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ELSEVIER

Agricultural Economics 24 (2001) 315–328

AGRICULTURAL
ECONOMICS

www.elsevier.com/locate/agecon

Agricultural taxation in developing countries: a survey of issues and policy

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Received 8 December 1998; received in revised form 15 March 2000; accepted 10 April 2000

Abstract

This study surveys the experience of agricultural taxation in developing countries in the context of the ongoing policy debate about the tax structure and administration affecting agricultural producers. Using the examples of a number of countries, it analyzes the conceptual and practical problems associated with different tax regimes. Governments in most countries have reduced indirect (export) taxes on agricultural producers. However, the revenue from direct taxes on farmers has not increased. A major problem in most countries has been the measurement of (actual) agricultural income. Different measures for presumed income have been used with varying success. They seem to have the most potential for increased revenue in many countries, but their effective implementation is constrained by the political and administrative considerations. © 2001 Elsevier Science B.V. All rights reserved.

Keywords: Agriculture; Agricultural taxation; Developing countries

1. Introduction

This study focuses on the experience of agricultural taxation in developing countries in the context of the ongoing policy debate about the tax structure and administration affecting agricultural producers. It will not analyze in any depth the structure and impact of implicit taxes on the agriculture sector; a discussion of indirect (explicit) taxes will be included because of their impact on government revenue. Agriculture is an important sector in most developing economies for sustaining industrial growth and reducing rural poverty. Generally, governments have taxed the sector heavily through the price and distribution systems and on its exports, to transfer a substantial portion of the agricultural surplus to industry (urban areas), and

raise revenue. There is good evidence that this policy has reduced agricultural growth. This study shows that there are many different options to tax agriculture directly that can maintain both incentives and equity and generate substantial revenue. This survey also highlights the serious problems associated with some of the direct tax policy options, including the power of the rural elite, selection of the tax base and tax administration.

Two important caveats should be kept in mind in assessing the implications of this study. Firstly, the tax structure and its administration are often part of a specific cultural, social, political, and economic milieu and they change with new demands and requirements of the society and economy. Secondly, the literature on direct taxes on agricultural producers, in terms of the specific information on tax structure and tax administration in developing countries, is both limited and hard to access.

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2. Direct and indirect taxes on agricultural producers

Governments have taxed agricultural producers to (i) generate revenues to finance government expenditure; (ii) transfer resources (agricultural surplus) to nonagricultural sectors; (iii) promote efficiency and diversification of agricultural production; and (iv) redistribute incomes within the agriculture sector. There are at least four problems with agricultural taxation in most underdeveloped countries. Firstly, there are too many and contradictory objectives of taxation. Secondly, the priorities among objectives are not well defined or transparent. Thirdly, some of the tax instruments have perverse effects on both efficiency and equity in the economy. Finally, there are serious political and administrative constraints.

The predominant objectives of agricultural taxation have been to generate government revenues and transfer a sizeable portion of the resources from agriculture to the rest of the economy. These objectives were rooted in the strategy of development adopted by governments after the end of World War II; rapid capital formation for industrial growth by extracting agricultural surplus through deliberate and systematic government intervention. The arguments for the high level of tax on agriculture and by now the adverse consequences are well known (Krueger, 1992; Schiff and Valdes, 1992; Valdes, 1996; World Bank, 1997). A large part of the tax burden on agricultural producers has been due to implicit taxes, including overvalued exchange rates, non-tariff barriers, import tariffs, and procurement programs (monopoly marketing) affecting output prices. These policy instruments have induced income transfers between sectors and income groups and distorted resource allocation without producing revenue, except as profits of marketing boards or procurement agencies.

The explicit taxes on agricultural producers include (i) direct taxes on income — actual or presumed, persons (heads), and personal movable and immovable wealth or property (especially agricultural land) and (ii) indirect taxes such as sales taxes (GST, VAT, turnover tax), excises, stamp duties, cesses on specific products, customs duties, and export taxes. Direct taxes generate revenues without inducing intersectoral resource transfer, although some of them can be shifted (such as land tax) under certain circumstances.

Indirect taxes also raise revenues but induce intersectoral and interpersonal transfers since they can be shifted to consumers and producers.

Direct and indirect taxes, excluding implicit taxes, affecting agricultural producers in underdeveloped countries can be grouped as follows:

Direct taxes

1. Income tax
 - on actual income (schedular or global)
 - on presumed income (from land)
 - based on land area
 - on rental income (annual rental value or capital value)
 - value of gross or net income
2. Personal (or poll) tax
 - on individual or household
 - on livestock
3. Wealth and property tax
 - based on area with adjustments
 - based on capital (market) value
 - based on land improvements

Indirect taxes

1. Tax on domestic trade (GST/VAT and turnover tax)
2. Tax on foreign trade (import duty and export tax)
3. Excise on specific marketed products
4. Cess on specific marketed products
5. Stamp duty

Several combinations of direct and indirect taxes, using flat, proportional and graduated tax rates, are maintained, assessed and administered by different levels of government. The argument for and against the direct and indirect taxes can best be analyzed in the context of (i) revenue generation, (ii) efficiency and equity effects, and (iii) ease and cost of administration. It is almost impossible to get an optimal mix of taxes for several reasons. The tax objectives are neither well-defined nor necessarily consistent; there are major trade-offs between the tax instruments themselves; and the institutional capabilities for tax administration are a major constraint (Newbery and Stern, 1987; Ahmad and Stern, 1991; Bird, 1991; Burgess and Stern, 1993).

A major argument in favor of indirect taxes has been that they can generate significant government revenues and are relatively easy and inexpensive to administer. However, they can adversely affect efficiency and in-

tersectoral (and interpersonal) distribution of income since they can be shifted backwards and forwards. The extent of tax shifting depends on the elasticities of demand and supply. The tax-paying purchaser can lower the purchase price if the elasticity of supply is high and the elasticity of demand is low for the good or service; and the tax-paying seller can increase the selling price if the opposite holds. In many developing countries, agricultural producers do not face sales taxes on their products sold in the domestic market, although there may be excises and cesses. The excises (as consumption tax) are imposed on a limited number of products to generate sizeable revenues; the cesses are targeted at major exportable agricultural products and their revenues are used to improve the production and productivity of the exportables. Since the export tax on agricultural products has been a major source of government revenue and affected farmers' incentives, it has been discussed extensively in the literature (Skinner, 1991, 1993; Hoff, 1993). Farmers are affected by import duties on some of the intermediate goods they purchase like machinery, fertilizer, pesticides, etc. However, the overvalued exchange rate and subsidies on farm credit and energy products tend to offset the effect of the tax.

Direct taxes on agricultural producers are not as easily shiftable as indirect taxes, although the land tax can be shifted to tenants or lessees if (i) the land market is not competitive; (ii) the supply of land is relatively limited; and (iii) the tenants and workers are not well organized. The income, personal and wealth taxes can affect marketable surplus and labor supply. It has been argued, but not without contest, that a well-designed land tax may increase efficiency and improve equity as well (Strasma, 1987; Skinner, 1991). The major problem with direct taxes is that they face strong and vocal opposition, are hard to assess, and quite expensive to enforce and administer. Some of the opposition to direct taxes is because (a) there are too many hidden and indirect taxes; (b) expenditures and benefits are not visible to tax payers; and (c) the tax administration is corrupt or graft-ridden. The earned incomes in agriculture are hard to measure for well-known reasons. Firstly, a large part of the agricultural production is done on a small scale. Secondly, a substantial part of the output is consumed and not marketed. Thirdly, no records are kept for cost of inputs, quantity of outputs, and marketed output.

Fourthly, there is a multiplicity of land tenures, complicating distribution of shares in outputs and inputs. Finally, the cost of verification of actual income is very high. Governments have, therefore, relied on determining presumed income based on agricultural land and its return (income) like the average gross or net value of output, area of land alone or adjusted to some (objective) indicators of its productivity or production potential, rental or discounted market value of land. Governments at different levels have also used land value as the basis for (net) wealth and property taxes.

Finally, there is the issue of taxation authority and administration. In almost all countries, taxation authority is divided between different levels of government comprising the national (federal), state (provincial) or regional and local (municipal) governments. Usually the highest (national) level of government imposes the implicit taxes. However, explicit taxes are enforced (administered) and collected in a wide variety of ways, depending upon the constitutional and legal division of fiscal powers between different levels of government (Shah, 1994). Often the national (federal) government exercises considerable control on tax revenues and their distribution to the lower levels of government. The administrative structures for the assessment and collection of taxes suffer from lack of co-ordination, inadequate resources, and inefficient and poorly paid staff (de Jantscher and Bird, 1992).

3. Level and structure of taxes on agricultural producers

Economic diversification in many developing countries has reduced the direct contribution of agriculture to GDP, although the share of agricultural products in export earnings remains quite significant (Table 1).

Table 1

Region	No. of countries	Share of agriculture (%)	
		GDP	Exports
Sub-Saharan Africa	9	33	42
Asia	9	25	23
Middle East and North Africa	6	16	16
Latin America	11	11	36

In a group of 35 countries, the share of agriculture in GDP ranges from 11% (Latin America) to 33% (sub-Saharan Africa), but its share in total exports is much higher, ranging from 16% (Middle East and North Africa) to 42% (sub-Saharan Africa).

Any discussion on agricultural taxation must take into account the natural (soil and water) institutional (land tenure), market, and technological conditions in which farmers earn their incomes. While these conditions vary a great deal among developing countries, and within each country, there are some important common features. In many countries of Asia and Latin America, a vast majority of agricultural producers that depend on small parcels of land, owned or rented, family labor for their income co-exist with a small number of income earners own or control a high proportion of land and other assets using hired labor or tenants. The enclaves of plantations and commercial farms may occupy a small proportion of the land, but produce a large proportion of the marketed surplus both for domestic and foreign markets. Most of the input, credit and product markets are dominated by large landowners or commercial farmers and the small farmers enjoy limited access to markets and public sector goods and services. The development of a cash economy in most countries has increased the dependence of the small-scale peasants, owner cultivators, tenants and the landless workers, on markets for inputs and outputs alike. However, most agricultural producers have little agricultural land and other assets and earn low levels of income in kind and cash.

There are serious data problems on the issue of explicit (direct and indirect) taxes paid by farmers in developing countries. For one thing, the national tax data are not classified by source or sector. Also, the tax data are incomplete since they do not include the taxes assessed and collected by state and local governments. However, agricultural taxation studies for some countries reveal interesting trends in recent years.¹ Firstly, direct taxes on land and income have contributed 0–20% of the total agricultural tax revenue and the rest from taxes and duties on the marketed agricultural products in domestic and foreign markets. Secondly,

the tax burden, defined as ratio of the share of agricultural taxes in the total tax revenue and share of agriculture in GDP $[(T_a/T)/(VA_a/GDP)]$, on farmers has been lower than other groups. Also, this burden has fallen significantly in the last 20 years (Habito and Manasan, 1992; FAO, 1993). The relative fall in taxes paid by farmers has been due to reductions both in direct (income and land taxes) and indirect taxes (export duties).

3.1. Indirect taxes on agricultural producers

In most developing countries, governments have relied heavily on taxation of marketed agricultural products. A major reason has been their inability to raise substantial revenues from direct taxes on incomes and wealth (land). As stated earlier, there are three types of taxes on agricultural products traded in the domestic markets, general sales taxes, excises and cess, and two types of taxes for products traded in the international markets — export and import duties (Goode, 1984; Due, 1988). In some countries, there have been quantitative restrictions on the agricultural exportables and importables to protect the interests of domestic consumers and producers. However, these restrictions seem to have been reduced significantly as part of the IMF/World Bank structural and sectoral adjustment programs in the past decade (Valdes, 1996; Meerman, 1997). The burden of indirect taxes on agricultural producers in many developing countries has fallen in the last decade due to (i) diversification of the economic structure and exports as less of the total output is produced in agriculture and (ii) reduced levels of taxes on exportables and importables.

3.1.1. Taxes on products traded in domestic markets

The taxes on agricultural products marketed in domestic markets include the general sales tax, excise and cess. Generally, governments exempt the marketed raw material and food from the general sales tax, except in a few countries of sub-Saharan Africa. There are two main reasons for this. Firstly, most of the unprocessed agricultural products are food items considered as necessities; in exempting them, the government is trying to mitigate the regressivity of the general sales tax. Secondly, a large proportion of the agricultural producers is geographically scattered and sells its produce in small volumes. However, in many countries of sub-Saharan Africa, Asia and Latin America,

¹ This subject has not been well researched, except for some studies on land taxes in Latin America and Asia. The FAO (1993) has published seven country studies with an additional volume containing a general analysis.

there are marketing taxes, levied by local (municipal) governments on agricultural products to finance local expenditures. These taxes are primarily aimed at farmers bringing their produce to urban markets and levied by local governments either at the point of entry into an administrative boundary (city or town municipality) or in an organized market center. The so-called *octroi* charges in South Asia fall into this category.

In many countries, an 'earmarked' levy (cess) is paid by farmers on marketed cash crops and its revenue reserved for improvement of the production and marketing of those products. This tax has been used extensively by governments on a variety of export crops: coffee, tea, rubber, palm oil, coconut, cocoa, jute, and cotton. The cess revenue is designed to finance subsidies for the development of the marketed (exported) crop. Earmarking is an extension of the beneficiary principle: it provides a direct link between the tax paid and the use of goods or services in return. Those benefiting from the cess, in the form of input subsidies, research and marketing, see the earmarking of its revenue as a way to ensure that the services provided will not depend on the political and bureaucratic process of the general budget. On the other hand, earmarking tends to be inflexible in that the service requirement may have little relation to its capacity to generate the revenue. Agricultural cess is regulated by the state or provincial governments in several sub-Saharan African and Asian countries, including Tanzania, Kenya, Zimbabwe, Ghana, Nigeria, Philippines, Malaysia, Sri Lanka, India, and Pakistan.

3.1.2. *Taxes on products traded in foreign markets*

Customs duties have historically been the oldest form of indirect taxes. Taxes on exported and imported products have traditionally been a major source of government revenues in many developing countries. Agricultural producers have been affected by export taxes on most food and fiber crops and livestock products and import duties on agricultural inputs, such as machinery, fertilizer, seeds, and pesticides. In many countries, governments have maintained differential rates of customs duties to protect domestic producers and consumers and provided export tax rebates as incentives for promotion of certain kinds of agricultural exports.

Export taxes on agricultural goods have been used as a major source of government revenue since the

colonial times. Several arguments have been advanced in favor of export taxes on agricultural products (Hoff, 1993; Skinner, 1993). For example, they can (i) act as substitutes for income and land taxes since the latter are politically and administratively far more difficult to assess and collect; (ii) provide substantial revenues on a stable basis; (iii) stabilize prices for producers and consumers; (iv) limit export to take advantage of imperfections in the world market; and (v) they can diversify production if applied rates vary among exports. However, export taxes have at least three major disadvantages. For example, they can (i) reduce output of exportables and income of exporters; (ii) distort resource allocation; and (iii) transfer incomes from foreign consumers and domestic producers to domestic consumers (Goode, 1984; Due, 1988; Schiff and Valdes, 1992; FAO, 1993). The tax burden on exports can be shifted depending on conditions in the domestic and foreign markets.

Export taxes have been levied on selected primary products, tea, coffee, cocoa, sugar, rice, groundnuts, vegetable oils (soybeans, palm and coconut oil), rubber, cotton, jute, sisal, tobacco, fruits and flowers, and livestock and its products (hides, wool, etc.), with relative inelastic supply and demand and a large share of the world market. In most developing countries, governments have moved from specific (flat or graduated) rates to ad valorem duties, applied differentially by products, on the f.o.b. values of exports. This change has posed very serious problems of tax evasion and under-invoicing. Many countries, particularly in sub-Saharan Africa have, therefore, resorted to the establishment of 'minimum export prices'.

The contribution of export taxes to the total tax revenue in most developing countries has fallen significantly since the mid-1980s. In almost all Latin American countries, export taxes have disappeared, except for the nominal incidence in Costa Rica and Mexico. In fact, in most Latin American countries, governments have tended to 'protect' some of the agricultural exportables (Valdes, 1996). In Asia, Malaysia is the only country with a significant level of export taxes. In sub-Saharan Africa, export taxes are significantly high in quite a few countries, including Cameroon, Ghana and Guinea. In the Middle East, Syria is the only country in which export taxes contribute one-fifth of the customs duties. Several studies, including the FAO (1993) case studies of 16 countries have highlighted at

least three important issues. Firstly, export taxes have reduced the domestic price and output of exportables. The argument is that without them there would have been increased exports and reduced domestic consumption. Secondly, the small-scale producers have borne a larger share of the tax burden than the large-scale producers. Thirdly, in several countries, governments have extended tax incentives, export tax rebates and reduced taxes on imported inputs, to promote 'non-traditional' primary exports. This tax discrimination has led to the reallocation of resources and diversification of agriculture (FAO, 1993).

The high levels of import duties and quantitative restrictions have been one of the most important policies in most developing countries to raise government revenues and protect domestic producers. Agricultural producers are affected by import duties on inputs like fertilizers, machinery, pesticides, and seeds. If there is no domestic production, import duties raise the input price and reduce its use or consumption. If there is domestic production, then import duties subsidize domestic producers. The aggregate data, the revenue from import duties, do not reveal the extent of taxes paid by agricultural producers. There is, however, evidence that high level of import duties on agricultural inputs, mainly to protect local producers, have discouraged the use of some inputs and affected the relative welfare of farmers (FAO, 1993). In many countries, governments have either exempted from import duties or imposed low levels of import duties on agricultural inputs to encourage technological change. Two general comments, based on available evidence, are relevant here. Firstly, the levels of import duties on products used by farmers in a majority of countries have been far lower than on other products. Secondly, governments in all countries have generally lowered the import duties as part of the trade liberalization policy under the World Trade Organization (WTO) agreements and the structural adjustment programs since the mid-1980s.

3.2. *Direct taxes on agricultural producers*

Direct taxes take three forms: (1) income taxes on individuals or households and businesses (corporate entities), (2) personal or poll taxes on individuals and their livestock and huts, and (3) wealth taxes on the net worth, urban and rural property, inheritance, gifts,

and estates of individuals and businesses. The important point is that taxes on income and wealth best accord with the ability to pay.² However, income tax comes closer to this principle since it can take account of the taxpayer's needs as reflected by personal circumstances. Wealth has become a supplementary base for the ability to pay. Historically, wealth tax, together with some form of consumption taxes (customs duties and excises), existed long before income tax. In fact, the oldest direct tax in most societies of Asia, Middle East and Europe, was the land tax, either based on land area or some measure of the value or quantity of output from land. The reason simply was that land was the most important asset producing most of the income for the landowner or cultivator. In the societies of sub-Saharan Africa, where agricultural land was owned and cultivated on a communal or tribal basis, taxes have been imposed on adults in the household and/or the number of livestock held by the household.

In the context of direct taxes on agricultural producers in developing countries, three observations must be underscored. Firstly, agricultural land is still the main basis used by governments to collect income and wealth taxes from agricultural producers. Secondly, the tax revenue from land has become a very small proportion of the total tax revenue, except in some countries where the local governments can collect significant revenue from property tax on agricultural land. Thirdly, the evidence in many countries of Asia, Latin America and the Middle East and North Africa is that there is a high level of concentration of income and wealth (land in particular) in the agriculture sector. Most of the agricultural producers earn low incomes and have little agricultural land. The relatively small contribution of agricultural producers to direct taxes is due to many factors, including intense political resistance by large landowners; high cost of administration (verification of income and wealth, assessment of tax liability, and collection of taxes); low level of public sector investment and poor services; and the existing (perceived or real) burden of implicit taxes.

² There is considerable debate on the relative merits of (direct) taxes on income and wealth and (indirect) taxes on consumption (Goode, 1984; Newbery and Stern, 1987; Burgess and Stern, 1993). This debate reflects not only different views on the efficiency and equity effects of these taxes but also their relative advantages in administration.

3.2.1. *Agricultural income tax*

The tax on personal income can be classified as schedular, global or mixed. In the schedular system, each of the major income flows, salaries and wages, dividends, rent, and profits, is subject to a different tax base and rate. The global income tax is imposed on income aggregated from all sources, after personal exemptions, deductions, etc., on the basis of a single rate or graduate rates. The special advantages of income can be obtained only in the global income tax. Most tax systems combine the schedular and global concepts. Governments in many developing countries have followed the lead of developed countries in shifting towards global income tax, although special provisions are kept for different sources of income.

In a vast majority of underdeveloped countries, governments impose taxes on agricultural income, but they face serious problems in determining income and reaching the income earners. In fact, in the public finance literature, there is considerable debate about the concept of income to which the tax should be applied (Tanzi and de Jantscher, 1989; Tanzi, 1991). In theory the criterion of equity, ability to pay, is best served when actual (ex post) income of the individual is used as the basis for tax. However, there are some valid concerns about the use of actual income as the base for tax. For one thing, policymakers and economists have been moving away from taxing income to consumption because of concern about the effect of income tax, particularly with high marginal tax rates, on work effort, saving, risk-taking, etc. (Tanzi, 1991; Burgess and Stern, 1993). In addition, there are equity and administrative considerations in favoring the use of presumed income as the base for taxation. There are two possible sources of inequity. Firstly, the use of actual income does great injustice to the individual who cannot hide or evade his/her income while another individual can. Secondly, the income tax laws exempt imputed income of assets used by the taxpayer, which can lead to the underutilization of some resources. The administrative problems in determining the actual income and assessing the tax liability are often enormous, especially for taxpayers that keep no records or two sets of records.

3.2.2. *Tax on actual income*

In developing countries, taxation of actual income from agriculture is constrained by several well-known factors. The income tax laws in a vast majority of

developing countries do not, however, exempt agricultural income from taxation. The few exceptions include countries like India and Pakistan. In both countries, the central (federal) government has no constitutional power to tax income from agriculture, although the state (provincial) governments can impose and collect these taxes. In those countries that have adopted a largely global income tax system, farm incomes either fall below the limit of exemptions or deductions or the incidence of tax evasion is very high. The examples include Malaysia, Indonesia, Philippines, Sri Lanka, Thailand, Nigeria, Ghana, Kenya, and Malawi, Mexico, Chile, Colombia, Argentina, Bolivia, Uruguay, Venezuela, Morocco, and Tunisia. Governments have, therefore, put most of their resources and personnel to assessing and taxing incomes from nonagricultural activities simply because of the high administrative cost involved in chasing a very small base of taxpayers. In some Latin American countries, the Central governments allow farmers to elect one of two tax options: (i) tax on (net) actual income or (ii) tax on presumed income usually linked to the market (capital) value of agricultural land.

The problem is that the actual income from agriculture is very hard to determine or verify directly, except for the organized large-scale estates and plantations owned by individuals or business companies. While the aggregate income tax data do not reveal the precise share of the incomes derived from the organized commercial agriculture, the general impression in most countries is that the share of agricultural producers is far less than the estimated incomes (FAO, 1993).

3.2.3. *Tax on presumed income*

Governments in most underdeveloped countries have serious problems with regard to the estimation of income of hard-to-tax taxpayers. Presumptive tax is a means by which governments have tried to overcome their administrative weaknesses in levying direct taxes on actual income (Tanzi, 1991; Shome, 1995). It can be used as a proxy for (i) an income tax on small businesses, farmers, professionals and other hard-to-tax groups and (ii) indirect taxes (e.g. Morocco, Tunisia, Turkey, and Pakistan). The main advantage of presumptive taxation is that it may be the only effective way to tax the income of people engaged in many sectors or activities. Although the revenue per taxpayer is generally low, the tax may

have substantial spillover benefits in facilitating the move from informal to formal sector and providing information to reduce tax evasion. If used properly, the presumptive tax can broaden the tax base by increasing the number of taxpayers and their payments at a low administrative cost. The costs of determining presumed income (based on one indicator or another), assessing the tax liability and tax collection should not, however, be underestimated in the case of agricultural producers.

The tax on presumed (personal) income from agriculture is in reality a tax based on land owned or cultivated by an individual or household. The tax liability can be attached to either the land parcel owned or controlled by an individual or household or to the person (household) who owns or cultivates the land. In most countries, presumed income is linked to the person who owns land and not the parcel of land. But this raises several problems. Agricultural producers (farmers) can earn income, individually or jointly, in at least four ways: (i) self-cultivation of owned landholding; (ii) cultivation of the land leased or rented from someone else on a fixed rent or sharecropping basis; (iii) renting out land to others (sharecropping tenants or lessees); and (iv) nonagricultural professions, services, businesses. Even if the land records are authentic and verifiable, it is difficult to verify the extent of landownership of an individual since it may be spread in different parts of the country. Also, landholdings are often cultivated and managed jointly within the family.

Since agricultural land is the basis on which the presumed income tax liability for agricultural producers is determined, it is important to look at the various forms in which the land tax system has been evolved and administered (Bird, 1974; Strasma, 1987; Skinner, 1991). Land taxation has been considered, at least in the context of developing countries, an important tool to achieve two important non-revenue goals: (i) better use or improved production efficiency of land and (ii) land reform through break-up of large landholdings. In theory, the effect on productivity might hold only if there was no or low level of tax on marketed product. At a sufficiently high level of land tax, landowners may work harder or seek better methods of production. But the income effect of land tax in theory decreases or increases efficiency depending upon how much it affects the consumption level of farmers. A high level of land tax may also reduce speculation in

idle land. The tax may, however, decrease the price of land only one time, but the incentive for future speculation would remain. In practice, there is no evidence that land tax in itself has increased land productivity or improved the use of land (Strasma, 1987).

It has also been argued that progressive and high rates of land tax on large holdings could force the owners to break-up their holdings into small farms. But the experience, especially in Latin American countries (e.g. Colombia), is that these attempts have been unsuccessful (Bird, 1974; Strasma, 1987). Land taxation can be a good complement to land reform in that it would encourage proper cadastral surveys and land records and reduce the cost of land. As long as the effective rates of taxation are low and the collection effort is weak, the land tax will fail to achieve even its revenue goal, as has been evidenced in many developing countries.

Land as a base for taxation poses serious administrative problems since the cadastral information about location, area, quality, market or rental value, and ownership must be determined before the tax can be assessed and collected. Landowners have no incentive to reveal what kind of land and how much they hold. Government must spend real resources to prevent the landowner from misrepresenting the area and quality of land, hence avoid paying the tax. Since the resource cost of administering the tax does not generally provide a directly productive service, it is an efficiency cost. In fact, this efficiency cost may be higher than the efficiency cost of an export tax (Bird, 1974; Strasma, 1987; Skinner, 1993).

3.2.4. Tax on land area

The *in rem* tax based on land area alone has very minimal cadastral requirements, establishes the location and size of the land parcel, hence is easy to administer. Incomplete land records and low rates of taxes can encourage farmers to pay the tax since it establishes their land right. Since it is a lump sum tax, not based on the output (yield) of land, it may force the owners to improve the use of land, particularly if the tax rate is graduated. However, a graduated tax, based on area, can lead to evasion and deception. There are several disadvantages of the pure site tax. Firstly, the tax burden as a fraction of land value would be negatively related to productivity of land, hence it might fall proportionately more on the poorer farmers if they

own less productive land. Secondly, the revenue potential on the in rem tax is limited by the maximum acceptable tax burden on the least productive land. Thirdly, the tax has no relation to the landowner. This type of tax, which in its pure form cannot be regarded as a tax on income from land, does not now exist in any part of the world.

In its most simple form, the land area tax is imposed at a uniform rate on each owner's landholding without taking into account the income-generating capacity of land. In some countries, lands are classified on a rough basis using soil type and source of irrigation. While it is perhaps the least costly and administratively manageable tax system, it does not act as a proxy for income tax. The land area tax is inelastic since it is not related to changes in productivity improvements and inflation. The crude area tax can be adjusted to changes in the price index and differences in productivity. The risk of inequity is inherent in the land area tax unless the rates change with the size of landholding or differ by land productivity. Of course, these adjustments increase the potential for tax evasion and raise the administrative costs. However, a land tax, either in lieu of or supplement to other taxes, with adjustments for availability of irrigation, quality of soils, on a flat or graduated rate per hectare is paid by landowners in several countries, including Bangladesh, Ethiopia, Malaysia, Nepal, Pakistan, and Sri Lanka. The purpose of these adjustments is to take into account the differences in the qualitative potential of land for income.

3.2.5. Tax on the rental income of land

The rental value concept is rooted in the Ricardian theory of rent. Rent is the difference between the yield of a parcel of land and the yield of 'marginal' land. Marginal land has zero rent since its yield is just enough to cover the production costs. However, for most agricultural land, it is almost impossible to differentiate between the effects of nature from nurture. So the rental value should be interpreted as "the payment that can be obtained in a competitive market for the opportunity to apply common techniques of agriculture to the cultivation of the land, taking into account its location and other inherent qualities as well as additional qualities it may possess as a result of past human action" (Bird, 1974, p. 150). The rental value of land can be expressed in one of two ways: a

rate of payment for the use of land during a given period (annual value) or as the present discounted value of the annual payments (capital value). In each case, the cadastral requirements and administrative costs can be quite high, depending on the complexity of the system and institutional capabilities (Strasma, 1987).

In the modern income tax system, the *annual rental income* is taxed on the basis of net rents, gross receipts minus expenses, declared by landlords. This is not, however, the case for taxes on rents from agricultural land in developing countries. These taxes are in the form of mass taxation imposed on all landowners because of the severe institutional and administrative constraints. In theory, there are two alternatives to determine the annual rental income for the land tax.

In the first method, the tax is imposed on the actual rents paid by tenants to landlords, with standard allowances for expenses, based on either individual or group basis. However, there are serious practical problems. The actual rental data can be very expensive to verify since the rental agreements cannot be accepted on face value. The rental contracts may be in kind and cash. The actual rents may vary significantly from 'normal' rents even in a small area or region. The land markets may not be active and competitive because of high land concentration, labor and credit market distortions. Finally, the tax collectors will have to standardize lands by soil type, crop, irrigation, etc. to establish appropriate rental rates (Bird, 1974; FAO, 1993).

In the second method, the tax officials have to estimate the income-producing capacity of each class of land, using a standard classification, and then to separate out the part representing the rental value. The land revenue 'settlements' developed by the British in India represent this method. The annual rental value here is based on the concept of 'net assets', value of gross output less than the normal expenses to produce that output, established for different classes in a revenue 'circle' for a period lasting for decades. The tax rate is then fixed as a certain (high) proportion of the value of net assets (produce) for a specified period. Every landowner in each revenue circle would be obliged to pay a specified tax annually (Titus, 1984; Shah, 1986).

The most important land taxes using a rental value concept are those based on the appraised *capital value* (or market value) at which land is being or can be sold. The tax on the capital value of land is an attempt

to reach in principle both current income and wealth, whereas the tax on the annual rental value tries to reach current rental income. These differences are important with regard to the economic effects of the base used for land taxes in developing countries. In many countries of Latin America, agricultural land is taxed on the basis of capital value not only as part of the property (wealth) tax applied to urban and rural areas but also in lieu of agricultural income tax. The capital value method, using the rental concept, requires that tax officials appraise the value of land either by reference to the prices at which land is being sold or according to established standards of appraisal and then to estimate the rental value on the basis of an assumed rate of return on the capital value. The problem is that in countries employing the capital value approach, the assessment practices are quite poor because of the lack of adequate land surveys and limited number of trained staff. Of course, as in the case of other methods of assessing tax on presumed agricultural income, infrequent revisions have resulted in limiting the tax base, hence the proportionate fall in the tax revenue.

The land tax based on the capital (market) value of land has been a major form of presumed income tax in many Latin American countries, starting from Uruguay, since the early 1960s. Its purpose was not only to generate tax revenue but also reduce the concentration of land and encourage improvement in land use. The experiments have not been altogether successful (Bird, 1974). Several problems have been associated with the presumed income tax based on the capital value of land. Firstly, the assumed rate of return (6–8%) on net wealth has no relation to either the income-generating capacity of land or the opportunity cost of the implied capital in land. Secondly, the rate of return has not been changed for long periods. Finally, the cadastral assessment of agricultural land (wealth) was not related to the market value. The fall in the land tax revenue has been due to several factors: the reassessment of net wealth has been erratic; inflation has increased the value of outstanding debts; and several concessions have been made to different interest groups.

3.2.6. Tax on the value of output from land

In many societies, states have historically claimed part of the produce from land, both in kind and cash,

as a tax from landowners. In recent times, this tax has been used as the basis for both property tax (e.g. Korea and Taiwan) and presumed income tax (e.g. Morocco and Uruguay). The concept of presumed income, based on a 'standard' or 'yardstick' measurement of the value of output from land, for taxation of agricultural producers is used even in countries like Italy and France. The *forfait* system for farmers in France is a standard yield method (Tanzi, 1991). Farmers below a certain level of net income can pay on the basis of *forfait*. In this system, the standard yields are established in different well-defined agricultural regions; gross value of production is based on official (market) prices; and normal expenses are deducted to get net income for tax. Each year officials of the national tax authority estimate the average net income per hectare for each type of farm activity in each agricultural region. To determine the tax liability of the individual farmer, this average is multiplied by the area allotted to different activities. The French *forfait* system for the agricultural income tax has several requirements for effective operation (Goode, 1984; Tanzi, 1991; Shome, 1995). Since these requirements can hardly be met in most developing countries, some governments have followed a modified *forfait* system using a group assessment method by regions or areas.

3.2.7. Personal or poll taxes

The so-called personal taxes have been the major form of direct taxes on agricultural producers in many countries of sub-Saharan Africa as an alternative to land and income taxes for two major reasons: much of agricultural land is communally owned and the income levels are generally low. These taxes exist under different names or forms, including the poll or head tax (labor tax on male adults), hut tax, cattle tax, minimum tax, native tax, and so on. Some of these taxes existed long before the arrival of Europeans as colonists in Africa, usually imposed and collected by tribal chiefs or some other communal authority. The poll tax is still quite common in many countries. Other forms of personal taxes, generally assessed or imposed by the central or state governments and collected by local governments, are based on the principle of ability to pay: size of the hut or residential building, number of (coffee) trees, size of the animal herd, size of vehicle, etc. No exemptions are allowed and the rates can be

progressive (Bird, 1974; IMF, 1981; FAO, 1993). Tax rolls are maintained at the state and local government levels.

A graduated personal tax was introduced in Uganda in the 1960s, followed by other countries in sub-Saharan Africa, Kenya, Nigeria, Tanzania, Zambia, in which the personal (presumed) income is estimated on the basis of crop income per hectare and livestock income per head multiplied by the total area and number of animals. The assessments are made by the local (tribal) committees, often headed by the chiefs, without making adjustments for land conditions, etc. These assessments often create serious disparities between regions and individuals. The tax rolls have not been updated and the tax rates have been kept low in 4–5 income groups. The revenue from these taxes has not kept pace with the government revenue from other sources so the base of revenue for local governments has seriously suffered in recent years (Strasma, 1987). In fact, the Central governments in most sub-Saharan African countries, more than in Asian and Latin American countries, have used indirect taxes, especially on foreign trade, as a major source of revenue.

3.2.8. *Wealth and property taxes*

Wealth consists of tangible and intangible assets (or properties) owned by individuals. In most countries, wealth taxes existed long before the modern tax systems were introduced, since wealth was far more concentrated than income and the latter was not easy to verify and assess for tax purpose. Two basic principles underlie the wealth tax: (1) benefits or services provided by the state (society) for the protection of property and enhancement of its value and (2) ability of the owner to pay the tax. The benefit principle is applied to the *rem tax* on the property payable by the owner. The ability to pay principle applies to the *in personam tax* on the net worth (properties) of the individual. Property tax is the most common of the wealth taxes and is generally assessed and collected by the state (provincial) and local (municipal) level governments. The tax on net worth (wealth) exists in some developed and many developing countries, particularly in Asia and Latin America, and is assessed and collected by the central and state (provincial) governments. While property and wealth taxes constitute no more than 3.5% of the tax revenue of the Cen-

tral government, they provide significant resources to the state (provincial) and local (municipal) levels of government in many countries. Further, if properly administered, they can constitute an important part of the total taxes paid by the wealthiest people in a country.

The two serious problems in the administration of wealth tax include (i) identification and location of the assets and (ii) estimation of their values. The easiest part of personal wealth to tax is real property like land and structures since it is visible and immovable. However, valuation of even real property is not easy: no two parcels or structures are identical or similar; market transactions of property may be limited and highly distorted; there is great risk of serious under-valuation of property whether based on self-assessment or official assessment. In spite of these problems, a simple, uniform and low-rate tax can be quite effective in meeting the revenue and non-revenue goals even in underdeveloped countries. However, the tax on net worth (or wealth) has been far more difficult to administer in most underdeveloped countries.

Evaluation of agricultural land for tax purposes has been discussed earlier in the context of taxation of potential income accruing to agricultural producers. The use of land area, with minor adjustments for differences in crops, soils, source of irrigation, as a tax base is convenient for administrative reasons. The major disadvantage is that land area, whether taxed on a flat or graduated rate, bears no relation to the land value as real estate or wealth. However, the assessment of 'fair' market or rental value of any property, particularly agricultural land, poses serious problems. In theory, the capital value approach is the most accurate method for agricultural land valuation. In most developing countries, the cadastral requirements for property taxation, even in urban areas, are difficult to meet. A block or group approach to agricultural land can overcome some of the valuation problems and reduce the cost of administration. Similarly, as an alternative to regular assessment, it is possible to use an appropriate price index as a guide to changes in the value of land. Governments have either opted for the most detailed and costly cadastre without regular adjustments or crude area tax without making adjustments for land value. In both cases, the taxes on property and wealth have not generally met their revenue and non-revenue goals.

Table 2
Wealth and property taxes on agricultural producers in selected countries

Country	Tax	Tax base	Tax rate	Assessment	Purpose
Market value of property					
Indonesia	Land tax	Taxable value=20–100% of sales value assessed every 3 years	0.5% of taxable value	National	Regional and local government use
Philippines	Land tax	Taxable value=2% of assessed value (assessed value=% of fair market value)	For land=40%; for improvements=15–80%	National	Local government use
Argentina	Land tax	Cadastral value	1–4%	National	Provincial government use
	Land tax	Cadastral value	0.4%	National	Local government use
Chile	Net wealth tax	75% of market value	0.5–2%	National	Provincial government use
	Land tax	10% of fiscal value	10%	National	Central government use
Colombia	Land tax	Cadastral value	2%	National	Municipal government use
	Net wealth tax	10% of fiscal value	0–49%	National	Central government use
Ecuador	Land tax	Cadastral value	4–12%	Municipal	Municipal government use
Uruguay	Net wealth tax	40% of commercial value	0.6–1.6%	National	Central government use
	Net wealth tax	Cadastral value of land less debts	0.9–3.8%	National	Central government use
	Land tax	Cadastral value of land less debts	0.9–12.5%	National	Departmental government use
	Education tax	Cadastral value of land	1.5–3%	National	Municipal government use
Land and crop area					
Ethiopia	Land use fee	Land area	Birr 2–10 per hectare	National	Central government use
Bangladesh	Land tax	Land area	Graduated per hectare	National	Local government use
	Net wealth tax	Value of land per hectare in Tks.	Graduated rates as part of total wealth	National	Central government use
India	Land tax	Land area rent per hectare	Variable by state	State	State government use
	Net wealth tax	Value of land per hectare in Rs.	Graduated rates as per of total wealth	National	Central government use
Malaysia	Land tax	Crop area	Ringgit 2.5–10 per hectare variable by state	State	Local government use
Pakistan	Land tax	Crop and land area	Rs. per hectare variable by province	Provincial	Provincial government use
	Net wealth tax	Rs. 400 per PIU	Graduated rates as part of total wealth	National	Central government use
Sri Lanka	Land tax	Land area	Rs. 15 per hectare	National	Local government use
	Net wealth tax	Market value of land	Graduated rates as part of total wealth	National	Central government use
Egypt	Land tax	Land area rent	14% of land rent for crops; 40% of land rent for orchards	National	Local government use

Agricultural land, where privately owned, is still an important form of wealth (immovable property). Traditionally, the land-based taxes have been the in rem property tax on landowners. As discussed earlier, currently some of these taxes are used as a proxy for tax on potential agricultural income. Others are part of either the property (real estate) tax or the net worth or wealth tax. Net worth or wealth is defined as the value of all assets, including agricultural land and structures, less outstanding debts or liabilities at the end of the year. Taxes on land as property, usually collected by the state and local governments, are most common all over the world. In several Latin American countries (e.g. Argentina, Bolivia, Chile, Colombia, Uruguay), the central and state (provincial) governments also impose net wealth (worth) taxes on agricultural producers as on other taxpayers. In some Asian countries, such as India, Pakistan and Sri Lanka, wealth taxes are assessed and collected by the central governments. The value of agricultural land is included in assessing the total wealth of the taxpayer. In both the net worth and wealth taxes, deductions and exemptions are allowed but the tax rates are often progressive. Generally, the capital (market) value method is used for the valuation of land and structures. In some countries, the state (provincial) and local governments use land area, with some adjustments for site or use, as the basis for property or local taxes. In countries like Bangladesh, India and Pakistan, agricultural land for wealth tax is valued at the rate at which the landowner can use as collateral for obtaining credit from the lending institutions. These values are not related to the capital or market value of land.

The structures of property and wealth taxes on agricultural producers in some representative countries are shown in Table 2. As stated earlier, the revenue from wealth and property taxes on agricultural land is a very tiny portion of the total tax revenue. There are at least three major reasons for this: (i) the tax base has remained narrow; (ii) the assessed value of land has not kept pace with changes in the market (capital) price of land; and (iii) the tax revenue is generally assigned to the state (provincial) and local governments. There is little or incomplete information available about the quantitative contribution of land taxes to the tax revenue of the state (Province) and local level governments. Also, in most countries, the tax rev-

enue of these two levels of government accounts for a small proportion of the national tax revenue.

4. Conclusions

There are several important policy implications of this survey on agricultural taxation in developing countries. In view of the fact that governments have rightly reduced the burden of both implicit and indirect taxes on the agriculture sector, the tax on agricultural land and income should be the focus for raising government revenue and maintaining the conditions for efficiency and equity. The case for additional (direct) tax revenue rests on the fact that governments in many countries (i) have large budget deficits and (ii) must make investments in the physical and social infrastructure in rural areas for sustained agricultural growth and reduced poverty. It is also clear that there exists a large potential for income and land tax, considering the rising land values and incomes of commercial enterprises and large landowners. Finally, there is the issue of horizontal and vertical equity in determining tax liability in the society.

This survey has shown that there are a number of tax options that governments can use to mobilize additional resources, provided that they can address the political and administrative aspects of tax reforms. In most developing countries, these constraints have hampered the development of a rational and equitable tax regime affecting those in the agriculture sector who own or control large areas and have been the major beneficiaries of public investment, input subsidies and credit programs for agricultural development. Governments have, however, started taking steps to reform their tax systems as part of their structural adjustment and economic reform programs. Both internal and external political and financial pressures are apparently encouraging them to overcome the existing political and administrative constraints.

Acknowledgements

I am grateful to Mr. Rashid Faruqee for asking me to write a research report on this subject for the World Bank and making helpful comments on the draft report. I must also thank the Editor and the reviewer for

their comments on an earlier draft. However, I take full responsibility for the contents of this article.

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