LANDOWNERSHIP: A STATUS OF FACTS

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> What information exists today concerning the ownership of rural America is scattered and incomplete . . .[1]
>
> One of the reasons why we must ask who owns the land is that we simply don't know . . .[2]

Implementation of particular land and land use policies must be based upon basic data concerning ownership. The reports from national censuses, federal agencies, commerce and industry, state land agencies, universities, local governments, and public interest groups produce interesting fragments of data or inferential information. For determining who owns America, however, these sources are inadequate, partial and inconsistent. In many situations and in many jurisdictions accurate information is just not available. Nationally the situation is chaotic.

Landownership policy depends upon the availability of adequate facts. Discourse on the appropriate measures for influencing a certain class of landowners, for example, has a hollow ring if the measurable existence of that class is in doubt. A policy for widespread ownership of land has little substance when actual land distribution is unknown or is so ambiguously defined that descriptions defy interpretation.

The adequacy of facts problem consists not only of finding, collecting and reporting available data. Adequacy extends to the definition of concepts, interpretation of data, and methods of obtaining data easily and inexpensively. This paper summarizes currently available data on landownership in the United States, it examines concepts and meanings that affect interpretation of the data, and finally it discusses systems by which more useful landownership data are, or might be, obtained. Before the available facts are reviewed, however, there should be some agreement about the concern for landownership distribution from which need for facts arises.

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1. Cong. Rec. 117, Part 29 at 37, 649-50 (Oct. 27, 1971).

2. *Part 2 Who Owns the Land U.S. Senate Hearings Before the Subcommittee on Migratory Labor,* 96 Cong., 1st Sess. 299 (1971).

THE IMPORTANCE AND USES OF OWNERSHIP DATA

Landownership is regarded as important not only because it determines the distribution of a nation's economy[3] but because it is felt to influence the nation's political and social structure. The notion of equality of opportunity and political liberty is reflected in a frequently quoted passage from Jefferson's letter to Bishop Madison:

> . . . it is not too soon to provide by every possible means that as few as possible shall be without a little portion of land. The small landholders are the most precious part of the state.[4]

When many of America's precepts of freedom and equality were being forged during colonial and revolutionary times, the control of land was closely related to economic opportunity and political democracy.[5] These precepts of equality have been extended to property generally, as exemplified by the Sabre Foundation's recent appeal for:

> . . . a nation characterized by a widespread distribution of genuine private property ownership, under the effective control and direction of responsible individual citizens.[6]

Property Acquisition

While agreeing on the principle of widespread property ownership, observers do not agree on the eventual consequences of unrestricted acquisition of private property. Lester Thurow describes the property system as a mechanism whereby chance and inheritance are causing increasing inequality:

> Once fortunes are created, they are husbanded, augmented, and passed on, not because of homo economicus desires to store up future consumption but because of desires for power within the family, economy or society.[7]

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3. In 1975 land was valued at 23 percent of the national assets in current dollars. J. KENDRICK, LEE & LOMASK, 5 THE NATIONAL WEALTH OF THE UNITED STATES BY MAJOR SECTOR AND INDUSTRY 68 (1976). Kendrick shows net national wealth of $5.7 trillion, of which $1.3 trillion is land in current dollars. In constant (1958) dollars comparable data are $2.8 trillion and $.47 trillion or 17 percent. *See infra* for discussion of land as a national rather than business asset.

4. T. Jefferson letter to Rev. James Madison, October 28, 1785 in KOCH & PEDEN, THE LIFE AND SELECTED WRITINGS OF JEFFERSON 390 (1944).

5. *See generally* M. HARRIS, ORIGIN OF THE LAND TENURE SYSTEM IN THE UNITED STATES (1953).

6. J. McCLAUGHRY, EXPANDED OWNERSHIP, SABRE FOUNDATION 2 (1972).

7. L. THUROW, GENERATING INEQUALITY, MECHANISMS OF DISTRIBUTION IN THE U.S. ECONOMY 154 (1975).

Property and Equality

The issues of equality and wealth and opportunity pertaining to landownership surfaced most recently in the administration of the Reclamation Act. The Congressional hearings on Federal Reclamation Policy contain the observation:

> . . . in the case of the national reclamation program, there is literally no question but that one of its fundamental purposes and intents was to encourage the development of independent, small-business, family-sized farms—to settle people on the land or near it, and to enable them to own the land they farmed; to spread the benefit of subsidized irrigation water to just as many people—independent, bona fide farm families—as possible.[8]

Such policy statements clearly emphasize objectives relating to the distribution of holdings, the use of resources, and the distribution of benefits of public programs.

Property and the Distribution of Wealth

Landownership is economically significant primarily as an aspect of the distribution of wealth. Land trades as a commodity; land stores value; land generates utility and income. Because land is a resource and because, in combination with other resources, land produces goods and services, the decisions of owners about its use are also of economic significance. The supply of land for a particular use will depend upon the price to the decisionmaker holding the controlling right(s).

Property and Political Power

Why from the standpoint of public policy do we need to know the facts of ownership of land? Policies concerned with the distribution of political power must take into account the influence of property, including that in land. Well-being and status of the members of society are affected by their ownership and control of resources. To the extent that decisions concerning land use are distributed through a system of private property rights among many owners, the availability of land for particular uses will depend on the impact of various incentives on the diverse owners. Landownership determines how an important segment of our national wealth is distributed.

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8. *Federal Reclamation Policy (Westlands Water District) Part 1 Will the Family Farm Survive in America?: Joint Hearings Senate Select Committee on Small Business and Committee on Interior and Insular Affairs*, 94th Cong., 1st Sess. 4-5 (1975).

FACTS OF NOMINAL OWNERSHIP[9]

Within certain broad limits, and subject to some interpretation to suit a political philosophy, widespread ownership as a political, social and economic goal is reasonably well established in the United States. It is less clear how ownership is in fact distributed. In other words, we know where we want to go. The problem is knowing where we are.

Land Use Categories

Currently available facts permit only a gross characterization of the pattern of landownership in the United States. Table 1 shows the division of publicly and privately owned land into broad land use categories. From this table and some supplementary sources it is possible to represent the overall pattern of nominal ownership of land.

TABLE 1

MAJOR CLASSES OF LAND, BY USE AND OWNERSHIP, UNITED STATES, 1977*

Ownership[1]	Cropland	Grassland pasture and range	Forest land[2]	Special use and other land	Total land area
			Million acres		
Federal	1	159	277	324	761
State and other public[3]	2	41	38	55	136
Indian[4]	2	33	13	3	51
Private	462	365	420	69	1,316
Total	467	598	748	451	2,264

1. Federal, State, local government, and Indian land acreages are approximations based on public records and reports. Private land is the rest of the land area in each major use.

2. Includes 30 million acres of reserved forest.

3. Does not reflect land grants from public domain to State of Alaska.

4. Tribal and individually held trust lands. Does not include federal lands used by Indians.

*Source: Supplementary data for FREY, MAJOR USES OF LAND IN THE UNITED STATES, NRED WORKING PAPER No. 34 (Aug. 1977).

9. Nominal ownership here means owner of record as distinguished from some hidden beneficial owner or owner of a particular, separated interest. It is intended to connote the owner of fee interest or principle bundle of rights. The definition of nominal owner is intended to reflect the common notions of ownership and, as discussed later, it is necessarily ambiguous.

Federal Lands

The Federal government holds approximately one third of the 2.3 billion acres of land in the U.S. Data on quantity, use, and location of this land are available from administering agencies and are relatively abundant and current.[10] Similarly the data on 51 million acres of Indian lands are available in some detail.[11] The data on 136 million acres of state and other lands are much less detailed and are adaptations of relatively old estimates.[12] In the United States 1.3 billion acres is privately owned, but data about this privately owned land are extremely limited.[13] Little more is known about private ownership than the total area of private land, and it is determined as a residual, by deducting all other owner classes from totals in each use category.

Owners and Parcels

It is possible to compose from a variety of sources a general picture of the number of owners, the number of parcels (ownership units) into which land is divided, and the area owned, in broad classes of use. In some cases the numbers must be expressed as ranges, which means simply that they cannot reasonably be less than or more than the numbers shown.

Over 63 percent of the privately held land is in farms and ranches.[14] Another 32 percent of privately owned land is in forests.[15] The number of farm and ranch landowners is in the range

10. *See,* U.S. GENERAL SERVICES ADMINISTRATION, SUMMARY REPORT ON REAL PROPERTY OWNED BY THE UNITED STATES THROUGHOUT THE WORLD AS OF SEPTEMBER 30, 1976 (1977) and BUREAU OF LAND MANAGEMENT, U.S. DEPARTMENT OF INTERIOR, PUBLIC LAND STATISTICS (1976). Most of the Federal land, 92 percent, is retained from original public domain. The remainder has been obtained by purchase and exchange.

11. U.S. BUREAU OF INDIAN AFFAIRS, ANNUAL REPORT OF INDIAN LAND, AS OF JUNE 30, 1975, 3 (1975); PUBLIC LAND STATISTICS, *supra* note 10.

12. Supplemental data for FREY, MAJOR USES OF LAND IN THE UNITD STATES: PRELIMINARY ESTIMATES FOR 1974 (1977). The most recent reasonably complete survey was undertaken by the Public Land Law Review Commission in 1968.

13. *See, e.g.,* ECONOMICS RESEARCH SERVICE, U.S. DEPARTMENT OF AGRICULTURE, OUR LAND AND WATER RESOURCES, M.P. 1290 (May 1974). *See also,* Boxley, *Landownership Issues in Rural America,* U.S. DEPT. OF AGRICULTURE, ERS-655 (April 1977).

14. FREY, *supra* note 12. Of the agricultural land reported in the Census of Agriculture approximately 37 percent is rented land. Of the rented land 87 percent is rented from landowners who are not farm operators. Prepared from U.S. BUREAU OF CENSUS, 1974 CENSUS OF AGRICULTURE, Vol. 1, STATE REPORTS (1977). *See also* Johnson, *Farmland Tenure Patterns in the United States.* U.S. DEPT. AGR'L AGR. ECON. REPORT 244 (1974) and Moyer, Harris & Harmon, *Land Tenure in the United States, Development and Status,* U.S. DEPT. OF AGR'L. INFOR. BULL. 338 (June 1969).

15. FREY, *supra* note 12.

of 3 to 4 million.[16] The number of forest land owners is less certain, but an estimate of 4 million has been made[17] and there may be some overlap with the farm and ranch owners. The Bureau of Census and Lewis[18] estimate the number of agricultural, forestry, recreational and idle parcels to be 14 to 17 million. Thus, about 95 percent of private land is divided into 14 to 17 million parcels and is held by 7 to 8 million owners.

Housing

While agriculture and forestry occupy most of the area of privately held land, housing accounts for the largest number of owners. There are at least 47 million, and possibly as many as 58 million, owners of occupied housing units.[19]

The number of parcels may differ from the number of owners. More than one housing unit may be located on one parcel of land, and multiple occupancy of a single parcel reduces the estimate of parcels by 1 million.[20] On the other hand, vacant, that is unoccupied, housing units do require parcels of land. The vacant units are owned by owners that presumably already are in an occupied unit and therefore vacant units do not increase the number of owners but do increase the number of parcels. Vacancies adjusted for multiple units would increase the parcel estimate by 3 million.[21] The net number of parcels estimated from housing data, therefore, is 49 to 60 million. Other estimates place the number of residential parcels near the midpoint of that range, 55 million.[22]

From Manvel and Frey it appears that the quantity of land in

16. 1974 Census of Agriculture, *supra* note 14. Range results from different assumptions of number of landlords per tenant.

17. U.S. DEPT. OF AGRICULTURE, INTERAGENCY COMMITTEE, THE FEDERAL ROLE IN THE CONSERVATION AND MANAGEMENT OF PRIVATE NON-INDUSTRIAL FOREST LANDS ii (August 1977). The "4 million or so" is an old estimate believed to substantially understate the current situation.

18. LEWIS, LOCAL ASSESSMENT RECORDS AS INFORMATION SOURCES (tentative title, publication forthcoming, 1978) and U.S. CENSUS OF GOVERNMENT ASSESSED VALUATIONS FOR LOCAL GENERAL PROPERTY TAXATION, PRELIM. REORT No. 2, 85 (Nov. 1977).

19. Owners are estimated as one-to-one with the number of owner-occupied units in 1976. The lower estimate of 47 million assumes no additional owners for vacant units, that is, owners are assumed to be counted in the owner-occupied units. The upper estimate, 47 + 11 = 58, assumes one owner for each of the estimated 11 million multiple rental structures. U.S. BUREAU OF CENSUS, ANNUAL HOUSING SURVEY, H-150-75A Table A-1 (1977).

20. In 1975 cooperatives and condominiums number 988,000. *Id.* at 1.

21. U.S. BUREAU OF CENSUS, *supra* note 14 at 1.

22. D. LEWIS, *supra* note 18.

residences, urban and rural, is about 25 million acres.[23] To summarize using the midpoints of the above ranges it would appear that residences use 2 percent of the area of land in the United States, but they represent 78 percent of the owners and 60 percent of the parcels.

Commercial, Industrial, Recreational, Etc.

Private land for commercial, industrial, recreational, institutional and other purposes represents the remaining 3 percent of private land. Some owners of housing and of farm and ranch land are also holders of commercial and industrial land. Assuming no important overlap, at least 6 to 11 million additional owners can be added to the total to account for nonfarm/forestry partnerships and corporations.[24] Lewis, from the Census of Government Sources, estimates the number of vacant, commercial, and industrial parcels to be 21 million.[25] The remaining area of private land is 44 million acres. In sum, the 1.3 billion acres of private land in the U.S. are held in some 84 to 99 million parcels by 60 to 77 million owners as shown by land use in Table 2.

TABLE 2

OWNERS, PARCELS, AND AREA OF PRIVATE LAND IN U.S.
(Preliminary 1977)

Item	Agricultural and Forestry	Housing	Other	Total
		Million		
Owner (number)	7-8	47-58	6-11	60-77
Parcels (number)	14-17	49-60	21-22	84-99
Area (acres)	1,247	25	44	1,316

23. A. MANVEL, LAND USE IN 106 LARGE CITIES (NAT'L. COMM. ON URBAN PROB. REPT. No. 12, 1968), at 20 states that one-third of urban area is in residences. T. FREY, *supra* note 12 at 22 estimates urban areas at 34.9 million acres. Thus, urban areas would contain 12 million acres of residences. Rural residences are estimated to occupy 13 million acres of which 8 million are farms, farmsteads and farm roads.

24. Projected number of businesses in 1975 based on Internal Revenue statistics of 1974. The 11 million is all non-farm business and 5 million are those who do not pay rent, presumably owning their assets including land. U.S. INTERNAL REVENUE SERVICE, PUB. 438, STATISTICS OF INCOME 1974, BUSINESS INCOME TAX RETURNS, 12 & 127 (July, 1977; U.S. INTERNAL REVENUE SERVICE, PUB. NO. 16, CORPORATION INCOME TAX RETURNS 10 (March 1977).

25. D. LEWIS, *supra* note 18. *See also,* U.S. BUREAU OF CENSUS, Assessed Valuations for Local General Property Taxation, *supra* note 14.

Federal Management Programs

In terms of area, the largest single owner of land is the Federal government. Beneficial ownership of this Federal land is vested in all the people of the United States, but in the management of its domain the separate agencies of the Federal government are semi-autonomous and they serve separate functional and regional clients. Thus, for example, the Forest Service manages the National Forests. The Forest Service and the Bureau of Land Management manage rangelands, while the National Park Service serves tourism and other intensive land uses. Agencies of the Department of Interior administer 538 million of the 762 million Federal acres, and agencies of the Department of Agriculture administer 188 million acres.[26] There are 51 million acres of land managed for the benefit of, if not always the use by, Indians.[27] These lands are often included in statistics of Federally owned lands.

The remainder of the public lands are owned, respectively, by States, with 97 million acres, and by other governments with 39 million acres. It is not known how many of the 27,000 possible jurisdictions[28] and agencies actually own land.

Informational Deficiencies

This simplified picture of landownership, while useful for overall perspective, should not be regarded as an adequate statistical pattern of ownership. The facts are taken or adapted from a variety of sources,[29] some of the data are extensions of ancient estimates, and many data depend upon reasoned rather than empirical relationships with other data. There has been no recent national survey of landownership.[30] The data in Table 1 and 2 are intended to show only general magnitudes, and they contain not only estimation limitations but ambiguities in concept. Some of the sources of these conceptual ambiguities are discussed below.

26. U.S. BUREAU OF LAND MANAGEMENT, DEPT. OF INTERIOR, PUBLIC LAND STATISTICS 1976. Table 8 at 11-13 (1976). The Bureau of Land Management administers 470 million acres.

27. U.S. BUREAU OF INDIAN AFFAIRS, ANNUAL REPORT OF INDIAN LAND, as of June 30 at 3 (1975).

28. The 27,000 number includes states, counties, municipalities, and townships. There are 66,000 units of government with taxing power, some of which own land. U.S. BUREAU OF CENSUS, STATISTICAL ABSTRACT OF THE UNITED STATES: 1976, Table 419 at 257 (1976).

29. For a thorough review of secondary data *see* D. MOYER & A. DAUGHERTY, LAND OWNERSHIP IN THE NORTHEAST UNITED STATES: A SOURCEBOOK (U.S. DEP'T. AGR., E.R.S., April 1976).

30. For report of a 1946 survey which was limited to farmland *see* Inman & Fippin, *Farm Land Ownership in the United States,* U.S. DEP'T. AGR. BUR. AGR. ECON., Misc. Pub. No. 699, Dec. 1949).

OWNERSHIP: AMBIGUITIES AND SOME REFINEMENTS IN DATA AND CONCEPTS

The ownership of land can be ambiguous in at least two aspects: 1) specification of the owner, that is, the principal holder of rights, and 2) identification of others holding separated interests in land other than those of the owner. To these conceptual ambiguities can be added; 3) the problem of valuation, for it is through price or some other expression of value that ownership is given weight and substance. These three topics respectively comprise the next three sections.

Owners, Persons, Ownership

Who (or what) is an owner? The owner, as distinguished from all other holders of interests[31] in the property object, land, is the principal or focal owner of record—the apparent or nominal owner. As discussed in this section even this nominal owner may be hard to identify and to count.

Ownership is a relation among persons with respect to an object—a parcel of land for purposes here.[32] Owners may be persons, combinations of persons, or legal entities such as trusts and corporations. Land may be owned solely, jointly or severally with respect to any particular parcel. In addition, several parcels may be owned by one owner. Some of these relationships are sketched in Chart 1. The chart illustrates how numbers of persons, owners, interests and parcels of land might be counted depending upon what is observed. In the third situation in Chart 1, for example, a count of persons would indicate two persons for a total of two owners; a count of all the entities having an interest in the land would show two persons and one partnership for a total of three owners; and a count of all the separable interests in land could show four ownership interests for a total of four owners.

The distribution of ownership can be affected, in one sense, by the composition of "owners." An "owner" may consist of more than

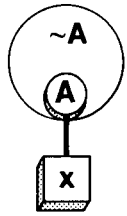
31. "The word 'interest' is used in this Restatement both generally to include varying aggregates of rights, privileges, powers and immunities and distributively to mean any one of them." RESTATEMENT OF PROPERTY, Vol. 1, Chpt. 1, §5 (1936), *reprinted in* M. McDOUGAL & HABER, PROPERTY WEALTH AND LAND 27 (1948).

32. The significance of the parcel is that it is a unit of land over which there is uniformity of relationship such as time of acquisition, level of equity, proportion of interests, and conditional agreements. The parcel in a sense is the ownership equivalent to the physical measure of acre or hectare as a measure of land. For discussion of the land parcel *see generally* H. ZIEMANN, LAND UNIT IDENTIFICATION: AN ANALYSIS, NAT'L. RESEARCH COUNCIL CANADA P-PR46 (1976); MOYER & FISHER, LAND PARCEL IDENTIFIERS FOR INFORMATION SYSTEMS (1973).

WHAT IS AN OWNER?

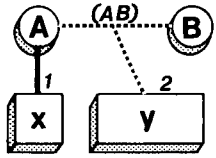
PEOPLE, OWNERS, INTERESTS, AND PARCELS

1 Person
1 Owner
1 Ownership interest
1 Parcel



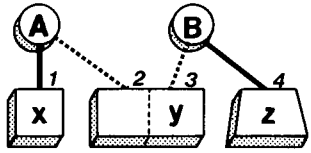
One person A, one owner A one parcel, undivided ownership interest. Person A (owner) shown in relation to all others without such an interest (~A).

2 Persons
2 Owners
2 Ownership interests
2 Parcels



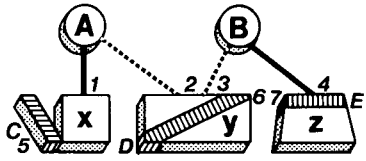
One person A, with one parcel x and two persons AB with a joint and undivided interest in one parcel y.

2 Persons
3 Owners
4 Ownership interests
3 Parcels



Two persons A and B each one parcel x and z. Two persons, A & B with tenancy in common in parcel y held severally.

5 or more persons
6 Owners
7 Ownership interests
3 Parcels



Same as above with mineral rights separation on x to C, an easement on y to D, zoning restriction on z to E.

one person, most commonly husbands and wives together. In studies of landownership in the Great Plains and Southeast, for example, over half of the owners owning about half of the land are husbands and wives.[33] Partnerships, estates, and corporations are legal entities also consisting of more than one person. At some indefinite point in the combining of persons into an ownership entity, the individual control, identity or interest of an individual becomes so small that it loses its relevance. For example, the shareholder in a large public corporation which owns land cannot be regarded as a landowner by virtue of his holding stock. From the data on husband/wife groups, partnerships, and other owner entities it seems safe to assume that the number of persons who own an interest in land is at least twice the number of "owners."

The number of owners, by itself, is only a partial indicator of the distribution of ownership. An owner, to be so defined, must own at least one parcel, but may of course own more than one parcel. Therefore the number of parcels should equal or exceed the number of owners. From the relation of owners to persons who comprise owners it seems that the number of persons who have an interest in land may be as great or greater than the number of parcels. Thus the number of persons involved in an ownership relationship with parcels of land in the U.S. cannot be determined from available information.

Parcels and Size

Parcels may vary in size and value, so that the distribution of ownership can be measured in at least two more dimensions. With number of parcels, area, and value data it is possible to measure the distribution of ownership respectively as the number of units of control or decision, span of area control, and the strength of economic assets.

Some of the ambiguity in ownership data, therefore, may be found in the manner of selecting the unit of observation or the unit of measure. Other ambiguities may result from the lack of uniformity of data sources. A sample of owners taken from tax records would differ from a sample of owners of the same land shown on the grantee index in the recorder's office. Both would differ from the names actually contained in the deeds, which are also found in the recorder's office.

33. Strohbehn & Wunderlich, *Land Ownership in the Great Plains States* 1956 (U.S. DEPT. OF AGR., ARS Stat. Bull. No. 261 1960) at 18 reports 59 percent of owners and 49 percent of land by husbands and wives; STROHBEHN, *Ownership of Rural Land in the Southeast* (U.S. DEPT. OF AGR., ERS Agr. Econ. Rept. 46 1963), at 4 reports 64 percent of owners and 53 percent of land by husbands and wives.

PUBLIC RECORDS

Conceptual problems aside, how does one identify owners of land with the sources available? A practical difficulty in assembling information on nominal ownership from public records is that each county or town is a self-contained unit, and counts made across jurisdictional lines will result in an over-count of numbers of owners and some owner characteristics unless there is additional information from outside the public records. While it is possible to estimate the number of owners and the degree of concentration of landholding within a county or town from public records, it is difficult to make such estimates at any higher level of aggregation such as a region or state without supplementary information.

Public records rarely provide more information about owners than their names. Even the name inadvertently represents all the persons or the proportion of interest involved in multi-person owners. Spelling is often not uniform or even accurate. Even if names were complete, accurate and uniformly spelled it would be difficult to classify owners without additional information about their ownership characteristics. Public records, if standardized and fully exploited could greatly improve data on ownership, but they do not now provide an adequate substitute for detailed surveys.

The conceptual and practical problems of obtaining facts about nominal ownership are compounded by the possibility of nominees, straw men, trusts, corporate layering, output contracts, equitable interests and other devices to conceal beneficial ownership. The differences between nominal and beneficial ownership may not be great, but the doubts are sufficient to warrant specific studies on the methods for, and the extent of, masking actual ownership.

SEPARATION OF RIGHTS AND COMPLEXITY

The distribution of control of, and returns from, land is determined not only by nominal ownership but by a bundle of interrelated rights, duties, privileges and obligations.[34] When the question

34. The bundle of rights concept has been widely used to describe Anglo-American notions of property in land, *e.g.*, R. NOYES, THE INSTITUTION OF PROPERTY (1936) or more generally W. HOHFELD, FUNDAMENTAL LEGAL CONCEPTIONS (1919, Yale paperbound 1964). Recent overviews of the property concept in economics are indebted directly and indirectly to the bundle of rights notion, *e.g.*, G. WUNDERLICH & GIBSON (ed.) PERSPECTIVES OF PROPERTY (1971) and Furubotn & Pejovich, *Property Rights and Economic Theory: A Survey of Recent Literature*, 10 J. Econ. Lit. 1137 (1972). An even more recent but somewhat obscure use of the bundle of rights notion of property is contained in B. ACKERMAN, PRIVATE PROPERTY AND THE CONSTITUTION 39 (1977). S. SIMPSON, LAND LAW AND REGISTRATION at 7 (1976) has preferred to call ownership a container for the bundle of rights, where the owner has the "right to give out the sticks."

of who owns America's land is asked, then, it is important to know whether the one questioning means nominal ownership or possession of a particular set of rights. Ownership can be distributed by fracturing the "bundle of rights." The collection and use of data on separated rights assumes a rather unconventional, but nonetheless useful perspective of ownership.

LIMITED OWNERSHIP

Rights to explore and drill for oil may be separated from surface rights through reservation, sale or lease. An easement for a pipeline may be granted. A property may be mortgaged. A mechanics lien may be created, and zoning restrictions may be imposed. Ownership may be splintered and distributed among a wide variety of rights holders. Data on these separated interests can be determined for an individual parcel of land by examining tax and title records, ordinances of local jurisdictions, and the physical appearance of the property. However, aggregative statistics on separated rights cannot be obtained economically from public records in their current state.[35] Is there, then, any useful relationship between the bundle of rights concept and designs for land information systems?

The Bundle of Rights

The bundle of rights concept is rich in logical qualities but unfortunately it is poor as a practical guide for collecting and assembling land data. Its shortcoming as a working format for a data system, however, does not diminish its usefulness as a conceptual model. The bundle of rights idea, rather than being discarded, might remain on the reference shelf, there to serve as a useful framework for thinking about property. It can serve in the way Bonnen describes a metatheory of information:

> A metatheory for information system design may well be an impossible goal, but the logic of its necessity is valid and has the virtue of keeping in front of as designers of information the true complexity of the task.[36]

35. *See generally* on state of land records and economy thereof; Moyer, Behrens & Wunderlich, LAND TITLE RECORDING IN THE UNITED STATES: A STATISTICAL SUMMARY (U.S. DEPT. OF AGR. AND U.S. DEPT. OF STATE AND LOCAL GOVT., SPECIAL STUD. NO. 67 March 1974); Maggs, *Automation of the Land Title System,* 22 Am. U. L. Rev. 369 (Winter 1973); Wunderlich, *Public Costs of Land Records,* 22 Am. U. L. Rev. 333 (Winter 1973) and Janczyk, *An Economic Analysis of the Land Title Systems for Transferring Real Property,* 6 J. Legal Vol. VI (1) Stud., 213 (Jan. 1977).

36. Bonnen, *Improving Information on Agriculture and Rural Life,* 57 Am. J. Agr. Econ. 760 (Dec. 1975).

While general systems for land information are being designed, special purpose records for various sets of rights may be created, developed and improved. Within the current state of the arts it is possible to vastly improve land record systems without awaiting some complete land data bank which can measure simultaneously all the separable sets of rights. Facts on nominal ownership can be made more accessible through better tax or title[37] records, and then the separable sets of rights can be developed as improvements on subsystems.

Mineral and Water Rights

Some of the complexity of the rights system, and the records which reflect that system, can be seen in the extensions and modifications of nominal ownership, such as mineral and water rights, easements, leases among private holders, and taxation and eminent domain in relation to government. For legal and administrative purposes many of these rights must be recorded. Documents and records for all of the various rights, duties, immunities, and liabilities separated from or attached to a parcel of land do not exist at present. Mineral and water rights separations have a long history in the United States, and in many of the Western states these rights are recorded in separate books.[38] Airspace rights emerged in urban development since the early 1900's[39] and their separate status is acknowledged in public records. Solar rights are in the early stages of articulation in statutes[40] as a distinct right rather than an immunity from a nuisance.

Easements, Etc.

Easements, restrictive covenants and conditions, transferable development rights[41] leases, and condominiums are separations of

37. On tract indexing *see* Burke *infra* note 47, chpt. 4.

38. The United States is one of the few nations in the world wherein mineral rights can be private property. *See* Gillis, *Taxation, Mining and Public Ownership in* NON-RENEWABLE RESOURCE TAXATION IN THE WESTERN STATES Church (ed.), Lincoln Inst. Mono. 77-2 at 5 (1977). On water law *see generally,* W. HUTCHINS, H. ELLIS & DeBRAAL, WATER RIGHTS IN THE NINETEEN WESTERN STATES (U.S. DEPT. OF AGR. Misc. Pub. No. 1206) (Vol. 1, 71) (Vol. 2, 74) (Vol. 3, 77).

39. DANIEL, *et al* VALUATION OF AIR SPACE (HIGHWAY RESEARCH BOARD, NAT'L. ACAD. SCI. REPT. 142 1973) at 3. *See also,* R. WRIGHT, THE LAW OF AIRSPACE (1968).

40. N.M. STAT. ANN. §§7-8-1 to 5 (1976-1977 Inter. Supp.). Concern has been expressed by some legal analysts that the water rights model of law (e.g. New Mexico) is misplaced in solar law.

41. *See e.g.,* THE TRANSFER OF DEVELOPMENT RIGHTS at 20 and 38-51 (J. ROSE ed. 1975), sees the TDR as analogous to unitization of oil and gas fields. The friendly critics

interests in land which are often recorded. These separations of interests, while adding to the complexity of documentation and records, also attenuate the access and control associated with ownership. Ownership may be further qualified by some possible event or passage of time. Documentation of conditional, reversionary and future interests is usually a part of deeds and other records of interest. However, some events such as intestate death, adverse possession and preemption of title will influence the ownership structure even though there is no documentation.

In addition to the separation of interests contracted for by private parties, the ownership of land is qualified by powers of government which have the effect of rights reserved or acquired by government. Some of these rights are created by the powers of taxation, regulation, eminent domain, and escheat. Documentation for the rights of government to control land use by methods such as those listed above do not appear in title or cadastral records. Nevertheless those "sticks" in the bundle of rights are held by government.

A complete analysis of the rights, duties, privileges and liabilities associated with a parcel of land is an extremely complex process and, because some interests are conditional, it is not entirely certain. Nominal ownership is only a first, albeit important, step in the answer to "Who owns America's land?"

VALUE OF RIGHTS OF OWNERSHIP

The complexity of the network of rights in land is only part of the ownership data problem, however. How does one weigh the relative importance, in a given circumstance, of each of the rights? The issue is not merely theoretical. Courts, for example, must decide the value of a "taking." The transferable development right may have a price. Real property tax administration in the United States requires assessment of the value of land. Leases imply rents for the value of rights held by the tenant.

The market value of land is usually the exchange price of nominal ownership. That price will normally account for expected income and expenses such as rentals, consideration for easements, and taxes. The nominal owner usually functions as rent collector and taxpayer. Values of the individual rights, duties, liabilities, and privileges are not separately enumerated in the records of a land sale. Empirically, therefore, values of sticks in the bundle of rights are even more difficult to establish than values of nominal ownership.

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of TDR, for example, acknowledge some administrative and political problems but rarely trace the full implications of separating rights and developing a whole new system of markets, records, and enforcement to maintain them.

The market price of land systematically understates the true or total value of land by an amount equal to the capitalized value of real property taxes. The capitalized value of taxes represents the value to the public over and above what the market states is the land value. The market price of land is net of taxes.[42] The full value of land should include both market price and capitalized value of taxes. The asset value of land, estimated by Kendrick in current dollars, was $1,285 billion in 1975.[43] That value should be raised by the capitalized value of $43 billion of real property taxes,[44] which at 6 percent, for example, would be $717 billion.

The market price placed on the nominal ownership of land is one particular value for land. It is a price that may or may not include a value for rights separated. For example, owners of mineral rights who are not the nominal owners may have their interests separately assessed and taxed. On the other hand, some nominal owners may have their land assessed without regard to separated mineral rights.[45] An easement for buried cable may not affect the price of land and yet the easement might be valuable to the owner of the cable and its customers. A restrictive covenant which limits the use of land from a sometimes higher priced purpose has a value, but not one likely to appear in any land record.

The distribution of wealth and income will be affected not only by the distribution of nominal ownership, but by some interest separations and by the values attached to those interests. Data which accurately reflect the distribution of interests and their values are not easily obtained. Costs must be incurred to determine not only the price of the resource but the identity of the holder, and the value of specific rights in the resources. These information costs are part of a more general class of "transaction costs."

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42. *See, e.g.*, Pasour, *The Capitalization of Real Property Taxes Levied on Farm Real Estate*, 57 Am. J. Agr. Econ. 539-548 (1975). Pasour's study of farm real property is "consistent with the generally accepted hypothesis that changes in property taxes are largely capitalized into farm real estate values." *Id.* at 547. Pasour refers to a number of other studies that affirm the idea that real property prices are responsive to taxes.

43. J. KENDRICK, *supra* at 68, note 1, at 2. Values in current dollars.

44. Another national data deficiency is the distinction between real and personal property tax revenues. Census of Governments reports (as is reported to them) only revenue from all property (real and personal) taxes combined, *e.g.*, U.S. BUREAU OF CENSUS ASSESSED VALUATIONS FOR LOCAL GENERAL PROPERTY TAXATION GC77 pt. 2, at 1 (Nov. 1977). For the same year as the Kendrick value of land (1975) we estimate that the value of real property revenue is $43 billion of the $54.3 billion total property revenue. The proportion of property tax that is based on real property, 79 percent, is estimated from the 1972 data in: ADVISORY COMMISSION ON INTERGOVERNMENTAL RELATIONS, THE PROPERTY TAX IN A CHANGING ENVIRONMENT at 267 (1974).

45. Strasma, *Mining in Wisconsin*, 12 U. OF WIS. ECON. ISSUES 2 (1977).

TRANSACTION COSTS

Transaction costs[46] are the costs incurred by all public and private parties involved in the negotiation, transfer, and protection of property.[47] To the extent that they are identifiable as values, transaction costs appear as reductions in the values attached to the (separable and marketable) sticks in the bundle of rights. However, not all of the costs of finding, evaluating, exchanging, and enforcing property rights are assignable to a particular interest or party. Inability to assign such costs results in a so-called externality problem.[48]

Nonassignability of some transaction costs does not imply neutrality of economic effect. For example, the structure of title examination fees or title assurance charges fall unequally on different values of realty. Police protection of property may differ by geography or economic class and this will affect differently the values of various rights. In addition, land use regulations may not impact properties evenly.

The real estate industry incurs over $8 billion in transaction costs, much of which is spent to determine who owns the land.[49] This determination is not limited to title examination: market studies, location of sellers and buyers, site evaluation, tax appraisals, and land use plans require various levels and types of ownership information. Unfortunately, much of the information about ownership is duplica-

46. Crocker, *On Air Pollution Control Instruments,* 5 LOY. L.A. L. REV. 280 (1972). Crocker refers to these as ICP costs for informing, contracting, and policing. *See* E. FURUBOTN & S. PEJOVICH, THE ECONOMICS OF PROPERTY RIGHTS at 46 (1974), for discussion of costs of defining, exchanging, policing or enforcing property rights.

47. For an example of one type of transaction costs—the conveyancing of residential real estate, *see* D. BURKE, AMERICAN CONVEYANCING PATTERNS (1978).

48. The economic literature on property in the early 1960s and 70s, resting on the Coasian theorem of social cost, was concerned primarily with issues of externalities. The Demsetz extension toward a theory of property measured the value of a property interest against transaction costs to determine whether a benefit or cost could be assigned. Because the externality issue emphasized microeconomic efficiency issues, the broader issues of the costs of a whole property system were not addressed. Coase, *The Problem of Social Cost,* 3 J. L. & ECON. 1-44 (1960); Demsetz, *Toward a Theory of Property Rights,* 57 AM. ECON. REV., PAPERS & PROC. 247 (1967); E. FURUBOTN & S. PEJOVICH, *supra* note 1, at 24. For general treatment of the implications of the Coasian theorem *see* Samuels, *The Coase Theorem and the Study of Law and Economics,* 14 Nat. Res. J. 1 (1974). The cost of and returns from obtaining, organizing and distributing facts make up the economics of the property system.

49. U.S. DEPT. OF COMMERCE, 57:7 SURVEY OF CURRENT BUSINESS 44 (July 1977) gross national product represented by the real estate industry was $180 billion in 1976. Of that amount $8 billion was compensation to employees and the remainder was profit, interest, taxes, and capital consumption. The $8 billion is therefore a conservative proxy for transaction activity to which some portion of profit might be added. These transaction costs are over and above the productivity value of land; they might be assigned as costs of decision-making rather than assigned per se to land.

tive, partial, and time depreciable. Public information on landownership is concentrated in county, city and town offices, most of it to be found in a form which requires additional processing to be made useable.[50] Private information is not freely exchanged; indeed, it is often cartelized and tightly restricted.

The distribution of benefits and costs cannot be completely identified through the market; economic weighting of sticks in the bundle of rights is not accomplished entirely through the land price market. Transaction costs, the costs of a functioning property system, result in a grey area of value concerning the sticks in the bundle of rights, and consequently concerning ownership.

The identification and measurement of transaction costs is a major challenge to research. The analysis of the effects of transaction costs on decisions and the distribution of wealth and income will contribute much to the success and improvement of the property system.

OWNERSHIP FACTS: SURVEYS AND SYSTEMS

The limitations of available facts about landownership, and some of the conceptual and empirical complications in obtaining better facts have been examined above.[51] From that examination it seems reasonable to ask how the quantity and quality of data might be improved. Improvement can be expressed in terms of particular needs, some of which extend beyond research or a general enhancement of the knowledge base. It is useful, following Edgar Dunn,[52] to group these needs, and the data to meet the needs, into two broad categories: intelligence and statistics. Intelligence data connote a complete profile of information on every relevant unit in a population under observation. Statistical data connote descriptive parameters about the population under observation without regard to an

50. *See, e.g.,* the detailed study of real estate transaction costs in D. Moyer, An Economic Analysis of the Land Title Record System (1977) (unpublished Ph.D. dissertation in University of Wisconsin library), *see also* BURKE, JR., *supra* note 2, at 24.

51. The presumption underlying the critique of ownership facts is that such facts would be useful for a better understanding of the functioning of the property system. For literature on the institution of property *see* E. FURUBOTN & S. PEJOVICH, *supra* note 1, at 24 and G. WUNDERLICH & GIBSON, *supra.* For slightly different approach *see* Wunderlich, *A Concept of Property,* 21 AGR. ECON. RES. (Jan. 1969) and Wunderlich, *Property Rights and Information,* 412 THE ANNALS 80 (1974). *See also* B. SCHWARTZ, A COMMENTARY OF THE CONSTITUTION OF THE UNITED STATES, PART II, RIGHTS OF PROPERTY (1965).

52. *See* E. DUNN, SOCIAL INFORMATION PROCESSING AND STATISTICAL SYSTEMS–CHANGE AND REFORM (1974).

individual unit. Statistical data might be compilable from a sample; intelligence data are not.

Intelligence Data

Intelligence data on landownership require such specific information as the owner's identity, the particular parcel of land, its characteristics, and the nature of legal interest or value. Such information is needed for transferring title, administering property taxes, investigating sources of income, granting building permits, or reviewing zonings. Users of such data would include, for example, title attorneys, building inspectors, and program administrators.

Statistical Data

Statistical data on landownership would be reported in classes, categories, or measures without regard to specific people, parcels or places. Such information may be used for research, background for legislation, planning, policy and program development and evaluation. Users of such data would include for example; statisticians, analysts, planners, legislators and citizens. The distinction between intelligence and statistical data is not always sharp. Often the differences between intelligence and statistical data is not the source but the final report; i.e., the use of data rather than its collection.

These two categories of data, and the uses to which they are put, may call for different organizations and procedures to obtain, store and report or retrieve the data. Intelligence data require continuous or periodic processing such as inspection, regulation, conveyance, or recording that often generates information as a byproduct. Statistical data may be obtained by special surveys, perhaps on a one-time basis, independently of any function other than data collection.

The distinct requirements of intelligence and statistical data are a challenge to an information systems designer hoping to serve both classes of needs. Such multiple purpose information systems have been suggested as a proper way to serve many of the needs of local, state and federal governments as well as the needs of private traders, brokers, merchants, financiers, and users of land. The American Bar Association's Committee for Improvement of Land Data, under the acronym CULDATA (Comprehensive Uniform Land Data) has proposed and continues to encourage the development of such systems.[53] Local governments, regional organizations and professional

53. REPORT OF COMMITTEE ON IMPROVEMENT AND MODERNIZATION OF LAND RECORDS, *Modernization of Local Record Keeping of Land Title Information 11 REAL PROP., PROB. TR. J., at 343-351 (1976).*

groups[54] are designing land data systems that can also serve several intelligence needs as well as provide statistical data periodically or on call.

Current Improvements

Two federal enactments currently contain authorization for the improvement of land records. Section 4(d) of the International Investment Survey Act of 1976,[55] specifically authorizes a study of the feasibility of multiple purpose data systems to acquire landownership information, both foreign and domestic; Title 13 of the Real Estate Settlement Procedures Act of 1974[56] seeks to improve the recording procedures and related land records. Other acts and organizations support this trend. The Uniform Simplification of Land Transfers Act[57] contains suggestions for tract indexing to improve the referencing system of land records. The North American Institute for the Modernization of Land Records,[58] a non-profit corporation representing professional groups and government agencies, supports the design, evaluation and development of multiple purpose land data systems.

AWARENESS OF NEEDS

An awareness of the need for better land information and the commitment to design systems for improved information based on the multipurpose concept continues to grow. However, secondary sources such as tax and title records in county offices, while potentially useful, are now neither coordinated nor sufficiently detailed to adequately portray landownership. The detail of owners and ownership of land in the United States is best obtained by a direct survey of current owners. Such a direct survey has been designed by the Economics, Statistics, and Cooperatives Service, U.S. Department of Agriculture, and was implemented in 1978. This national survey

54. Examples of each are respectively: Forsyth County, North Carolina Land Information System; Computer Assisted Mapping and Records Activities System, sponsored by American Public Works Association, test project, Memphis, Tennessee (CAMRAS) and Land Registration and Information Service (LRIS) in the Maritime Provinces, Canada. Another experiment such as Regional Mapping and Land Records (RMLR) in Norristown, Pennsylvania is supported by utilities.

55. 22 U.S.C. §3103(4)(d) (1976).

56. 12 U.S.C. §2611 (1974), 12 U.S.C. §2612 (1974).

57. NATIONAL CONFERENCE OF COMMISSIONERS ON UNIFORM STATE LAWS, UNIFORM SIMPLIFICATION OF LAND TRANSFERS ACT §§2-302-304 (1976).

58. NORTH AMERICAN INSTITUTE FOR MODERNIZATION OF LAND DATA SYSTEMS, PROCEEDINGS OF CONFERENCE ON MODERNIZATION OF LAND DATA SYSTEMS: A MULTIPLE PURPOSE APPROACH (1975).

of non-Federal landownership provides data on characteristics of owners, method of acquisition, and land use. Ownership may be linked to physical features such as soil type, structures, improvements, cover, and current use. This survey provides a core of data on nominal ownership of land in the United States. Beginning with the core data on nominal ownership it will be possible to build a more refined picture of the separated interests in land.

If ownership information can be obtained from files and records used to serve regular functions such as title transfer and taxation, it is possible that no special system or surveys need be created. In their current form, however, title records are not suitable for aggregating data. Tax records, although offering more potential than title records for aggregating data, often do not contain sufficient information. Tax exempt properties, for example, may be omitted. In some jurisdictions, not all assessment data are accessible. Lack of uniformity in title and tax records even within states is an obstacle to obtaining ownership statistics on anything other than a local basis. Finally, tax and title records often do not carry detailed information on owners such as occupation, income status, or organizational form. Although much could be done to improve the statistics of ownership from public records it would still be necessary to rely on special surveys to obtain sufficiently detailed information.

Statistical surveys will provide aggregative information for broad policies. But one time, special purpose surveys are expensive in the sense that costs cannot be spread over many functions. Also, sample surveys cannot serve the needs for information on particular owners or particular units of land. Combinations of surveys and public land records may yield data with only a minimal reporting burden. However, the mixing of public record data with confidential survey data, unless scrupulously administered, could result in unintentional, and perhaps illegal, disclosures. Therein lies another ownership information issue: should ownership of land be secret? A preliminary examination reveals no constitutional or economic reasons for allowing land holdings to remain secret.[59] However, there are public agencies, private plants and listings, and individual wealthholders whose interests might be affected by complete disclosure of ownership information. They might resist improved surveys, systems or combinations often on the grounds of privacy, even resisting improved access to information in public records.

59. SEMINAR ON SECRECY AND DISCLOSURE OF WEALTH, FARM FOUNDATION (May 18-19, 1977). *See* Whitman, *Secrecy and Real Property* & Thurow, *Economic Effects of Secrecy* in D. BURKE & WUNDERLICH, SECRECY AND DISCLOSURE OF WEALTH IN LAND Chicago: Farm Foundation (1978).

The issue of disclosure goes far beyond collection, assembly and reporting of ownership data. Does the right to own property carry a correlative obligation to report that fact publicly? What is the need to know and for what purposes is the information to be used? If the intention of revealing beneficial ownership is to regulate or control specified classes of owners or ownership arrangements, a registration or reporting requirement may be needed.

The concern about ownership as a policy issue, and its implied threat of regulation or control, is likely to increase the desire of some owners to shelter or obscure information about their holding. If better data are to be obtained, therefore, it becomes increasingly important to design information systems to acquire only needed data and to enlist the cooperation of the owners of interests in land as well as those who record, tax, and protect those interests.

The use of America's land will be strongly influenced by a large number of decision makers who own outright, or have a significant interest in, the land. Policies concerned with land use must take into account policies affecting landownership. But planner Frank Popper reminds us that ownership is important not only for its possible effect on use but on the distribution of power and wealth:

> The long-range consequences of land ownership are staggering, not only from a political viewpoint but from the standpoint of how land is controlled for ulterior motives, by whom, and how it might or might not be developed.

It is not that information on land ownership does not exist. It does, and it is on file in every assessor's and recorder's office in every city and county courthouse in America. But few individuals have bothered to collect and analyze it.[60] The distribution of wealth and income, and the flow of benefits and costs from many public programs will be influenced by the pattern of land ownership. Underlying almost any of the issues of land ownership, however, is a factual base. Policies and programs which seek to implement the policies will be no better than the facts on which they rest.

60. Popper, *We've Got to Dig Deeper into Who Owns Our Land,* PLANNING, AM. SOC. PLAN. OFF (1976). *See also* Moyer, *Problems of Land Ownership Data and Related Land Records, in* INSTITUTE FOR ENVIRONMENTAL STUDIES DATA NEEDS AND DATA GATHERING FOR AREAS OF CRITICAL ENVIRONMENTAL CONCERN at 147 (1975). *See generally* C. HARRISS, THE GOOD EARTH OF AMERICA (1974); W. REILLY, THE USE OF LAND: A CITIZENS' POLICY GUIDE TO URBAN GROWTH (1973); G. BOWMAN, LAND USE: ISSUES AND RESEARCH NEEDS FOR PLANNING, POLICY AND ALLOCATION (1976); Bjork, *Property Rights, Scarcity, and Economic Rent: Some Considerations in Land Use Planning in* SORENSEN & STOEVENER, ECONOMIC ISSUES IN LAND USE PLANNING, ORE. ST. EXP. STA. REP. 469 (1977); and BOXLEY, *supra* note 3, at 7.