cent cess. Standard rates are determined at 4 per cent of the cash value derived from the average gross yield³⁰ of the principal crops on land of the highest soil value in that zone/group/class. Actual rates are specified fractionally with respect to the standard rate. Called 'bhaganne', these are specified in terms of annas, with soil of 100 per cent value in a particular category rated at 16 anna quality. If there is no land within a particular group of sufficient quality, the standard rate is purely notional, and actual rates are some fraction of the notional standard.³¹ Thus even the minimum standard rates are the maximum applicable in the relevant category.

In all zones, the rates are lowest for dry land, and usually highest for garden land, although in some zones the highest rates are on wet land. The rates vary by group, although there is no uniform convention regarding group numbering.³² In some zones there is no variation across groups at all. In some zones the (flat) plantation rate is lower than on garden land.

Karnataka is among seven states which presently levy an agricultural income tax, confined to plantation crops. The set of plantation crops has a common core across the states, with some variation at the fringes; in Karnataka, for example, it includes cardamom, coffee, linalool, orange, pepper, rubber and tea, but excludes arecanut and coconut. When initially introduced in 1955

in the then Mysore state,³³ the agricultural income tax covered 25 commercial (including plantation) crops, later expanded to as many as 39 commercial crops [Joshi et al. 1968:227-28]. The poor revenue yield from other crops led, starting 1982, to confinement to plantation crops alone. This reinforces the point made at the outset that taxation on a self-declaration basis is infeasible in all but the plantation context. What distinguishes plantations is the ready availability of yield norms per standing tree or plant, and standardised capital and operating costs. Paradoxically, assessment is possible for plantation crops because presumptive norms are so readily available. Land revenue is deductible from taxable income before levy of agricultural income tax.

As a percentage of SDP originating in agriculture, revenue from the agricultural income tax amounted to 0.21 per cent in 1989-90, close to collections from the land revenue despite the much more limited crop coverage. The buoyancy coefficient is also greater than one. After the phased freeing of coffee plantations starting December 1992 from compulsory sales at controlled prices to the Coffee Board, collections from the agricultural income tax jumped from Rs 17 crore in 1994-95 to Rs 50 crore in 1995-96. Although collections in the following year fell to Rs 37 crore because of a fall in world coffee prices, it is clear that the agricultural income tax in Karnataka has entered a new phase in terms of buoyancy.

Karnataka has for many years offered a presumptive option to the agricultural income tax, called a 'composition scheme', under which flat levies per acre progressively slabbed by holding size may be paid as an alternative, independently of actual production. From April 1994, the scheme is binding for three years; in earlier years the assessee could opt in and out of the composition scheme from year to year. The rates presently operative (enhanced in April 1995), are presented in Table 2. It is estimated that around 60-80 per cent of assessees opt for the scheme,³⁴ and that the percentage so opting has increased over time despite the enhancement of rates.

The composition scheme is not crop-specific, although there are schemes elsewhere as in Kerala,³⁵ which are. It is clear that the principles along which a redesigned levy on agriculture is proposed in this paper are not unknown within the levies presently applicable to agriculture, whether in Karnataka or elsewhere in the country.

VI Field Survey Results

The area chosen for the field survey followed from the two 'sunrise' seed propagation crops selected for study. The particular configuration of climatic and soil

conditions required for successful seed propagation is present in the northern region of Karnataka state. The third crop chosen for purposes of contrast is inter-cropped cotton-chillies, a traditional rainfed cash crop of the region: not prima facie a candidate for taxation. The purpose was to contrast returns to the newer more productive, but entry-barriered, commercial crops with those on a more traditional commercial crop *without entry barriers*. The area selected for study falls in land revenue zone V except for one taluk falling in zone IV.

A total of 33 cultivators³⁶ were surveyed from the five taluks selected, all falling in Dharwad district at the time of the survey. These were Ranebennur, Byadagi and Hirekerur for seed propagation; Kundgol and Hubli for chillies-cotton. Following an administrative subdivision of the state in August 1997 into 27 districts from the previous 20, the first three are now in the newly created Haveri district. The other two remain in Dharwar. The sample is admittedly small. The purpose was merely to provide a prototype of the kind of survey necessary. Of the 33 sample cultivators, one was a marginal farmer (under 1 hectare); 4 were small farmers (1-2 hectares).

Input usage was normalised per unit area sown to the crop in question, which in the case of tomato seed is 30 guntas (0.75 acres). Usage of labour was found to be higher where family labour was available, possibly because family labour may not have been used for a full eight hours even though reported as a full day. The manday information as collected, with imputation of family labour at the going wage rate, may therefore somewhat overstate the cost of the labour component. Although family labour has been imputed, the managerial input has not been included in cost. The returns are a measure of the reward for the management function.

Table 3 presents a summary of physical yield, total revenue (TR), and the excess of TR over total variable costs (TVC) per acre for all three crops, at both average and threshold yields. The manner in which the threshold yield was obtained is described *further below*. Details of the constituent physical input norms behind these are available in Rajaraman-Bhende (1997).

Tomato seed propagation, with a mean absolute surplus over TVC of nearly Rs 55,000/acre, is in a different class from the other two crops, where the surplus is of the order of Rs 4-5,000/acre, around one-tenth. This reinforces the case for a crop-specific approach to taxation of agriculture. The figures illustrate how misleading it is to assume uniformity of returns within any given type of cultivation activity. Thus, tomato and sunflower seed propagation are both performed on contractual buy-back arrangements with seed companies, yet

the return on sunflower is more akin to that obtainable from rainfed cultivation of chillies/cotton. The difference between the results for tomato and sunflower within seed propagation on irrigated land highlights the need for finely-tuned crop specificity in establishing the taxability of crops.

The disparity in returns between crops coexists in equilibrium because the more profitable crop is entry-barriered by seed companies unwilling to over-reach their quality control and monitoring abilities. Given such wide disparities between the profitability of different crops, it is entirely justifiable to have an enhanced land-based levy on a few selected crops, and not on others. Discrimination of this type has however to be properly substantiated and this is where the contribution of the present study lies.

Along with the difference between crops in the absolute surplus over variable cost, there is the inter-crop difference in the percentage that this surplus constitutes of total revenue. This percentage is roughly two-thirds for tomato seed propagation and chillies-cotton, but around half for sunflower.

Any tax scheme for agricultural income must necessarily take into account yield failure. The probabilistic component to agricultural outcomes necessitates the identification of a yield threshold below which any presumptive levy does not apply. Use of average yield as a taxable threshold is not recommended for two reasons. One is that it exempts half or possibly more of all cultivators from the tax, and thus defeats the purpose of it. The other is that average yields fluctuate from year to year, whereas a threshold prescribed independently of the average is applicable across time, and is more fair in years or periods of declining average yield.

The farmwise data are plotted in figures 1 to 3 respectively against total revenue/acre rather than physical yield directly for cross-crop comparability, since for inter-cropped chillies/cotton, a consolidated physical yield is not possible.

In the two seed propagation crops, there is a distinct kink in the curve, beyond which the surplus as a per cent of TR stabilises. Upto this threshold value of TR/acre, the surplus increases at a steep gradient. Beyond that, there is a much flatter (though still positive) gradient. Higher yields beyond the threshold are clearly obtainable only through more intensive application of labour and other variable inputs, with the stability of the surplus percentage showing a stability of response of TR to TVC beyond the threshold, and the small positive value of the slope indicating an elasticity of response a little greater than one.

The threshold is less clearly evident for chillies-cotton, where the percentage surplus

of TR does not stabilise at any point. Three alternative thresholds are tried for this crop in Table 3. For each crop, the average is presented alongside the threshold yield/s for comparative purposes.

These thresholds generated from survey data call for no further validation. It is important however to reiterate that the survey here serves only as a prototype, and is derived from a small sample with limited regional coverage. Even for these very crops, the results cannot be used for another region without reference to data from cultivators in that region.

The yield threshold used in crop insurance is a uniform 80 per cent across crops. Crop insurance is confined to a few field crops (cereals, pulses and oilseeds); it does not extend to other field crops such as sugarcane, leave alone horticultural crops such as those studied here. The scheme, open only to owner-cultivators who borrow working capital from the banking system, insures the full extent of the crop loan, with the premium functioning like an addition to the interest rate (2 per cent per crop for cereals, 1 per cent for pulses and oilseeds). In case of yields below the designated threshold, which is 80 per cent of a five-yearly yield average,³⁷ an indemnity is paid equal to the percentage shortfall from the threshold applied to the amount of the loan. Needless to say, fraud in crop insurance claims is rampant, because of the difficulty of verifying the yield declared by the cultivator. *This reinforces the case made here for structuring the tax in such a way as to avoid any need for knowing the exact quantum of yield obtained: the scheme suggested in this paper requires knowledge only of whether the yield obtained falls above the designated threshold or not.*

There is no reason whatever why the threshold chosen here should necessarily conform to the crop insurance norm, since the purpose there is very different from the one here. Indeed, the very advantage of the thresholds developed here is that they are independent of yield averages. A point of comparison is useful nevertheless. Of the three crops studied here, sunflower alone has a generated threshold much below the crop insurance norm. For that reason, in the calculations that follow, an alternative higher yield is examined for sunflower along with the generated threshold of 65 per cent of average yield, purely for comparison purposes. For chillies-cotton, the two thresholds are the first of the three listed in Table 3.

VII

Recommended Rates of Levy

The tax on each crop in what follows will be calculated at the threshold yield, below which no tax is payable. Fixed costs of cultivation are added on *as percentages of total revenue at the threshold yield* rather

than as absolutes, so that the prescribed tax can also be so specified, and thus be automatically indexed to changes over time in the price of the crop (the term inflation is deliberately avoided because sharp downward movements in prices of individual crops are not unknown). The components of fixed costs added on are summarised in Table 4 [details of calculations are in Rajaraman-Bhende 1997]. It is recommended here that the levy be specified each year at the absolute sum resulting from application of the specified rate to total revenue at the threshold, payable uniformly by all cultivators above the threshold. This is recommended for its simplicity. The alternative of specifying it at a uniform percentage of total revenue for cultivators obtaining yields above the threshold carries greater information costs, because the yield of each cultivator would need to be known.

The percentage surplus after addition of fixed costs is of the same order for tomato and chillies-cotton, between 53-58 per cent. It is much lower for sunflower, at 19-28 per cent, because this is an irrigated crop carrying all the costs of irrigation but yielding total revenue of the same order as unirrigated chillies-cotton. The sunflower absolute surplus over total cost is even lower than for unirrigated chillies-cotton. This bears out and justifies the crop-specific approach adopted in this study.

The surplus of TR over TC for the three crops worked out in Table 4 are used to generate the percentage rates of levy implicit in present land revenue rates (Table 5). Land revenue rates vary by zone and land category. The rates used are the maximum applicable on the relevant category of land in the region studied.³⁸ It must be remembered that land revenue is an annual levy per acre. In working out the implicit rate of levy on a particular crop grown in a particular season, the ascription of the tax entirely to that crop imparts an upward bias to the rate of levy. On multiple-cropped land, the rate implicit in land revenue paid would be far lower (aside from the fact of the land revenue figures used here being maxima rather than actuals).

Thereafter, higher alternative rates of levy are examined in Table 5 for their revenue implications. Three possible rates of levy for a crop-specific enhancement are examined for their revenue implications: 0.50 per cent; 1 per cent; and 5 per cent.

On the basis of the rates of levy implicit in present land revenue rates, sunflower is the least justifiable candidate for taxation, since the present rates are already between 1.6-3 per cent of surplus over total cost. For tomato seed, the maximum rate of present levy inclusive of cess amounts to a mere 0.08 per cent of surplus over total cost. A 1 per cent rate of levy on tomato implies a nearly

12-fold increase in the amount payable. Even chillies-cotton, if taxed at 1 per cent, would yield revenue nearly four times that of the present levy inclusive of cess. Even at a 0.5 per cent rate of levy, the revenue increase factors are 6 and 2, respectively. These figures yield rough orders of magnitude of the revenue increase possible. The surplus from sunflower is too low for it to qualify for an additional levy, at either of the two thresholds tried.

The absolute amount so obtained is then payable by all farmers above the yield threshold. This carries some regressivity, but it is far preferable to a rate structure which requires information on the actual yield obtained by each cultivator.

The survey should provide for each crop the following parameters which can be retained as constants for future years:

Y : Threshold yield, specified in physical units per acre (or other land unit).

$f_y = (TR-TC)/TR$ at Y

Using the above parameters, the absolute levy can be worked out for any current year, c, as follows:

(i) $TR^c = Y \times p^c$

where for current year, c

TR^c = total revenue at threshold yield.

p^c = price of crop.

(ii) $L^c = r \times f_y \times TR^c$,

where for current year, c

L^c = absolute levy payable per acre (or other land unit)

r = rate of levy, as a per cent of [TR-TC].

The following caveats need to be borne in mind:

(1) When land revenue is collected independently of the enhanced crop-specific levy, the land revenue should be deductible from the enhanced levy payable.

(2) Actual land revenue paid is in most cases far lower than the maximum rates used to generate the revenue increase factors of Table 5. Thus the tax should not be expressed as a factor applicable to land revenue (12 times or 4 times at a 1 per cent rate of levy for example) but as an absolute amount obtained each year from the price at which the crop is sold.

(3) Because the crops selected for an enhanced levy in the first instance would consist of commercial crops, either traditional or sunrise, there is no need to apply a marketed surplus percentage to total production. But for food crops that will be necessary.

(4) Because the approach adopted here exempts in all years those cultivators not reaching the stipulated threshold, there is no further need to stratify the enhanced levy payable by soil quality. What matters is the yield attained. Soil selection is in any case implicit in the crops selected for an enhanced levy.

(5) The supplementary levy is applicable only to those farmers obtaining yields in any

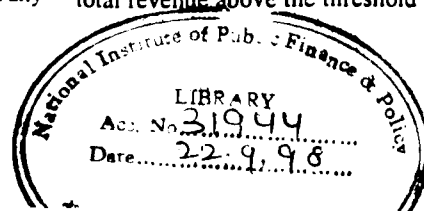
year above the stipulated thresholds. It is pointless to use numbers from the survey conducted here to generate the percentage of cultivators falling above the threshold. For this percentage would vary from year to year.

VIII Summary

An important finding of general validity emerging from the field survey is that there is prima facie evidence of vast differences in the surplus of total revenue over total variable cost between crops, and that these coexist in equilibrium because of supply-side entry barriers in terms of the required soil and irrigation requirements, and within this, further entry barriers such as the oligopsonistic market structure in seed propagation. That such differences are possible survives as a general finding beyond the specifics of the particular region and crops surveyed.

Given such wide disparities between the profitability of different crops, it is entirely justifiable to have an enhanced land-based levy on a few selected crops, and not on others. Discrimination of this type has however to be properly substantiated and this is where the contribution of the present study lies. The object of the study is not to offer a definitive list of taxable crops, but to advance an approach by which to establish the taxability of agricultural activities not covered by standard cost of cultivation surveys. *Unless a beginning is made in a discriminatory, sequential crop-specific manner towards the tapping of agricultural surpluses for the local financing of agricultural infrastructure, any improvement in rural levels of living will remain dependent on uncertain transfers from higher levels of government, themselves constrained by the large compliance crisis in the country.*

When the surplus over total variable cost as a percentage of total revenue is plotted against yield, there is in the case of the two seed propagation crops a distinct threshold yield beyond which the surplus stabilises as a percentage of TR. Thus, there is a fortunate convergence between the requirement of stable norms for presumptive purposes, and the requirement of a taxable threshold for exemption of crop failure, whether idiosyncratic or non-idiosyncratic. After addition of fixed costs, we obtain taxable income as a percentage of total revenue at the endogenously generated threshold yield. This percentage can then be applied to total revenue at the threshold yield to generate the crop-specific absolute tax liability. The scheme suggested here trades off simplicity at the expense of some regressivity among cultivators falling above the threshold yield. A levy specified at a uniform percentage of total revenue above the threshold would be



more equitable, but will require information on the exact quantum of yield obtained by each cultivator and therefore will be harder to enforce.

The yields observed in the sample surveyed, when juxtaposed against other field evidence, seems to support the fear that there has been a secular decline in yields from dryland farming in particular. The corrective action that is called for in order to stem and eventually reverse the decline in yields, whether it calls for better ground-water management or better management of common grazing land, can be effectively performed only at the panchayat level of governance. And it is for the strengthening of this very level of governance that the presumptive tax on agricultural income is proposed. Since the tax is grounded squarely and explicitly on the present reduced yields, there is no danger that it will overestimate present-day ability to pay. Eventually, with agricultural income having been raised by the productive use of the initial tax revenues, the tax could be further enhanced for subsequent rounds of improvement to agricultural infrastructure. The link between improved local infrastructure, in particular better watershed management, and higher agricultural productivity, once established, will both improve willingness to comply and expand the set of crops on which an enhanced land-based tax may be levied.

Notes

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- 1 As modified by the annual Finance Acts enacted after the central budget of every year.
- 2 The Report of the Raj Committee [Government of India 1972] mentions three other states: Maharashtra, Meghalaya and UP. Maharashtra has since abolished it. Meghalaya continued the Agricultural Income Tax Act of Assam of which it was previously a part, but no revenue was collected since there were no plantations in Meghalaya. The UP Act was replaced by the Vrihat Jot Kar Act of 1962 on large landholdings exceeding 30 acres. This was an *ad valorem* levy on the annual value of land, determined by application of specified multiples to the rental value of land. Although the multiples varied with respect to class of land, the levy was more in the nature of a property tax than an income-based land tax.
- 3 However, confinement to plantation crops was not necessarily always the case: see Chapters II and III of Rajaraman-Bhende (1997).
- 4 In the years 1990-93, aggregate land revenue collected by all states was of the order of Rs 600 crore per annum, and the agricultural income tax yielded of the order of Rs 150

crore. In 1993-95, however, revenue from the agricultural income tax declined to around Rs 100 crore, and land revenue increased sharply to the neighbourhood of 1,000 crore (*Indian Public Finance Statistics 1996*; Table 3.2). In Karnataka however the agricultural income tax has displayed exceptional buoyancy since 1994-95 (see Section V).

- 5 The most recent statement is perhaps that by Ahmed-Stern, 1989. The lone dissenting voice seems to have been that of Gandhi, 1966, who cautions against inferring replicability from the efficiency outcome of taxation of agriculture in Meiji Japan, because the initial conditions obtaining there in the form of widespread irrigation may not exist elsewhere.
- 6 District planning committees have been mandated under the 74th Amendment to co-ordinate urban and rural development at district level.
- 7 Although it does not eliminate the burden on the current generation resulting from capitalisation effects of the land tax.
- 8 "Presumption is an alternative to taxation based on self-declaration. There are three features that distinguish presumptive approaches: assessment of taxability independently of self-declaration; the identification of objectively measurable indicators specific to each sector or economic activity and the use of these to establish not merely taxability, but also the taxable income generated per unit of the chosen indicator/s; the need for robust survey-based norms linking taxable income to these observed indicators" [Rajaraman 1997:128]
- 9 Given the average regional crop yields used for the computation of taxable income, this translated essentially into region-specific thresholds in terms of size of holding. The holding threshold would vary also by cropping pattern between cultivators, and over time for any cultivator.
- 10 Agricultural property was included in central taxation of wealth between 1970 and 1981, subject to an exemption threshold and exclusion of the value of growing crops. Between 1981-83, taxability was confined to plantation property alone. After 1983, all agricultural property has been exempt. During the entire period 1971-83, when agricultural property was taxable, the wealth tax was payable only by individuals and not by companies. Thus, the revenue yield from taxation of agricultural property remained negligible. Proceeds from sale of agricultural land and property were liable to the capital gains tax between 1961-70, but excluded thereafter except for property falling within an 8 km radius of municipal boundaries.
11. This paper does not provide details on the present basis of determination of land revenue rates in the different states. However, such information as of 1972 is available in the Raj Committee Report. The basis of rate determination and even the rates themselves are most unlikely to have altered since.
- 12 Maharashtra and Madhya Pradesh, according to information in the Raj Committee Report.
- 13 The AHT was to be supplemented with a tax on agricultural property and a tax on capital gains arising out of transactions in such property. Gains from transactions in assets held for not more than a year were to be treated as ordinary income and taxed accordingly.
- 14 Because self-declaration carries particularly low possibilities of verification in the case of agricultural income. In the words of the Tax Reforms Committee, partial integration "has not served much purpose"; see also Pandey (1991a), Lakhotia (1993).
- 15 We are indebted to T R Sathishchandra for pointing this out.
- 16 The criterion for grouping is not clear. The report suggests either rateable value, or crops showing a "high degree of local concentration", although it does not follow that the latter should necessarily be similar in terms of rateable value.
- 17 Other modifications suggested were fixation of norms on the basis of averages of output for five years (instead of the ten-year average suggested by the Raj Committee); milder progressivity; and taxation on the basis of ownership rather than operational holdings.
- 18 The Haryana state government made an effort to implement a form of AHT, but the Haryana version was quite different from the system recommended by the Raj Committee. At the present time, Haryana has repealed even the land revenue, one of the few states to have done so.
- 19 Crop failure was defined as "less than half the norm established on the basis of average output of the earlier 10 years" [Raj Committee 1972:34]. The Bagchi scheme also carried a provision for "full or partial remission, as may be required, in exigencies like floods and drought" [Bagchi 1978:1635].
- 20 The Karnataka Zilla Parishads, Taluk Panchayat Samitis, Mandal Panchayats and Nyaya Panchayats Act.
- 21 The Committee does not report the percentage shared or the formula used.
- 22 Panchayats were also given revenues from a 3 per cent surcharge on stamp duty on transfers of property.
- 23 Section 117 of the Karnataka Act reads as follows: "If during 30 years immediately preceding the date on which the settlement for the time being in force expires any improvements have been effected in any land by or at the expense of the holder thereof, the increase in the average yield of crops of such land due to the said improvements shall not be taken into account in fixing the revised assessment thereof."
- 24 All crops occupying not less than 20 per cent of the total gross cropped area and cash crops occupying not less than 5 per cent of the total gross cropped area. As a working rule crops whether cereal or non-cereal together occupying at least 66 per cent of the total gross cropped area in a group are taken into account.
- 25 Land irrigated by major irrigation schemes is also classified as dry, but does not get the 10 acre exemption.
- 26 These and other estimates which follow are from chapter 9 of a classified 1991 Report of a Commission on state Finances of the Government of Karnataka.
- 27 The rates in a few zones were notified only in 1976, because of modifications to the initial revision.

- 28 Additional considerations listed in Section 116 of the Karnataka Land Revenue Act, 1964 are:
- Marketing facilities,
 - Communications,
 - Standard of husbandry,
 - Population and supply of labour,
 - Agricultural resources,
 - Variation in the area of occupied and cultivated lands during the previous 30 years,
 - Wages,
 - Ordinary expenses of cultivating principal crops including the wages of the cultivator for his labour in cultivating the lands,
 - Sales of lands used for purpose of agriculture.
- 29 This classification applies only since the Act of 1964. Kumar says that historically wet lands were those irrigated by public waterworks, such as government canals or village tanks; dry lands were not so served, but might be irrigated by privately-owned wells; and garden lands were 'improved' lands [Kumar 1982:219]. However, the Raj Committee report says that in Karnataka, prior to the Act of 1964, dry land was unirrigated and wet lands were those irrigated from government sources; implying that garden lands were those privately irrigated [Government of India 1972:149]. This classification is orthogonal to that of Kumar in respect of the dry and garden categories.
- 30 There is no explicit attempt made to compute net profit realised by the cultivator, or to relate this to yields.
- 31 There is no clear indication of the lowest value land can have and still be declared arable: possibly 3 annas or 19 per cent (Karnataka Revenue Survey Manual; II(2):10).
- 32 In some zones the maximum rate is to be found in group I, in others the group I rate is the lowest, and the variation across groups is not always monotonic.
- 33 In Coorg state, subsequently merged into the present Karnataka state, an agricultural income tax was introduced in 1951.
- 34 The rates applicable to those classes not opting for the composition scheme with effect from April 1, 1997, as proposed in the state budget of 1997, vary between taxpayers. Registered firms pay a flat 40 per cent; companies pay 30 per cent up to Rs 1 lakh; 40 per cent up to 5 lakh; and 50 per cent beyond that. Individuals have an exemption limit up to Rs 40,000, and slabbed rates going up to a maximum of 30 per cent for income exceeding Rs 75,000.
- 35 Called a 'compounded rates' scheme, it is specified in slabbed rates per hectare but is confined to plantation crops. For those not opting for the compounded rates scheme there is a plantation tax in addition to the agricultural income tax which applies, also on a crop-specific basis per hectare above specified exemption acreages, where the acreage is determined not by direct physical measures but by dividing the number of trees/shrubs/vines by standard measures of density per hectare.
- 36 These yielded a sample of 16 for tomato seed propagation, 13 for sunflower seed propa-

gation, and 10 for intercropped chillies-cotton (some cultivators grew both tomato and sunflower).

37 Calculated separately for each taluk.

38 The relevant category is garden land for tomato and sunflower; dry land for chillies-cotton. The region studied lay in zone V of Dharwar district, with the exception of one taluk (Hirekerur for seed propagation) which lay in zone IV. Since the zone V garden land rates are much higher than zone IV rates, these are the ones used. It will be recalled that actual rates of land revenue paid are in general much below the standard rates of Table I (see notes to the table).

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