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## Designing Land Registration Systems for Developing Countries

Tim Hanstad

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# DESIGNING LAND REGISTRATION SYSTEMS FOR DEVELOPING COUNTRIES

TIM HANSTAD<sup>\*</sup>

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## INTRODUCTION

Development literature is filled with information concerning the importance of land and land rights in the economic development process. Individual and secure land tenure rights are vital components of a productive agricultural sector, which is crucial to poverty alleviation and economic growth. In most instances, secure land tenure requires that legal rights to land are adequately defined and documented. Defining and documenting landowners' legal rights and the extent of the landholding are important for simplifying land transactions, using land as collateral for credit, and enabling land administration. This article discusses land registration systems from the perspective of a developing country's government. The discussion covers countries in transition from a state or centrally planned economy to an open market economy. Further, this article considers the relative importance of land registration and asks when a formal land registration system should be established, what type of land registration system is preferable, and how to establish and maintain the system.<sup>1</sup>

### I. HISTORY AND DEFINITIONS

Two unique characteristics of land distinguish it from other types of property. First, land is immovable, so it cannot be physically transferred from one person to another. Second, land is permanent; it

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1. See C. Dent Bostick, *Land Title Registration: An English Solution to an American Problem*, 63 *IND. L.J.* 55, 68 (1988) (discussing differences between rural and urban land registration). The article emphasizes rural land registration because rural areas in developing countries typically contain the majority of the population and the majority of the poor, and because rural populations depend more heavily on land, which is the base for the agricultural sector.

cannot be increased, decreased, or destroyed as can all other forms of wealth. Land's permanence makes it peculiarly capable of lasting record.

Land tenure and title featured prominently in early agricultural economies. Contracts entered into as early as the third millennium B.C. demonstrated that people needed tenure security in the land they cleared.<sup>2</sup> The Bible tells of an early land transaction in the book of *Jeremiah*. In 587 B.C. Jeremiah bought his cousin Hanameels's field in a purchase of land that involved a sealed deed prepared in accordance with legal requirements.<sup>3</sup>

Official records of land ownership date even further to 3000 B.C., where in ancient Egypt rulers kept a Royal Registry to record land ownership for taxation purposes.<sup>4</sup> Much later in Europe, land records were gathered for purposes of taxation. Napoleon I's establishment of a "cadastre" in France encouraged the development of similar systems throughout the continent.<sup>5</sup>

Although early efforts to establish comprehensive land records systems in Europe were mainly for purposes of public taxation, there were also private needs for land records to facilitate effective land transfers.<sup>6</sup> It was the need for land records that eventually provided the impetus for land registration systems. "Land registration system" is defined as any public system of records concerning legal rights to land.<sup>7</sup>

Two categories of land registration systems exist: registration of deeds and registration of title.<sup>8</sup> Registration of deeds developed first. This system, called "land recordation" in the United States, involves registering or recording of documents affecting interests in land. It

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2. See, e.g., WILLIAM W. HALLO & WILLIAM KELLY SIMPSON, *THE ANCIENT NEAR EAST: A HISTORY* 248, 282 (1971).

3. See *Jeremiah* 32:9-12.

4. See GERHARD LARSSON, *LAND REGISTRATION IN DEVELOPING COUNTRIES* 20 (1991).

5. See Greenville Barnes, *The Evolution of the Modern Cadastre Concept: From Domesday Book to LIS/GIS Network*, 50 *SURV. & LAND INFO. SYS.* 5, 6 (1990) (discussing the Napoleonic cadastre's influence on the evolution of land surveying).

6. See LARSSON, *supra* note 4, at 22.

7. See *id.* at 17-18.

8. See *id.* at 22-23.

developed hundreds of years ago in several European countries to prevent double selling of land.<sup>9</sup> With registration or recordation of the deeds at a government office, the priority of claims could be established in the event of double selling.

The second system is registration of title. This system was first introduced in Australia, in 1858, by Sir Robert Torrens.<sup>10</sup> Torrens believed that a land register should show the actual state of ownership, rather than just provide evidence of ownership.<sup>11</sup> Under this system, the government guaranteed all rights shown in the land register. Shortly after Torrens introduced the concept of title registration in Australia, a similar system developed in England.<sup>12</sup>

One important term, at times closely linked to land registration, is "cadastre." A cadastre is a systematically organized database of property data within a certain jurisdiction. This information is based on a comprehensive survey of a property's boundaries.<sup>13</sup> Related to the term cadastre are the terms "cadastral survey," which is a survey of boundaries of land parcels, and "cadastral map," which is a map

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9. See S. ROWTON SIMPSON, *LAND LAW AND REGISTRATION* 13 (1976). In settings without land registration systems, the process of conveyancing land is done without any recourse to public records and is referred to as private conveyancing. In some early communities, the physical transfer of a deed, or a twig, with witnesses present was adequate evidence of a land transfer. This ceremony protected not only the purchaser, but also others who might have undisclosed interests in the property. This tradition led many societies to view publicity as adequate assurance for valid land transfer. See *id.* As societies became less close-knit and more complex, however, this process of private conveyancing proved less satisfactory. See *id.* Purchasers and other interested parties must be able to inquire into a purported owner's rights to the land. From a purchaser's perspective, the most important risk to avoid is that of buying land from a landowner who already transferred her interest to another person.

10. See THEODORE B. F. RUOFF, *AN ENGLISHMAN LOOKS AT THE TORRENS SYSTEM* (1957) (offering a detailed discussion of the Torrens system and its introduction in Australia).

11. See *id.* at 8-15 (discussing the three fundamental principles guiding the Torrens system: mirror, curtain, and insurance). "Mirror" means that the register of title accurately and completely reflects the state of the title. See *id.* The "curtain" principle "closes the curtain" on undisclosed interests beyond the face of the title. See *id.* Finally, "insurance" means undisclosed interest holders are protected for loss due to recording error or omission. See *id.*

12. See generally EARNEST DOWSON & V.L.O. SHEPPARD, *LAND REGISTRATION* (3d ed., 1968) (discussing the establishment of title registration in England).

13. See LARSSON, *supra* note 4, at 16.

indicating the boundaries of land parcels.<sup>14</sup> Although cadastres were originally established for land taxation purposes, in many countries they later were used for land registration purposes. When a cadastre is used for land tax purposes, it is a "fiscal cadastre"; when it is used for land registration purposes, it is a "legal cadastre."<sup>15</sup> It is important to note, however, that a cadastre, or even a cadastral survey, is not a requirement for a land registration system.<sup>16</sup>

## II. WHEN IS A LAND REGISTRATION SYSTEM NECESSARY?

Most experts would agree that some type of land registration system is a necessary element of a developed market economy.<sup>17</sup> Land is a fundamental resource that is most effectively used and exchanged when the rights to land are registered. Designing a land registration system requires a comprehensive analysis of why land registration is necessary.

In designing a land registration system, the most difficult issue is

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14. See DOWSON & SHEPPARD, *supra* note 12, at 11-15 (explaining the goals and requirements of a cadastral survey); see also LARSSON, *supra* note 4, at 16-17 (outlining the connection between these terms).

15. Cf. PETER F. DALE & JOHN D. MCLAUGHLIN, LAND INFORMATION MANAGEMENT 63-84 (1988) (providing a detailed discussion of a third type of cadastre, the "multi-purpose cadastre"). The multi-purpose cadastre is increasingly common in more developed countries. This type of cadastre contains both legal and fiscal information. It also includes information about housing and buildings, demographic data, administrative boundaries, geological and geophysical data, underground utility services, and other pertinent characteristics of the land. See *id.*

16. See LARSSON, *supra* note 4, at 29-35. Many countries have land registration systems that are not linked to a cadastre (or cadastral map). The link between a cadastre and a legal land register continues to differ among countries. Differences in initial conditions, development strategies, and stages gave rise to substantial differences in types and combinations of cadastral and land registration systems all over the world. See *id.* In many countries, including Austria, Germany, the Netherlands, Sweden, and Switzerland, the development of a complete and efficient cadastre predated and influenced the evolution of a legal land registration system. See *id.* Other countries first developed an efficient legal land registration system and later enhanced the land registration system with cadastral surveys and systematic compilation of register index maps. See *id.* This trend was evident in New Zealand and several Australian states. In other countries, such as Greece, Italy, Norway, and Spain, the link between the land registration and cadastral systems is weak or non-existent. See *id.* at 29-35.

17. See, e.g., LARSSON, *supra* note 4, at 11-13 (highlighting the public and private sector benefits of a systematic land registration system).

timing—at what point in the development process should a developing country focus its limited administrative and financial resources on establishing a formal land registration system? In addressing the issues of whether and when to establish a land registration system, government officials should understand the preconditions for a land registration system, the potential advantages and disadvantages of such a system, and likely sources of opposition to a new (or improved) land registration system.

#### A. PRECONDITIONS FOR LAND REGISTRATION

This section discusses the circumstances that, if present in a developing country, indicate that a formal land registration system is desirable and those conditions that must apply if such registration is to be successful.

##### *1. Circumstances Making Registration Desirable*

###### a. Where land title insecurity, uncertainty, or inadequacy restrains development

Although land tenure security and land title security are related, they are not synonymous.<sup>18</sup> A landholder has security of tenure if she perceives little or no likelihood of losing physical possession of the land within some future time period.<sup>19</sup> Security of tenure, a question of fact, exists without documentary evidence. Security of title exists if the landowner is secure in her legal possession of the land. Security of title cannot exist without documentary evidence.<sup>20</sup>

Agricultural productivity is crucial to successful economic development.<sup>21</sup> When farmers have insecure tenure they are unlikely to make the long-term investments needed to enhance agricultural pro-

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18. See Michael Roth et al., Comment, *Land Ownership Security and Farm Investment*, 71 AM. J. AGRIC. ECON. 211 (1989).

19. See *id.*

20. See *id.* at 211-14 (discussing the relationship between land title security and land tenure security).

21. See C. Peter Timmer, *The Agricultural Transformation*, in HANDBOOK OF DEVELOPMENT ECONOMICS 283-321 (Hollis Chenery & T.N. Srinivisan, eds., 1988) (discussing the importance of agricultural productivity in the development process).



ductivity.<sup>22</sup> Farmers need confidence in the future, which public policy provides through land title registration.

b. Where there is early development of a market in land

A market for private land rights will develop in any society that recognizes such rights. In such a society, land interests will pass by inheritance. Both sale and inheritance are likely to be more active under conditions of expanding population. Economists point to the importance of a market in land as a factor in production if latent energy is to be released and productive potentials realized.<sup>23</sup> Thus, it becomes important to provide adequate and efficient machinery to safely transfer interests in land.

The issue of land market development is perhaps more important today than in past decades, as many former communist countries are reforming their land rights systems to permit private land ownership and development of a land market.<sup>24</sup> In these countries, it is important that the initial opportunity to introduce a land title registration system is recognized and seized.

c. Where there is a high incidence of disputes concerning land

Uncertainties over the nature of land interests and over the position of ill-defined boundaries are a fruitful source of disputes in many developing countries. Litigating such disputes leads to a sig-

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22. See ROY PROSTERMAN & JEFF RIEDINGER, LAND REFORM AND DEMOCRATIC DEVELOPMENT 35-71 (1987); see also ROY PROSTERMAN & TIM HANSTAD, LAND REFORM IN CHINA: A FIELDWORK BASED APPRAISAL 16-41 (Rural Dev. Inst. Monograph No. 12, 1993) (discussing the reluctance of Chinese farmers to invest in land due to tenure insecurity). Tenure security, while important for all types of agricultural production, is typically more important for "permanent" crops which need larger capital inputs and have a long delay before the first harvest. This delay in return is made tolerable only by the prospect of sustained yield for many years thereafter. Tenure security is also more important for investments that have a long "pay-back" time, such as irrigation. See PROSTERMAN & RIEDINGER, *supra*, at 37.

23. See, e.g., Jonathan Rodden & Susan Rose-Ackerman, *Does Federalism Preserve Markets?*, 83 VA. L. REV. 1521, 1569-70 (1997).

24. See, e.g., Karen M. Brooks, *Land Tenure in Collectivized Agriculture: The Soviet Union, Poland and Hungary*, in AGRARIAN REFORM AND GRASSROOTS DEV. 235, 248-58 (Roy L. Prosterman et al., eds., 1990) (discussing land tenure and agricultural reform in the Soviet Union in comparison to reform and development in Poland and Hungary).

nificant expenditure of time, capital, and scarce administrative resources. Land registration effectively reduces this waste of resources.

d. Where there is a need to establish a credit base

In most countries, the permanent improvement of land and the commercialization of agriculture depend on the extension of agricultural credit. Lending institutions are typically unwilling to extend credit, however, if farmers do not have well-defined and documented land rights to offer as collateral. In many less-developed countries, the absence of land title registration has been an obstacle for farmers in accessing agricultural credit.<sup>25</sup> Likewise, efforts to provide housing can be hampered if those seeking housing cannot offer documented land rights as collateral for a housing loan.

e. Where a redistributive land reform is contemplated

If land reform measures are to be implemented, records of land rights provide significant assistance for that task. Important land reform implementation decisions, such as from whom land is taken and to whom it is given, are facilitated by the type of information contained in a land title registration system. The system also helps provide secure land titles to land reform beneficiaries.

## *2. Conditions Essential For Success*

While the above factors indicate a need for a land registration system, other conditions must exist before such systems are likely to meet with success.

a. Landowners and others must generally understand and support the system's introduction

The demand for land registration should be generated from within and outsiders should not impose the system on a reluctant landholding community. To this extent, it is important to assess user needs before designing the land registration system. Public education about land registration both facilitates and supports an understanding of the system.

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25. See DALE & MCLAUGHLIN, *supra* note 15, at 175 (explaining that without documented land rights, farmers lack the necessary collateral for most lenders).

b. Government must appreciate the expense and duration of the operation

Land registration is essentially a long-term investment; therefore, policy makers must understand that there are few immediate benefits. Although the government's costs are reduced after the initial compilation stage, subsequent maintenance of the register is a permanent commitment. A policy vacillating between luke-warm support and neglect will prove more costly in the long run. If land registration cannot be conducted efficiently and continuously, it is probably better left alone.<sup>26</sup>

c. Property rights and property boundaries must be clearly recognizable and definable

Property rights vested in claimants and the boundaries delimiting the extent of their holdings must be quickly recognizable and clearly definable if the introduction of a land registration system is not to be frustrated by endless dispute. Land registration should not be employed to create interests, but to record and confirm existing interests and definable future interests. Physical demarcation of boundaries by hedges, fences, dikes, etc. can greatly assist the process and reduce the costs.<sup>27</sup>

d. Qualified survey and registry staff must be available

Compilation and maintenance of a land registration system depends heavily on competent staff. Although education and training can fulfill a significant portion of this need, an existing core of qualified professionals is vital to begin the process and to assist in the training effort.<sup>28</sup> In developing countries, where there is usually a shortage of professional and technical staff to meet the day-to-day

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26. See B.E. Furstrom & I.T. Logan, *Land Information Systems in Developing Countries*, 29 SURV. REV. 131, 136 (1987) (explaining the need for governmental commitment to land information system improvement).

27. See *infra* note 219 and accompanying text (discussing "fixed" and "general" boundaries).

28. See DALE & MCLAUGHLIN, *supra* note 15, at 196 (discussing education and training needs for compilation and maintenance of a land registration system); see also *infra* note 203 and accompanying text (noting that the emphasis on qualified professionals at the elite level has left the need for skilled workers and technicians unfulfilled).

needs of most government departments, it must be realized that the land registration system competes with other government departments for the inadequate supply of educated personnel.<sup>29</sup>

e. A developed system of property rights must exist

Before land registration can be successful, there must be a developed system of property rights. Land registration systems register legal rights in land. If such rights are ambiguous, non-existent, or poorly defined by law, registration of those rights is likely to be an expensive and wasteful exercise. Such countries should focus their initial efforts on defining property rights, perhaps in a comprehensive land law.

## B. ADVANTAGES OF A LAND REGISTRATION SYSTEM

Even using the most efficient methods, introduction of a formal land registration entails considerable costs. It is of great importance, especially in capital-poor developing countries, to give priority only to sound investments. Hence, the advantages of land registration should be carefully studied. The advantages depend on prevailing conditions in the subject country and the type of land registration system to be established.<sup>30</sup> Some general points are discussed below.

### *1. Greater Tenure Security*

Land rights in developing countries are often very obscure. Two situations exist, in particular, where land rights are likely to lack specificity and certainty. First, in countries with a significant degree of customary land rights, discrepancies often exist between unwritten customary rules and newer foreign concepts that cause uncertainty about land ownership and other rights.<sup>31</sup> Second, in the numerous

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29. See Furnstrom & Logan, *supra* note 26, at 138 (discussing the shortage of trained technical personnel in developing countries).

30. See *infra* pt. III (discussing the differing elements of land registration systems).

31. See PROSTERMAN & RIEDINGER, *supra* note 22, at 144. It is not uncommon for those with knowledge of the new "legalized" property concepts to take advantage of indigenous persons holding customary rights in land. The introduction of the Torrens system in Australia (without recognizing customary land rights of the indigenous people) and the United States Supreme Court's approach in doctrinally ignoring customary rights of Native Americans are two prominent examples. In El

countries that are making the shift from state or other public ownership of land to private land ownership, the transition creates considerable uncertainty concerning land rights.<sup>32</sup>

Land registration provides a degree of certainty and security to the owner as well as to others having rights in land. Such secure rights are particularly important for agricultural land. Economists and others have long argued that increasing security of individual property rights in land stimulates private investment and agricultural development because the individual is more willing to make long-term improvements.<sup>33</sup> To the extent that land registration improves tenure security, one would expect it to increase productivity-enhancing investment. Studies in Thailand<sup>34</sup> and Costa Rica<sup>35</sup> comparing the level of investment and productivity on titled and untitled farms lend support to this hypothesis. Despite criticism of universalizing conclusions from these studies,<sup>36</sup> it is apparent that providing legal title can

Salvador, during the late nineteenth century, large landed interests used the termination of communal tenure to displace the traditional, indigenous cultivators, partly because these cultivators had little knowledge of the newly imposed legal system. This process also occurred in other Latin American settings. *See id.*

32. *See, e.g.,* Brooks, *supra* note 24 (discussing the transition from public to private ownership in Eastern Europe).

33. *See* DALE & MCLAUGHLIN, *supra* note 15, at 175 (explaining that secure ownership tends to spur investment because owners are confident in their rights).

34. *See* GERSHON FEDER, ET AL., LAND POLICIES AND FARM PRODUCTIVITY IN THAILAND 28, 94-108, 148-53 (1988) (discussing the relationship of land security to credit access and capital formation and concluding that granting title to the untitled property will greatly enhance Thailand's economic prosperity); *see also* Laurence D. Stifel, *Patterns of Land Ownership in Central Thailand During the 20th Century*, 64 J. SIAM SOC'Y 1, 237-74 (1976) (discussing productivity differences between titled and untitled property).

35. *See* Mitchell A. Seligson, *Agrarian Reform in Costa Rica: The Impact of the Title Security Program*, 35 INTER-AM. ECON. AFF. 31-56 (1982) (explaining that untitled owners fear eviction and find it difficult to secure financing).

36. Such conclusions are criticized for, among other things, making an implicit assumption that land title ownership and land tenure security are synonymous. *See* Roth et al., *supra* note 18, at 211-14; Harold Lemel, *Land Titling: Conceptual, Empirical and Policy Issues*, LAND USE POL'Y, 283-85 (July 1988); David Stanfield, *Rural Land Titling and Registration in Latin America and the Caribbean: Implications for Rural Development Programs* (Oct. 1990) (unpublished paper on file with the author and U. Wis. Land Tenure Ctr.).

Land title ownership and land tenure security, while related concepts, are not synonymous. Land tenure insecurity may be defined as the property owner's sense that she may lose her land or land rights. *See* Roth et al., *supra* note 18, at 211. Tenure security, however, does not require legal possession of title. In some areas

be an effective way of improving tenure security, which normally will lead to increased investment, better production, and higher incomes.<sup>37</sup> In Costa Rica, the USAID-supported Agrarian Law Project concluded that:

When some of the indexes of farm performance . . . are analyzed in terms of tenure security, it is evident that the presence of tenure security, particularly a full title to land, substantially accounts for higher farm performance . . . . Among all the different factors which provide a positive influence to increased agricultural performance, evidence shows that full, legal title to the land is one of the most important if not the most important.<sup>38</sup>

## 2. *Greater Access to Credit*

The registration of rights to land establishes those rights in the eyes of the law and provides documentary evidence necessary to prove land rights. The holder of the land rights thereby becomes "creditworthy" and can pledge his land rights as security for a loan. Development of land and an efficient agriculture typically requires more resources than the owners command on the market or can borrow from friends or relatives.<sup>39</sup> Mortgagees may rely on the register. Their risk is reduced, thus lowering the interest rate they charge for

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of Africa, for example, customary land allocation furnishes individuals tenure security in grazing and cultivation rights. *See id.* Increased urbanization and a declining agricultural sector weaken traditional tenure systems, but these factors do not necessarily indicate tenure insecurity, nor do they demonstrate that customary tenure systems are inherently weak. *See id.* Tenure insecurity may exist even with legal title. *See id.* If property rights are ambiguously defined or inadequately protected, landholders may not perceive increased security with title. Legal title to land promotes security only to the degree that the delineation and protection of land rights encourages trust beyond that furnished by previous land systems.

37. *See* Greenville Barnes, *A Comparative Evaluation Framework for Cadastre-Based Land Information Systems (CLIS) in Developing Countries*, U. WIS. LAND TENURE CTR., Paper No. 102, at 29 (1990). *But see* DALE & MCLAUGHLIN, *supra* note 15, at 175 (explaining that as land is more productively used, the incidence of land disputes arises).

38. *See* O. A. Salas et al., *Land Titling in Costa Rica: A Legal and Economic Survey* (1970) (unpublished manuscript), *cited in* Barnes, *supra* note 37, at 29.

39. Unsecured credit is often available from private moneylenders, but usually is offered at extremely high rates of interest. It is also likely to be short-term and thus not conducive to making substantial capital improvements that have a multi-year payback period.

the loan.<sup>40</sup>

### 3. Dealings in Land More Expeditious, Reliable, and Inexpensive

Without reliable land registers, land transactions may be expensive, time consuming, and ineffective. It is normally necessary to establish that the reputed owner actually has the legal right to alienate the property. This process may be complicated or confusing for the lay person. In many countries that lack a land register, property owners use legal experts to conduct title searches and to establish ownership.<sup>41</sup> The costs are often considerable.<sup>42</sup> A land registry not only makes extended searches of land rights unnecessary, but also makes it possible to use simpler, standard forms of conveyance.<sup>43</sup> A formal land registry aids small rural landholders, who often cannot bear the cost of professional conveyancing assistance.<sup>44</sup>

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40. See DALE & MCLAUGHLIN, *supra* note 15, at 175. *But see* Stanfield, *supra* note 36, at 17-18 (explaining that many studies link land titles with greater access to credit). These comparisons between titled and untitled farmers assume that non-titled holdings, when transformed into titled holdings, will reap the financial benefits of title. *See id.* at 18. Where the differences are attributed to other considerations, however, this analogy is invalid. *See id.* A better approach is to isolate economic indicators on certain non-titled property, extend or adopt a land registration system to cover these landholdings, and later evaluate any changes in the data. *See id.* A study in Honduras used such a method, and the data showed that the potentially positive impact of recorded title on investment, productivity, and income levels of farmers did not occur during the five-year period covered by the study. *See id.* at 18-19. Nonetheless, the landowners themselves perceived economic benefits from titling. *See id.*

41. *See* SIMPSON, *supra* note 9, at 53 (noting that landowners often require professional assistance to prove valid title). A land registration system does not necessarily preclude the need for legal experts to carry out functions related to land conveyances. In England, despite the existence of a land registry, solicitors managed to make themselves necessary for land conveyances. This is partially due to the unnecessarily complicated nature of England's land registry and because the registry is not accessible to the general public. For a discussion of the secrecy of England's land registration system, *see id.* at 49-52.

42. *See* LARSSON, *supra* note 4, at 69 (explaining that establishing title may require costly legal assistance).

43. *See id.*

44. *See* SIMPSON, *supra* note 9, at 164 (noting the difficulties rural landowners face in countries without a land register); *see also* Michael R. Carter & Dina Mesbah, *Economic Theory of Land Markets and its Implications for Land Access of the Rural Poor* 19 (June 1990) (unpublished paper, on file with U. Wis. Land Tenure Ctr.) (explaining that a complex, inefficient land transfer will worsen the relative bargaining position of small farmers in the land market). Because land transfers

#### 4. *Establishment of a Land Market*

One difficulty facing many developing countries and former centrally-planned economies is the absence of a functioning land market.<sup>45</sup> The reasons may be extreme procedural difficulties in transferring land, lack of land market information, unclear delimitation of individual and group rights, insecure ownership, and so on. A land registration system can remove such obstacles and stimulate a land market.<sup>46</sup> The necessity for a functioning land market will become increasingly apparent as the society is transformed into a market economy. A functioning land market permits economies to use land more appropriately, ease the eventual migration of labor out of the agricultural sector, and generally facilitate the establishment of efficient and consistent land policies.<sup>47</sup>

#### 5. *Improvement of Land Administration and Public Administration*

Because land is an important resource for every country and community, land administration is a very important function. It is almost self-evident that to plan land development, one must know the basic facts concerning the land.<sup>48</sup> Better land use is encouraged through planning regulations. Such improved land use can occur through direct action like zoning, protection of ecologically sensitive areas, public urban development, land consolidation, irrigation projects,

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are complex, expensive, and excessively bureaucratic, and because transaction costs are independent of the size of the transaction, per acre costs are greatest for small transfers of land. *See id.*

45. *See* Brooks, *supra* note 24, at 236 (commenting that the problems of a non-functional market include the inability of centrally-planned economies to efficiently deliver agricultural products to meet the demands of a growing market).

46. *See* LARSSON, *supra* note 4, at 11.

47. *See id.* at 69 (explaining that a land register facilitates sound land policies and encourages private development). *But see* Stanfield, *supra* note 36, at 16, 17 (providing contrary evidence to the proposition that land registration will stimulate a land market). A study in Honduras compared the transactions in land in titled areas with transactions in untitled areas. In one titled area, there was no difference in the rate of transactions. *See id.* In another area, the proportion of parcels transferred during a four-year period was actually less among the titled landholdings than in the untitled area. *See id.* The absence of an increase in transactions, however, may be due to other factors such as newly titled owners' greater connection to their lands. *See id.*

48. *See* Furmstrom & Logan, *supra* note 26, at 134.



etc.<sup>49</sup> But it can also be achieved indirectly by providing the suitable conditions for private development mentioned above, such as tenure security and access to credit.<sup>50</sup> Land records based on well-defined land parcels are essential for all these purposes.<sup>51</sup>

Other public land policy measures, in particular agrarian reform, are facilitated by land records of defined land parcels. Agrarian reform laws are difficult or impossible to implement when precise information concerning land tenure is not available. Virtually every agrarian reform will encounter strong opposition. The absence of a land register would increase loopholes available to reform opponents and slow the implementation of effective reform.

Other land policy measures such as control of excessive fragmentation, control of foreign ownership, and prohibitions on excessive land ownership, even in the absence of an agrarian reform program, will be very difficult or impossible to implement without the type of organized information provided by a land registration system.<sup>52</sup>

Public administration in other areas is also enhanced by a land registration system. Administrators need lists of land and the people occupying the land for many purposes, including statistics, censuses, and elections. Public planning of all types will be greatly facilitated by maps and various data in the land register. Dowson and Sheppard list nine major benefits to an operationally efficient land registration system.<sup>53</sup> For Dowson and Sheppard, the ninth benefit addresses public administration: "The administration of every public service and every branch of national activity connected with land is greatly assisted in the execution of its work by the existence of an up-to-date and unimpeachable map and record of landed property throughout the country."<sup>54</sup>

49. *See id.*

50. *See supra* notes 24-29 and accompanying text (explaining land disputes in developing countries and the need to develop lines of credit).

51. *See* LARSSON, *supra* note 4, at 13.

52. *See* SIMPSON, *supra* note 9, at 246-258 (explaining the goals of land consolidation and its technical relationship to land registration).

53. ERNEST DOWSON & V.L.O. SHEPPARD, LAND REGISTRATION 72 (1956), *cited in* SIMPSON, *supra* note 9, at 169.

54. *Id.* The other eight benefits listed by Dowson and Sheppard are:

(i) An inspection of the register shows, at all times, the legal situation of the land. Consequently any person dealing on the evidence of the register need have no fear of ejection. The registered proprietor, and he alone, can dispose of his rights.

### 6. *Reduction in Land Litigation*

A well-designed and efficiently operated land registration system can greatly reduce disputes and litigation over land, resulting in better social relationships, less work for overworked courts, and less expenses for the individual.<sup>55</sup> In a society with gradually changing attitudes toward group or individual ownership of land, as is typically the case when a market economy makes inroads in a customary society, conflicts and litigation over land rights are certain to abound. This results in private sector disputes, as well as conflicts between private and public interests.<sup>56</sup> These disputes overwhelm the courts, which often do not have the capacity to handle increased litigation.<sup>57</sup> In developing countries, as in most other countries, it is more difficult for a poor man to defend his property interests than for a wealthy landowner. Hence, in an environment of unclarified and undocumented land rights, the wealthy, large landowners often benefit at the expense of others.<sup>58</sup>

### 7. *Improved Basis for a Land Tax*

Establishing a land registration system will also create a better ba-

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- (ii) All dealings in land can be effected with security, expedition and cheapness.
  - (iii) A registered proprietor can borrow money quickly, easily and cheaply on the security of his land.
  - (iv) Litigation over land is greatly reduced.
  - (v) Absentee landlords and reversionary beneficiaries need have no fear that they will lose their rights.
  - (vi) The acquisition and holding of land by small proprietors is greatly facilitated.
  - (vii) Complete protection is given to persons who have restrictive rights over land, e.g. a right of way, or water, etc.
  - (viii) Absolute security is given to creditors who lend money on the security of the land.

*Id.*

55. See Lemel, *supra* note 36, at 274 (stating that the case for land titling as an essential condition for eliminating disputes is not clear cut). Furthermore, under certain circumstances, programs designed to produce precise boundaries are reported to have actually caused conflicts between neighbors. See *id.*

56. See LARSSON, *supra* note 4, at 68 (noting that a large percentage of court cases in developing countries involve land disputes).

57. See H.W. West, *The Role of Land Registration in Developing Countries*, CHARTERED SURVEYOR, Nov. 1969, at 216 (discussing the reduction in litigation rates when land registration is properly conducted and adjudicated).

58. See *id.* at 220 (noting the fear of discrimination inherent in poor land registration systems).

sis for land taxation.<sup>59</sup> A good land registration system, based on maps and embodying the unique identification of each land unit, provides the information necessary for a successful tax system.<sup>60</sup> An improved land taxation system provides several benefits, such as increasing revenues by making tax coverage complete, producing a fairer system because boundaries and land areas are more specifically identified, and providing information necessary to identify and punish tax evaders.<sup>61</sup>

A good land taxation system has other benefits. For example, to the extent land tax revenues are kept at the local level, an improved taxation system will augment the effectiveness of local authorities and institutions and become a powerful instrument to decentralize administration.<sup>62</sup>

### C. DISADVANTAGES AND COSTS OF LAND REGISTRATION

While the potential benefits of a land registration system are many, the introduction of land registration does involve costs and can even lead to negative effects.<sup>63</sup> Any government considering the establishment of a land registration system must consider the following factors.

#### 1. High Cost of Compiling and Maintaining a Register

The high cost of implementing a land registration system is the main cause for hesitation on the part of developing countries.<sup>64</sup> An efficient land registration system is expensive. Various studies on the actual costs of conducting surveys and establishing land title regis-

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59. See LARSSON, *supra* note 4, at 66 (suggesting that one of the prime objectives of a cadastre is to provide a more efficient basis for land taxation).

60. See *id.* (indicating that a clear, well-recorded land registration system creates a strong basis for taxation systems). Landowners, however, may be opposed to the establishment of a land registration system if they perceive it will be used to implement a land tax where none currently exists. See *id.*

61. See *id.*

62. See West, *supra* note 57, at 217 (suggesting that although the establishment and maintenance of a land registration system is costly, the costs are usually recovered by the registration fees).

63. See *id.* at 219-21 (discussing the grounds for opposition to registration of title).

64. See *id.* at 221 (stating that the high cost of initial compilation and subsequent maintenance is a deterrent to development in developing countries).

tration systems indicate costs can be as high as \$240 per parcel.<sup>65</sup> Establishment of a land registration system will likely take several years to complete and will use significant numbers of educated persons who could very likely be used for other development projects. Moreover, operation and maintenance of the land registration system, once established, will require significant additional costs.<sup>66</sup>

Although establishment and maintenance of a land registration system is expensive, refusal to establish such a system may be more expensive.<sup>67</sup> One difficulty in comparing costs to benefits is that costs of registration are readily ascertainable and are available for all to review and criticize. But when there is no land registration system, costs incurred as a result of delayed or lost development opportunities are hidden and not available for scrutiny.<sup>68</sup> As West rhetorically asks, "Who can say what is the cost to the national economy of delays in the finalisation of inheritance, or in the granting of leases or mortgages, or in the repeated investigations necessary in private conveyancing or in the unbridled litigation which titles registration could effectively curb?"<sup>69</sup>

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65. See DALE & MCLAUGHLIN, *supra* note 15, at 175-78. The source does not clearly indicate exactly on which years these dollar values are based. Another study was completed on a comprehensive cadastral survey and registration project carried out in the Caribbean in the early 1970s. See *id.* at 177. The unit cost per parcel was \$75 (based on value of the United States dollar in 1974). See *id.* The average parcel size, and thus, the average cost per hectare, was not given for this study.

A third study was conducted in northeast Brazil to secure land ownership for up to 700,000 small farmers and to provide a land information system for an area covering 1.5 million square kilometers. See *id.* The project provided mapping through the use of aerial photography and ground survey control. See *id.* Land tenure rights and ownership were to be identified and relevant geographic information digitized, and institutions were to be strengthened through the provision of buildings, equipment, and staff training. See *id.* at 178. The estimated total cost of the project was \$8 per hectare or \$240 per parcel. A fourth study focused on the development of the Land Registration and Information Service in the Maritime Provinces of Canada for the period 1973-1983. See *id.* The cost was between \$2.20 and \$5.60 (Canadian) per hectare and between \$19.32 and \$50.32 (Canadian) per parcel. See *id.*

66. See West, *supra* note 57, at 221 (discussing the sources of registration costs).

67. See *id.* (discussing the high cost of compilation and subsequent maintenance of a land registration system).

68. See *id.*

69. *Id.*

## 2. "Fixing" the Status Quo May Be Problematic

Implementing a land registration system often "fixes," or solidifies, the existing landholding pattern, which may be problematic. If land parcels are fragmented, it may be prudent to consider some form of consolidation before land registration.<sup>70</sup> Lemel, citing the difficulties of Sicilian farmers with highly fragmented landholdings, suggests that introduction of documented title to such fragmented parcels will lead to problems.<sup>71</sup> Under similar reasoning, others have suggested that China consolidate its fragmented rural landholdings before introducing private documented rights to land.<sup>72</sup>

On the other hand, consolidation by the market (through the voluntary purchase and sale of land parcels) may be easier after adoption of land registration. If implementation of a land registration system fosters the development of a land market by making land transfers more simple and inexpensive, voluntary consolidation is more likely after land registration.<sup>73</sup>

The potential benefits of land registration in facilitating agrarian reform are discussed above. Fixing the status quo by implementing a land registration system in a setting of inequitable distribution of landholdings is another possibility. In establishing a land registration system, however, there are serious dangers of strengthening the land rights of large landholders who might otherwise have uncertain claims to land.<sup>74</sup>

## 3. Dispossession or Greater Tenure Insecurity for Smallholders

Providing registered land rights to small farmers and promoting a land market potentially contributes to further dispossession instead of

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70. See Lemel, *supra* note 55, at 278 (comparing economic and other factors in solidifying an existing landholding pattern versus undergoing a land consolidation and reorganization prior to implementing a registration system).

71. See *id.*

72. See PROSTERMAN & HANSTAD, *supra* note 22, at 29 n.38 (describing the process of decollectivization in China in the early 1980s and its heavy emphasis on the egalitarian distribution of land, resulting in each Chinese farmer owning an average of nine parcels of land).

73. See West, *supra* note 57, at 221 (analyzing the effects of imposing a rigid pattern of landholding in registration systems).

74. See *id.* (noting that in the 1970s, a relatively unequal landholding structure was formalized in Turkey with a titling program).

relieving landlessness.<sup>75</sup> In what has become an often-quoted phrase, Schickele states: "The surest way to deprive a peasant of his land is to give him a secure title and make it freely negotiable."<sup>76</sup> Recent research shows that the effects of increasing the negotiability of title in stimulating the loss of land by small farmers may be exaggerated.<sup>77</sup> The threat does exist, however, and it may be essential in a particular setting to protect the rights of small farmers from speculation and land grabbing even if such protections run contrary to free market principles.<sup>78</sup>

Particular care must also be exercised to ensure that under-represented right-holder groups, such as women and ethnic minorities, are not excluded from the land title registration process. The property position of women is an increasingly important issue.<sup>79</sup> In nearly all less-developed countries, a male's land rights are prioritized over those of a female.<sup>80</sup> The prioritization of a man's property rights is often based on the assumption that women are supported by their husbands. However, women often perform the bulk of agricultural work. Throughout the developing world, greater numbers of men are leaving their villages in search of work in cities or as rural migrant workers, thus relegating all agricultural production and management tasks to women. Therefore, women with de facto control over cultivation greatly need property security. This problem is especially acute where land rights are registered in the name of the male head of household, but evidence of marriage is not similarly documented.<sup>81</sup>

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75. See Barnes, *supra* note 37, at 29 (outlining how the provision of title to small farmers eradicates landlessness among the poor).

76. See *id.* at 34 (discussing Schickele's 1962 remarks concerning problems associated with giving small landowners property rights).

77. See Stanfield, *supra* note 36, at 16-17 (highlighting the problems associated with the notion that increasing the negotiability of title leads to eventual land loss by the peasantry).

78. See *id.* at 17 (describing measures for protecting the rights of small farmers).

79. See Lemel, *supra* note 36, at 278 (commenting that the introduction of formal, documented title systems allows a focus on the property position of women).

80. See *id.* (explaining that the predominant role of women in agriculture creates a tension with traditional developing country values that prioritize male land rights over female land rights).

81. See *id.* at 278-79 (highlighting institutional barriers preventing women

#### D. OTHER GROUNDS FOR OPPOSITION

Beyond the costs and potential negative effects of a land registration system, there are other grounds for opposition.<sup>82</sup> Some objections to establishing a land registration system are justified, whereas some objections are based on misconceptions or suspicions about government motives.<sup>83</sup> In any case, policy makers and those responsible for designing and implementing a land registration system should be aware of the following grounds for opposition.

##### 1. *Fear of Land Tax or Compulsory Acquisition*

A rural population may understandably resist compilation of a land register for fear that the government will use it as a basis for the assessment or enforcement of a land tax.<sup>84</sup> In the early days of British land settlement in India, many Indians refused to give information concerning their land rights because they feared taxation.<sup>85</sup> Political agitators have also contended that compilation of a land register is merely a preliminary measure designed to enable the government to acquire private interests or to confiscate land at will.<sup>86</sup>

While a land taxation scheme or the enhanced ability to ascertain land rights information for development purposes is beneficial to society as a whole, land taxes are disfavored by individual landowners. It is difficult to explain to landowners that a land registration system renders a land tax more equitable or that land registration actually protects landowners from confiscation by confirming their land rights and, hence, their right to compensation if the land is requisitioned.

##### 2. *Opposition of the Legal Profession*

Lawyers are notorious for their reluctance to accept changes in

from achieving property security).

82. See West, *supra* note 57, at 219.

83. See *id.* (explaining that in countries where most people depend directly on the land for their livelihood, land registration is a controversial issue).

84. See *id.* (noting that landowners' fears of registration systems based on additional taxation are unfounded fears and are based on income rather than land-owning status).

85. See *id.*

86. See *id.*

traditional procedures. Such reluctance is often based on self-interest.<sup>87</sup> For example, Torrens's efforts to introduce land title registration in South Australia were strongly opposed by the legal profession. Similarly, attempts to simplify England's land title registration system have been blocked by the bar.<sup>88</sup> If the current system of conveyancing requires significant legal assistance, and land title registration promises to simplify the process, the legal profession is likely to oppose its implementation.<sup>89</sup>

### *3. Suspicion Aroused by Incomprehensible Legislation*

In developing countries, suspicion and antagonism have been aroused by the hasty enactment of legislation based directly on foreign statutes with little or no adaptation to local conditions.<sup>90</sup> Such legislation frequently uses the untranslatable jargon of English real property law, which is further aggravated by the introduction of foreign legal concepts without adequate explanation.<sup>91</sup> If foreign lawyers are to assist with legislative drafting, they should work closely with local lawyers who are capable of adapting foreign legal jargon and concepts to local understandings.

## E. WEIGHING BENEFITS AND COSTS

As discussed above, the introduction of a land registration system involves substantial costs and, if done well, is virtually certain to afford substantial benefits. Decisions concerning such heavy investments should not be taken without attempting to determine the relationship between benefits and costs.

It is obvious, though, that many benefits are difficult or impossible to express in monetary terms. If introduction of a land registration system makes agrarian reform possible, what is this worth? How

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87. See SIMPSON, *supra* note 9, at 172-73 (quoting CHARLES DICKENS, BLEAK HOUSE: "The one great principle of the English law is to make business for itself. There is no other principle distinctly, certainly, and consistently maintained throughout all its narrow turnings").

88. See *id.* (highlighting the general reluctance of lawyers to accept change in the system of land administration for fear of losing their prominent positions in society).

89. See *id.*

90. See West, *supra* note 57, at 220.

91. See *id.*



does one place monetary value on improved social relationships due to a reduced number of boundary disputes or an improved ability to administer land? Land title registration is shown to increase land-owners' perceived values of their land,<sup>92</sup> but such satisfaction remains difficult to value in economic terms.

One unfortunate result of the inability to value the benefits of a land registration system is that the benefits are often disregarded in a cost-benefit analysis. When a country considers a land title registration system, policy makers must accept the fact that it is impossible to demonstrate all benefits monetarily. The inability to apply a perfect economic cost-benefit analysis does not, however, remove the obligation to demonstrate the gains and assess the costs.

### III. WHAT SHOULD A SYSTEM CONTAIN?

#### A. LAND RECORDATION OR LAND TITLE REGISTRATION: HOW APPROPRIATE IS THE UNITED STATES' MODEL?

Few lawyers in the United States are familiar with land title registration systems because, in the United States, such systems are rarely used. In the United States, land recordation, or registration of deeds, is the primary system for documenting legal rights to land. The basic working features of land title registration systems are better understood by distinguishing the differences between land recordation and land title registration. This section briefly describes and compares these two different systems of land registration.<sup>93</sup>

##### 1. *United States Land Recordation System*

The primary functions of a land recordation system are to provide a public record of land ownership and to provide notice of the existence of certain continuing interests, encumbrances, and claims.<sup>94</sup> The conventional recording system makes no averments to the public

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92. See Stanfield, *supra* note 36, at 1-3 (highlighting the lessons derived from a small farmer titling project in Honduras).

93. See Barry Goldner, Comment, *The Torrens System of Titling Registration: A Proposal for Effective Implementation*, 29 UCLA L. REV. 661, 663 (1982) (setting forth a methodology for contrasting and comparing land recordation and land title registration systems).

94. See *id.*

about the state of the title to any parcel of land.<sup>95</sup> Instead, the land recordation system simply invites searchers to inspect copies of documents and to draw their own conclusions as to title.<sup>96</sup>

To assert or to protect an interest in property under the recording system, the claimant must file a document describing that interest with the public recorder's office.<sup>97</sup> The submitted document—for example, a deed—is then recorded in an alphabetical grantor-grantee index, thus providing notice of that interest to all.<sup>98</sup>

Whenever an interest in property is transferred, a search is made of all claims related to the parcel in question.<sup>99</sup> The transferee, or her agent, must undertake a complex, tedious, and costly search through the grantor-grantee indexes to ensure that the transferor does indeed possess the interest to be conveyed and to confirm that no outstanding claims exist.<sup>100</sup>

Obtaining a title insurance policy is the most common method of apprising the transferee of the marketability of the acquired title.<sup>101</sup> A title insurance company issues the insurance policy after its search of the records indicate that title is clear, thereby assuming the transferee's risk of purchasing an impaired title. It is the "risk" inherent in

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95. See R. CUNNINGHAM ET AL., *THE LAW OF PROPERTY* 773 (1984).

96. See *id.* at 774-776 (outlining the process of reviewing documents to determine the status of a land parcel's title).

97. See *id.*

98. See Goldner, *supra* note 93, at 663.

99. See Martin Lobel, *A Proposal for a Title Registration System for Realty*, 11 U. RICH L. REV. 501, 504 (1977) (stating that in most United States jurisdictions a title search is performed by a title insurance company, an attorney, or an abstracting company).

100. See *id.* at 505 (quoting a United States Department of Housing and Urban Development and Veteran's Administration Report, HUD-F-5). The report indicates that one title insurance company lists 76 different sources that must be searched to determine the existing state of a title. See *id.*

101. See *id.* at 507 (detailing the role of the title insurance company in the search for the state of title). Title insurance is a contract to protect an owner and/or lender against losses arising through defects in the title which affect their interest in the property. See *id.* Title insurance guarantees that the ownership of the property being purchased is as stated in the public records. See *id.* A standard title insurance policy will insure only against those matters that are disclosed in the public record and does not cover defects that are not of record or are concealed from the title company. See *id.* at 508. Items such as encroachment, for example, which are found only by a survey or inspection of the property, are not covered by a standard policy. See *id.*

recordation that creates the need for "assurance" that title is clear. The title industry provides this assurance, although at a significant cost to landowners.<sup>102</sup>

The principal problems with recordation stem from the system's inability to provide conclusive evidence concerning the status of rights to land.<sup>103</sup> Any interested party is invited to search the evidence and make their own determination as to the status of land rights although a personal determination is not definitive as to title. Thus, the land recordation suffers from problems of inefficiency, insecurity of title, and high costs.<sup>104</sup>

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102. See Joseph Janczyk, *An Economic Analysis of the Land Titling Systems for Transferring Real Property*, 6 J. LEGAL STUD. 213, 215-20 (1977) [hereinafter Janczyk, *Economic Analysis*] (reviewing a study of the average cost of transferring a title in the recording system with the cost of title transfer in the Torrens system). The study showed that in one jurisdiction in the United States, the cost of transfer in the recording system was about twice that of a transfer in the Torrens system. See *id.* Largely as a result of the inefficiency of the recordation system, landowners in the United States paid approximately \$3.6 billion per year even as recently as 1977. See Joseph Janczyk, *Land Title Systems, Scale of Operating and Conversion Costs*, 8 J. OF LEGAL STUD. 569 (1979) [hereinafter Janczyk, *Land Title Systems*]. The average cost for title insurance upon purchase of a \$150,000 single-family dwelling (\$120,000 loan) in Seattle in 1996 was approximately \$950. See *id.* at 500. If the purchaser later refinances the home to obtain a more favorable interest rate, she was subjected to another title insurance fee of approximately \$300 at 1996 rates. See *id.* at 300.

103. See Janczyk, *Economic Analysis*, *supra* note 101, at 220.

104. See Dorr Viele, *The Problem of Land Titles*, 44 POL. SCI. Q. 412, 425 (1929) (describing the inefficiencies of a recording system). Viele notes:

Lately, the Jumel property was cut up into 1,383 parcels of real estate and sold at partition sale. There appear to have been about three hundred purchasers at the sale, and no doubt each buyer, before he paid his money, carefully employed a good lawyer to examine the title to the lots he bought. So that 300 lawyers carefully examined and went through the same work of examining the old deeds and mortgages and records affecting the whole property. Each searched the same index of names, picked out from the 3,500 volumes of deed and mortgages in the New York City recorder's office the same big, dusty volumes, lifted them down and looked them through — in all, 300 times, the very same labor. Evidently, 299 times that labor was thrown away — done over and over again uselessly, And the clients — the Buyers — together paid 300 fees to those lawyers, who each earned his money, but 299 of those fees were for repetitions of the same work. By and by, twenty years from now, instead of 300 owners of these Jumel plats, the whole 1,383 lots will have been sold and built upon. And, time and again, when these 1,383 lots are sold 1,383 new purchasers will again pay 1,383 lawyers 1,383 fees for examining the same Jumel title; only the fees will be larger, for there will—by that time, at the present rate of growth—be fully 10,000 big folio volumes.

## 2. Land Title Registration Systems

In a Minnesota Supreme Court decision, Chief Justice Start described the difference between systems of land title registration<sup>105</sup> and land recordation:

The basic principle of this system [land title registration] is the registration of the title of land, instead of registering, as the old system requires, the evidence of such title. In the one case only the ultimate fact or conclusion that a certain named party has title to a particular tract of land is registered, and certificate thereof delivered to him. In the other, the entire evidence, from which proposed purchasers must, at their peril, draw such conclusion, is registered.<sup>106</sup>

The government plays a much larger role in maintaining land records in land title registration systems than in land recordation systems. Under land title registration, a certificate of title (or the register)<sup>107</sup> provides conclusive evidence of the land rights pertaining to a particular land parcel. A legal interest in land is not created or transferred until the government itself—that is, officials at the land registry office—conclusively assesses the current state of title.<sup>108</sup>

The essence of the land registration system is the land register,

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*Id.*

105. Cf. SIMPSON, *supra* note 9, at 76 (explaining the confusion referring to land title registration systems as “Torrens systems”). Much of the rest of the world distinguishes between the Torrens system of title registration, the English system of title registration, and the German and Ottoman systems of title registration. *See id.* Experts, however, note that there are few differences between the systems and that using different names suggests a distinction in kind that does not exist. *See id.*

106. Minnesota *ex rel. Douglas v. Westfall*, 89 N.W. 175 (Minn. 1902) (holding that the Torrens system of land registration is not unconstitutional because it is not special legislation, it does not deprive a land owner of his interest in land without due process of law, and it does not violate Article III of the United States Constitution which vests governing power in three distinct branches).

107. *See* SIMPSON, *supra* note 9, at 76 (highlighting the difference between the semantics used in the Torrens and English systems). For example, the Torrens systems typically use a “certificate of title,” whereas the English system uses a system of “loose cards.” Under both systems, the place where the information concerning land rights to a particular parcel is kept is called the “register.” *See id.*

108. *See* John L. McCormack, *Torrens and Recording: Land Title Assurance in the Computer Age*, 18 WM. MITCHELL L. REV. 61, 70 (1992) (noting that one suggestion in dealing with the weaknesses of the American recording system is to replace it with the Torrens system).

which identifies the title owners.<sup>109</sup> The register also lists all encumbrances—easements, liens, mortgages, leases, and covenants—to which that title is subject.<sup>110</sup> With a few minor exceptions,<sup>111</sup> the register's statement as to the tenure rights is legally binding.<sup>112</sup> In fact, although officials may make an error by vesting title in the wrong person or by failing to include a valid encumbrance, the register remains legally binding.<sup>113</sup> The victim of such a mistake loses her interest in the land and has recourse only by way of a claim for monetary compensation against the indemnity fund, which the system operates for that purpose.<sup>114</sup>

The register is maintained by a public official called the registrar.<sup>115</sup> If encumbrances are added or removed, appropriate notations are made on the register.<sup>116</sup> If an owner transfers her land, the deed is brought to the registry where the registrar makes a new entry on the register in the name of the new owner.<sup>117</sup> Thus, in principle, the land register provides the most current and reliable information, making historical searches of title unnecessary or irrelevant.<sup>118</sup>

The registrar maintains files or books containing the originals or copies of all documents referred to on the land register so that an examiner can review them.<sup>119</sup> These files or books are indexed by parcel, thus permitting easy location.<sup>120</sup> A person, such as a prospective purchaser, wishing to learn the status of land tenure of a particular

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109. See CUNNINGHAM ET AL., *supra* note 95, at 828 (illustrating the important difference between title registration and deed registration).

110. *See id.*

111. *See id.* at 831-33 (citing several overriding interests that may undermine the register's statement as conclusive and reliable). For a discussion of these exceptions, often referred to as overriding interests, see *infra* notes 130-131 and accompanying text.

112. *See id.* at 828.

113. *See id.* at 829 (finding that a mistake by a government official does not change the binding nature of the certificate of title).

114. *See* CUNNINGHAM ET AL., *supra* note 95, at 829.

115. *See id.* at 828-29 (explaining how the registrar maintains the registry so that a search of the certificate of titles is conclusive of ownership).

116. *See id.* at 829.

117. *See id.* Compare this with the Torrens system, where a new certificate is issued.

118. *See id.*

119. *See* CUNNINGHAM ET AL., *supra* note 95, at 829 n.7 (describing generally the documentation system of land title registration).

120. *See id.*

parcel need only inspect the current land register. If that person wishes to learn the details or history of the land tenure on that parcel, she may read and evaluate the documents referred to in the register. The title examination process is vastly simplified, and there is no need to duplicate searches for successive transfers of the same land.<sup>121</sup>

Many commentators agree that land title registration is superior to all present systems of title protection based upon registration of deeds (recordation).<sup>122</sup> Land title registration not only makes land titles more reliable, but is also simpler, more logical, and less costly.<sup>123</sup> The primary obstacles to adopting land title registration in the United States are the initial cost of converting from a recordation scheme to land title registration and the opposition of title insurance companies with vested interests in maintaining insecure titles.<sup>124</sup> Under current variations of land title registration used in a handful of American states, a parcel cannot be brought within the purview of the land title registration statutory system until a relatively complex and costly ju-

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121. *See id.* at 827-29. If, for example, the Jumel property, discussed in note 104, had been under a title registration system, the title examination process would have been simplified. If the original property were registered, there would have been no need to search the chain of title. When the property was divided into 1,383 parcels, therefore, the "title search" for each parcel would involve only the single unique transaction involving that parcel. The search through the rest of the title chain would not need to be repeated, and paid for, hundreds of times over.

122. *See id.* at 828 n.5 (stating that the "only notable recent attack on the Torrens concept is that of Shide & Plotkin" who are consultants to title insurance companies); *see also* DALE & MCLAUGHLIN *supra* note 15, at 22-23; Myres S. McDougal & John W. Brabner-Smith, *Land Title Transfer: A Regression*, 48 *YALE L.J.* 1125, 1129-31 (1939) (explaining that due to title registration's "easily demonstrable superiority," commentators predict that it is inevitable); Goldner, *supra* note 93, at 681-86; Lobel, *supra* note 99, at 525 (finding that interest groups prevent the adoption of a simple and secure Torrens-like system); McCormack, *supra* note 108, at 98 (concluding that, in general, title registration is not only more reliable, but promotes security of title and protection against non-record interests); Comment, *Yes Virginia—There Is a Torrens Act*, 9 *U. RICH. L. REV.* 301, 316-21 (1975) (discussing the advantages of a title registration that eliminates most of the disadvantages of the present recording system); Janczyk, *Economic Analysis, supra* note 102, at 214-15 (finding an economic savings in a title registration system).

123. *See supra* note 121 and accompanying text (discussing the overall benefits of land title registration).

124. *See* CUNNINGHAM ET AL., *supra* note 95, at 833 (arguing that the Torrens system is not viable in the United States).

dicial proceeding, similar to a quiet title suit, is held.<sup>125</sup> Therefore, if a new system of land registration is established in a developing country or a country overhauling its property rights system (e.g., former centrally-planned societies that adopt private land ownership systems), land title registration is superior to land recordation. Consequently, only land title registration systems are discussed in the remaining portions of this article.

## B. CONTENT AND MAINTENANCE OF A LAND TITLE REGISTRY

### 1. Content

A register of titles typically consists of both a record of the legal attributes associated with each parcel as well as a description of the land.<sup>126</sup> Legal attributes such as the name of the owners; the nature of the tenure; any encumbrances including mortgages, charges, and servitudes; the price paid for land transfer; any exclusion of rights to minerals below the soil; and any caveats or cautions that may require informing a third party if any dealings in the land are proposed may be recorded in the land register.<sup>127</sup>

Depending on the legal system, certain categories of overriding interests, such as tax liens or general land use restrictions, are assumed to apply, yet are not included in the entries on the registers.<sup>128</sup> Such overriding interests usually concern matters that are not revealed in the title deeds of unregistered land.<sup>129</sup> Overriding interests usually fall into two categories. The first category includes rights ascertained by inspection of the land or by inquiry of the occupier, such as leases.<sup>130</sup> The second consists of liabilities arising under statute, such as land taxes, land use regulations, or the possibility of compul-

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125. See *id.* at 830 (concluding that the cost-prohibitive nature and complexity of land title registration in the United States results in decreasing returns on land investment).

126. See DALE & MCLAUGHLIN, *supra* note 15, at 37.

127. See *id.*

128. See CUNNINGHAM ET AL., *supra* note 95, at 831 (finding that numerous exclusions on the certificate of title do not provide absolute protection for the certificate-holder).

129. See SIMPSON, *supra* note 9, at 18.

130. See *id.* (emphasizing that "registration of title does not, and cannot, do away with the need to inspect land before dealing with it").

sory acquisition.<sup>131</sup>

The description of the land is accomplished by reference to the registry map or a filed cadastral plan or by a plan drawn on the register itself.<sup>132</sup> A land description consists of a simple parcel reference number that relates to the house, street, and town in which the property is located.<sup>133</sup> A parcel with limits determined by ground inspection may be identified as "100 Main Street." Frequently, however, this is deemed insufficient. In addition, the parcel description typically provides other information including the shape and size of the parcel as well as the approximate location of the parcel's boundaries.<sup>134</sup> Details about adjoining parcels are included to illustrate the relative location of the parcel.<sup>135</sup> Experts speculate that the description allows for the relocation of boundaries when there is a dispute or uncertainty, enables any subdivision to take place within or up to the limit of the existing parcel, and (for a multi-purpose cadastre) enables planners and assessors to calculate areas.<sup>136</sup> Parcel descriptions may be verbal, graphical, or based on numerical descriptions, and the various methods for describing the limits of each parcel should include an element that uniquely refers to the parcel as a whole.<sup>137</sup>

Practices of describing the land parcel for registration purposes differ among countries. In some countries, such as England, a series of maps is prepared and kept in the registry for the purpose of describing the land parcel.<sup>138</sup> In England, an individually filed plan for

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131. *See id.* at 18-19. One of the criticisms of Torrens systems in the United States is that overriding interests become numerous and diminish the original objective of listing all rights in a particular land parcel in one place. *See id.* at 19.

132. *See* DALE & MCLAUGHLIN, *supra* note 15, at 37 (providing examples of alternate methods of land description).

133. *See id.*

134. *See id.*

135. *See id.* at 37-38.

136. *See id.* at 38.

137. *See* P.F. DALE, *CADASTRAL SURVEYS WITHIN THE COMMONWEALTH* 57-100 (1976) (discussing the parcel descriptions and reference systems); CURTIS M. BROWN & WINFIELD H. ELDRIDGE, *EVIDENCE AND PROCEDURES FOR BOUNDARY LOCATION* 398-439 (1962) (listing written descriptions required in conveyances); CURTIS M. BROWN, *BOUNDARY CONTROL AND LEGAL PRINCIPLES* 9-30 (1969) (providing various methods to describe land); DALE & MCLAUGHLIN, *supra* note 15, at 37-42 (explaining elements of parcel descriptions and reference systems).

138. *See* SIMPSON, *supra* note 9, at 346 (citing an example of land parcel descriptions in England).



each registered title is prepared from these maps.<sup>139</sup> The filed plan is a copy of the general map with the parcel outlined in red.<sup>140</sup>

In the Australian Torrens system, the plan that illustrates the parcel is not taken from a general map, but is prepared expressly for the (Crown) grant of land and is usually drawn on the register itself.<sup>141</sup> Torrens laws typically do not require a general map or index map, though in Australia, the registrar does, in practice, keep a general map.<sup>142</sup>

The system of individually filed plans prepared from a general map appears ideal, but it may be too expensive for developing countries, especially where land holdings are small.<sup>143</sup> In any case, if a land registry general map is prepared and properly maintained, individual parcel plans are probably not necessary.<sup>144</sup>

If a general registry map is prepared, it is important to ensure that the registry and the map remain coordinated. This is complicated in some countries, such as the Sudan and Kenya, where the registry map is compiled and maintained by a government survey department that is independent of, and physically separate from, the land registry organization.<sup>145</sup> It is advantageous for the survey organization and the registrar organization to be combined into one office, or at least physically housed together.<sup>146</sup> In Nepal, for example, registration, survey, land revenue, land reform, and land administration are all conducted through district land administration offices,<sup>147</sup> which promotes cohesion and consistency. The Tunisian system is an example

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139. *See id.*

140. *See id.*

141. *See id.* (illustrating an example of land parcel descriptions in Australia).

142. *See id.*

143. *See* SIMPSON, *supra* note 9, at 346 (stating that despite improvements in map reproduction, the cost-prohibitive nature of individually filed plans remains a disincentive for developing countries).

144. *See id.* (explaining that proper maintenance of a land registry general map renders the use of individual plans unnecessary).

145. *See id.* at 348 (explaining that separation of the land registry from the registry map increases the likelihood of discrepancies).

146. *See* DALE & MCLAUGHLIN, *supra* note 15, at 194-95 (stating that promoting coordination between the survey and registrar organization would be facilitated by their physical proximity to one another).

147. *See id.* at 195 (noting that maintenance of coordination between the registry and the map ensures the accuracy of land title information).

of less efficient coordination among organizations. In 1964, for example, Tunisian implementation of a compulsory cadastral program suffered because the operation involved three separate agencies—the Land Court, the Surveys and Mapping Office, and the Land Registry—which were each organized differently.<sup>148</sup> Close cooperation between government offices is essential if a system is to function smoothly.<sup>149</sup> It is also advantageous to both landowners and the public to be able to obtain all maps and necessary information concerning the register from one office.

A land register normally consists of a folio for each parcel, which is often enumerated on a register map.<sup>150</sup> When large numbers of parcels belong to each owner, a situation known as “excessive fragmentation,” numerous folios might be impractical, especially in cases where all mortgages and other rights are typical of an owner’s entire holding.<sup>151</sup> For example, in Russia, it may prove easier to create a common folio for the total landholdings of large agricultural enterprises, including descriptions of the various share interests.

It is not essential that the register exist in written form. Some countries, such as Sweden, utilize computerized land registers.<sup>152</sup> However, both the cost and the trained personnel necessary to establish and maintain a computerized land register may prove impractical for developing countries. As an alternative to computerized land registers, the registry could keep a daybook showing the date and time of all registry applications.<sup>153</sup> The application and the attached instruments are given a number to which reference is made in the

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148. *See id.* at 194-95.

149. *See id.* at 195.

150. *See* SIMPSON, *supra* note 9, at 307-09 (distinguishing and discussing relative advantages and disadvantages of the four types of registers). The first type of register is the “ledger,” made up of bound books in which entries are made as they arise, each property being given a separate page. *See id.* at 307. The second is the “bound volume,” which was the original Torrens practice of binding up certificates of title in volumes of fifty or more titles. *See id.* at 307-08. The “loose-leaf binder,” the third type of register, allows leaves to be quickly inserted or withdrawn from binders containing as many titles as may be desirable in one volume. *See id.* at 308-09. Lastly, the “card” or “loose page system,” describes a system in which cards can be filed in drawers. *See id.* at 309.

151. *See* LARSSON, *supra* note 4, at 114 (stating the benefits of using common folios).

152. *See id.* (finding that the register has been replaced by a data bank).

153. *See id.* at 116 (describing various forms of recorded registers).

register itself.<sup>154</sup> Questions of priority are determined by the order of entry.<sup>155</sup>

Normally, instruments concerning land rights or copies of such instruments are kept in the registry. Different systems may be substituted. For instance, in some countries a file to hold deeds and other instruments concerning the parcel is created for every registered land parcel.<sup>156</sup> Other countries simply file the instruments chronologically.<sup>157</sup> Since each instrument is assigned a chronological number in the daybook and the parcel-based register contains the number of each instrument affecting the rights in that parcel, it is easy to trace a particular instrument.<sup>158</sup>

Some registries require that a duplicate of the land register be available in case the register is destroyed by war or natural causes.<sup>159</sup> It is difficult to keep a duplicate copy updated, so it may be simpler to micro-film the register from time to time. Furthermore, keeping a duplicate or back-up copy involves extra costs. Duplication of the register, however, is not absolutely essential since it can be done at a later date when resources are greater.

Issuing a certificate of ownership to the owner constitutes one possible duplication method.<sup>160</sup> In the Torrens system, the owner first acquires a duplicate of the certificate at the first registration.<sup>161</sup> Occasionally, the laws require that this certificate be produced and transferred to any new owners if a transaction is registered.<sup>162</sup> Ideally, this duplicate copy is updated whenever a land dealing occurs concerning the particular parcel.<sup>163</sup> This requires significant additional work for

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154. *See id.*

155. *See* SIMPSON, *supra* note 9, at 355 (discussing the determination of priority not according to the time of registration, but by the fact of registration).

156. *See* LARSSON, *supra* note 4, at 116.

157. *See id.*

158. *See id.*

159. *See id.* at 116, 118 (encouraging the storage of duplicates in a different location than the register itself).

160. *See* LARSSON, *supra* note 4, at 118.

161. *See id.*

162. *See id.*; British Columbia Land Title Act, R.S.B.C., ch. 250, § 189 (1996) (requiring production of duplicate certificates of title for appropriate modification of new land ownership).

163. *See, e.g.*, Alberta Land Titles Act, R.S.A. ch. L-5, § 45 (1980) (requiring the registrar to deliver a duplicate certificate of title to new owners upon registra-

registry personnel because they must request that the owner bring the certificate to the registry office and must physically update the certificate whenever a land dealing takes place. Simpson acknowledges that the strongest argument favoring a duplicate certificate is that failure to produce it alerts the registry to fraud.<sup>164</sup> On the other hand, if reliance is placed on the certificate itself rather than on identification of the landowner, the certificate can be used for fraudulent purposes if it is stolen or falls into the wrong hands.

There are other reasons supporting the issuance of duplicate certificates to owners. Duplicate certificates provide the owner tangible evidence of ownership and, thus, strengthen the owner's confidence in tenure security; duplicate certificates can also serve as a kind of propaganda for registration.<sup>165</sup> In Russia, for example, the Yeltsin government insisted on issuing duplicate certificates of land ownership to increase the confidence of owners in their rights and to build political support for the process of land privatization and registration.<sup>166</sup>

Many commentators question the need or desirability of duplicate certificates.<sup>167</sup> If the cardinal principle of a land title registration system is that "the register is everything,"<sup>168</sup> the value of the duplicate certificate is questionable. In fact, experience in the Sudan shows that the certificate did not play an essential role at all.<sup>169</sup> While certificates were issued in the Sudan in 1914, landowners did not produce the certificate during land transactions.<sup>170</sup> Thirty years later, the duplicate certificates had almost disappeared.<sup>171</sup> Furthermore, the mass preparation of certificates can be a waste of paper and effort. In Kenya,

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164. See SIMPSON, *supra* note 9, at 166.

165. See LARSSON, *supra* note 4, at 118.

166. See Susan Sachs, *Cultivating Land Reform: Privatizing Russia's Farms*, *NEWSDAY*, Apr. 7, 1996, at A7 (noting that prior to Yeltsin's land reform efforts, farm directors often kept certificates in safes).

167. See LARSSON, *supra* note 4, at 118 (discussing how the foundations of land title registration depend on the entry in the registry and not the certificate of title).

168. *Waimiha Sawmilling Co., Ltd. v. Waione Timber Co., Ltd.* (1926) A.C. 101, 106.

169. See SIMPSON, *supra* note 9, at 167 (describing the use of certificates of official search in Sudan).

170. See *id.*

171. See *id.*

9,190 certificates were prepared by 1922 for titles in the coastal strip of the country, but 2,000 were still uncollected in 1933, and 770 remained unclaimed thirty years later.<sup>172</sup>

In addition to organizing of the register by parcel, many registers also contain a grantee-grantor index.<sup>173</sup> This index lists both current and former landowners and the parcels in which they have interests.<sup>174</sup> A grantee-grantor index is not essential to the proper operation of a register.<sup>175</sup> It can, however, assist in determining the land interests when a landowner dies or declares bankruptcy<sup>176</sup> and can also be of use in connection with land reform, especially where ceiling legislation prescribes maximum holdings.<sup>177</sup>

An essential component of the land title registration system is an assurance fund to compensate parties who suffer damages due to the registrar's mistakes.<sup>178</sup> While registration fees may be used to help establish an assurance fund, a fund solely dependent on registration fees is inadequate because the fund is vulnerable to claims before sufficient money accumulates.<sup>179</sup> Although there are exceptions, the experience of most countries shows that claims against the assurance fund are infrequent and insubstantial.<sup>180</sup>

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172. *See id.* (finding that systematic and compulsory adjudication voided the need for certificates of title in Kenya).

173. *See id.* at 356 (illustrating the benefits of utilizing an index system of recordation).

174. *See id.*

175. *See* SIMPSON, *supra* note 9, at 356.

176. *See id.*

177. *See id.*

178. *See* RUOFF, *supra* note 10, at 13. Ruoff suggests that three principles are fundamental to the success of land title registration, one of which is the "insurance principle" which calls on the registry to compensate any party suffering damages as a result of mistake in the register. *See id.* The other two principles are: (1) The "mirror principle," involving the proposition that the register reflects accurately and completely the current facts material to land title; and (2) The "curtain principle" which provides that the register is the sole source of information for potential purchasers who need not concern themselves with interests that lie behind the curtain. *See id.* at 8, 11 (discussing how additional principles are moot unless the insurance fund is adequate).

179. *See* SIMPSON, *supra* note 9, at 181 (illustrating a possible shortcoming of the assurance fund).

180. *See id.* at 180 (dispelling "the common euphoric assumption that assurance funds never run into difficulty"). Two cases from the United States experience with the Torrens system are perhaps the most notable exceptions. *See id.* In 1918, a

## 2. Maintenance of the Register

In most settings, maintaining a land title register is easier than setting up the register initially. This is not to say that maintenance is unimportant. On the contrary, the value of a land register depends greatly on its day-to-day maintenance.<sup>181</sup> Dowson and Sheppard state:

A careful study of the long and abundant history of registration of rights to land shows that the difficulties that have so frequently been encountered in the successful establishment of this obvious and commonsense record have been due to defects in, or handicaps to, the daily working of the service, not to any extraneous disturbing conditions, and certainly not to fraud.<sup>182</sup>

A related point is that the workings of the register should not be so complex that access is limited. If access is limited, the long-term integrity of the land registration system is threatened. One likely result of an inadequate, costly, or complex administrative structure is a progressive concentration of land in the hands of those with the advantages of wealth, influence, and education. One author describes such a situation in Ecuador, where the costly and complex administrative land registration process prevents poor *campesinos* from gaining access to land, while those who are wealthier or more sophisticated concentrate lands in their ownership.<sup>183</sup>

The location of the registry offices is important in contributing to

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California couple bought land on the strength of a Torrens certificate that failed to disclose a mortgage of \$55,000, but after 19 years of litigation, the couple obtained a judgment for \$48,000, only to find the assurance fund contained only \$39,000. See *Gill v. Frances Investment Co.*, 19 F.2d 880 (1927). Although the plaintiffs prevailed, the assurance fund failed to cover the judgment awarded due to the non-compulsory nature of title registration in California. See also RICHARD R. POWELL, *REGISTRATION OF THE TITLE TO LAND IN THE STATE OF NEW YORK* 98 (1938) (finding that an unpaid claim of roughly \$8,000 remained after depleting the state assurance fund). Likewise, in Nebraska, in 1929, there was only \$182 in the assurance fund to satisfy a judgment against it of \$19,890. See *Jones v. York County*, 26 F.2d 623 (1928) (providing an example of how the assurance fund failed to make whole the successful plaintiff because title registration was voluntary in Nebraska).

181. See LARSSON, *supra* note 4, at 118.

182. DOWSON & SHEPPARD, *supra* note 12, at 8.

183. See SOLON L. BARRACLOUGH, *AGRARIAN STRUCTURE IN LATIN AMERICA* 223 (1973).

the efficient maintenance of a land title registration system. Applicants should not have to travel long distances to reach registry offices. Because this would cause many land dealings to go unregistered or unconsummated by the poor or others unable to travel. On the other hand, too many registration districts may create problems in recruiting competent personnel and are likely to increase the costs of the system. Some countries have tried to balance these competing factors by providing an officer to collect applications for registration in a local office on specified days of the week or month, while maintaining the registry itself in a district office.<sup>184</sup>

The document forms prescribed for conducting registrable transactions play an important part in the effective operation of a land registry.<sup>185</sup> Mandating the use of standardized forms increases the speed of the registration procedure and reduces the possibility of mistake.<sup>186</sup> Lawyers often oppose the requirement of such standardized forms because the completion of a straightforward printed form is often so simple that lawyers may find it difficult to justify significant fees for conveyances.<sup>187</sup> Experiences from Australia, England, Kenya, and the Sudan, however, show that it is possible to use standardized forms.<sup>188</sup> For example, according to the English Land Registration Rules of 1925, the transferor must fill in the title number, the purchase price, and the name of the transferee before signing the document.<sup>189</sup> Furthermore, the form permits post registration alterations and additions should the transferor desire.<sup>190</sup>

Although registration application fees are common, when registration costs are high, people tend to avoid registering land dealings. For this reason, it appears prudent not to charge landowners for the initial registration of a land parcel. However, after a land registry has been established, registration fees should be established at a fixed,

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184. See LARSSON, *supra* note 4, at 119 (encouraging registration through decentralization while maintaining control over competent personnel).

185. See SIMPSON, *supra* note 9, at 360 (pointing out the brevity of the registration of title form as one of the many benefits of title registration).

186. See *id.* (stating that the use of printed forms issued by the land registry is compulsory unless otherwise permitted).

187. See *id.*

188. See *id.*; see also LARSSON, *supra* note 4, at 119 (noting the simplicity of standardized forms).

189. See LARSSON, *supra* note 4, at 119.

190. See *id.*

low level, to support the operation and maintenance of the system.<sup>191</sup> Such fees may be based on the land value so that bigger transactions subsidize smaller ones. Alternatively, registration fees may be established on a fixed fee basis.<sup>192</sup>

Land registration systems should also include a system by which the registrar is automatically informed of all transfers or successions handled by courts, notaries, and local and central authorities.<sup>193</sup> This is especially important in the case of inheritance, where there is a significant risk that changes in ownership will not be reported. Likewise, it is helpful if the tax authorities notify the registrar of all tax liens placed on land, so the registry office can maintain a list of all such liens for notice purposes only.<sup>194</sup>

### 3. *Training and Education*

In creating a land registration system, training and education are instrumental.<sup>195</sup> Specialists with both formal training and practical experience are needed to maintain the system.<sup>196</sup> The lack of such specialists in developing countries necessitates a great amount of information, education, and training before a large scale registration system can operate efficiently.<sup>197</sup> In 1972, the United Nations Ad Hoc Group of Experts highlighted four common needs of developing countries in establishing training.<sup>198</sup> First, short-term training in the essential aspects of land title registration may be required for high-

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191. See SIMPSON, *supra* note 9, at 301-302 (describing the optimum way to calculate registration fees).

192. See *id.*

193. See *id.* at 16-18 (mentioning the particulars that should be listed in the register).

194. See *id.* at 18-19 (discussing some overriding interests that prevent the register from being complete). Tax liens need not be, and typically are not, entered into the register. See *id.*; see also DALE & MCLAUGHLIN, *supra* note 15, at 37 (explaining that certain overriding interests may be excluded from the register).

195. See DALE & MCLAUGHLIN, *supra* note 15, at 195 (discussing the importance of training and education in the process of establishing a land registration system).

196. See *id.*

197. See *id.* (discussing the scarcity of individuals available to advise and manage the creation of such systems).

198. See *id.* (recommending training strategies to build a well-informed staff of individuals responsible for operating a land information system).



level policy makers in less developed countries ("LDCs").<sup>199</sup> Second, high-level administrative and professional staff could gain exposure by observing land title registration programs in other countries.<sup>200</sup> Third, mid-career training, such as providing periodic seminars, should be available to professional personnel to broaden outlooks and inform them of new developments.<sup>201</sup> Lastly, the general public should be provided with information through the mass media.<sup>202</sup> A common mistake has been to place too much emphasis on the formation of top echelon personnel at the graduate, engineer, or equivalent level, while placing too little emphasis on the training of technicians and skilled workers who constitute the core of the work force.<sup>203</sup>

To achieve optimum results, training should occur in the country and environment where the technician will work.<sup>204</sup> Unfortunately, there are many difficulties associated with overseas training for foreign aid programs.<sup>205</sup> First, overseas training is typically several times more expensive than in-country training and, thus, limits the number of technicians who can be trained with the available resources. Second, trainees from developing countries who study abroad invariably suffer from culture shock.<sup>206</sup> They must absorb more than the training information and frequently require time to adjust to the training environment and to concentrate on technical matters.<sup>207</sup> Third, after living abroad for an extended time, trainees suffer from a reverse form of culture shock upon returning home.<sup>208</sup> Finally, these technicians will often use their time and training overseas to seek a job outside their country and thus contribute to the problem of "brain drain."

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199. *See id.*

200. *See* DALE & MCLAUGHLIN, *supra* note 15, at 195.

201. *See id.*

202. *See id.*

203. *See id.* at 196 (citing M. De Hensler, *Proceedings of the United Nations Inter-Regional Seminar on the Role of Surveying, Mapping and Charting, in COUNTRY DEVELOPMENT PROGRAMMING* 24 (1985)).

204. *See id.* (suggesting stable conditions for trainees to maximize the results of their training).

205. *See* DALE & MCLAUGHLIN, *supra* note 15, at 196.

206. *See id.*

207. *See id.*

208. *See id.* (recognizing that readjustment hinders a technician's ability to apply newly learned skills).

#### IV. HOW TO ESTABLISH A LAND REGISTRATION SYSTEM

Establishing a land title registration system is a difficult task because to register title for each parcel, one must ascertain who holds what rights to that parcel and then define or describe the parcel.<sup>209</sup> The process of compiling such evidence differs enormously from country to country, perhaps even within the same country.<sup>210</sup> Title may originate from different sources, such as official grant or occupation under customary law.<sup>211</sup> Title may be based on documentary or oral evidence of a wide variety, or based merely on uncontested possession.<sup>212</sup>

The closer in time to the origination of title that title is registered, the less likely problems in ascertaining title will arise.<sup>213</sup> For example, in countries that have long recognized state ownership of land, but are creating private rights in that land, ascertainment of title is relatively simple because the time proximity is closer to the original "clean slate."<sup>214</sup> However, in countries where private title to land originated decades or even centuries earlier, or where only customary rights have existed, establishment of a title registration system is likely to prove much more difficult.<sup>215</sup>

Establishing a land title register consists of four main operations: (1) initial determination of existing land rights; (2) demarcation, which is the marking of the limits of each parcel on the ground; (3) survey, which involves measurement and mapping; and (4) description of the land parcel and tenure rights, which entails entering rele-

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209. See SIMPSON, *supra* note 9, at 188 (noting that forming a registration system is difficult because it entails compiling title for all landholdings in existence).

210. See *id.*

211. See *id.* (listing the numerous methods that may need to be explored to ascertain an accurate listing of title).

212. See *id.*

213. See *id.*

214. This assumes the country does not attempt, as in a number of central and eastern European countries, to give priority rights in the land to former owners (or their heirs) who held the land before nationalization. In such countries, the process of ascertaining rights becomes an administrative and legal nightmare because one must determine who held what rights to the land several decades ago and then trace the descent of these rights to the present day.

215. See SIMPSON, *supra* note 9, at 188 (explaining that the difficulty in initiating a registered title depends on past records).

vant information into the land register.<sup>216</sup>

The initial determination of existing rights occurs only once for a given land parcel, usually during the initial compilation of the land register.<sup>217</sup> The other three operations are ongoing. They occur during the establishment of the land registry, but continue as and when there are changes in land rights.<sup>218</sup> All four processes are interdependent.<sup>219</sup>

Before discussing the specific operations involved, it should be noted that the work of establishing a land title registration system depends on the number of land parcels to be registered. A radical way of reducing the number of parcels and, thus, reducing the costs of establishing the system, is to record the blocks—the villages,

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216. See DALE & MCLAUGHLIN, *supra* note 15, at 28 (discussing the four main procedures involved in establishing a land title register).

217. *See id.*

218. *See id.*

219. *See id.* All four processes are influenced by the nature and definition of boundaries. *See id.* Not all land registration systems treat boundaries alike. In a legal sense, a boundary is a vertical surface that defines where one land owner's territory ends and the next begins. *See id.* at 29. Boundaries are likened to an infinitesimally thin bead curtain separating land parcels. *See id.* Two categories of boundaries exist—"fixed" and "general"—and each category has at least three types. *See id.* at 29. A fixed boundary can be: (1) one that has been precisely measured so that a surveyor can, from the survey measurements, correctly supplant any corner memorials that are mislaid; (2) a boundary corner point that becomes fixed in space when agreement is obtained at the time of alienation; the surveyors' measurements may provide useful evidence of the boundary's location, but the boundary is fixed regardless of whether there was a survey; or (3) an agreement that is ascertained between adjoining landowners and the line of division is recorded as fixed in the register; this is a "fixed" boundary under the English system. *See id.*

Under the first two types of fixed boundaries, the evidence on the ground takes precedence over what is written down. *See id.* In contrast, under the third type of fixed boundary, the written evidence takes precedence. *See id.* at 29-30; *see also* SIMPSON, *supra* note 9, at 137. Three types of general boundaries also exist. Using the English general boundary system, the exact line of a boundary delineated by a hedge or fence is unclear. It could be on either side of the hedge or down its center. *See DALE & MCLAUGHLIN, supra* note 15, at 30. To others, a general boundary represents an indefinite boundary, such as the edge of a forest or the high tide mark. *See id.* In other countries, a general boundary is an approximate line that is deliberately kept vague. *See id.* Provided there is boundary monumentation, the parcels define themselves on the ground and the land registry need not keep a precise definition. *See id.* General boundaries are often preferable for LDCs and other countries lacking sufficient resources because they require less demanding and, thus, less costly surveys. *See id.*

wards, family units, or whatever the natural group—but not the individual unit of ownership or occupancy.<sup>220</sup> Such group registration, especially where strong individual tenure rights exist, considerably reduces the usefulness of the land registration system. Group registration does not provide information on the size, value, or existing rights in the individual parcels and cannot guarantee tenure security to the occupier or facilitate the use of individually owned parcels as collateral for a loan. Group registration, however, will not hamper the later registration of individual titles. Group registration is, therefore, one possible first step in a progressive approach for less-developed countries, a step that will reduce the costs of land registration.

### A. DETERMINING LAND RIGHTS

Before land rights are registered, the government must ascertain existing rights to determine what land rights should be entered on the register. Depending on the existing system of land rights and land documentation, there are three methods of accomplishing this task: (1) adjudication, a process which can be either “sporadic” or “systematic”; (2) registration of state (or Crown) grants; and (3) conversion of a registration of deeds system.<sup>221</sup> These methods may be used in combination.

#### 1. Adjudication

Adjudication is the process whereby existing rights in a particular land parcel are finally and authoritatively ascertained. Adjudication has been the most common method of determining land rights for registration purposes.<sup>222</sup> Unless land registration is performed in coordination with a land reform program, adjudication does not aim to alter existing rights or create new ones, but merely ascertains what rights exist, by whom they are exercised, and to what limitations they are subject.<sup>223</sup> Adjudication attempts to clarify all land interests, thus

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220. See LARSSON, *supra* note 4, at 124-25 (indicating that group registration was used in Papua New Guinea, Nigeria, the Solomon Islands, and Sudan); SIMPSON, *supra* note 9, at 232-34.

221. See SIMPSON, *supra* note 9, at 193.

222. See *id.* at 194 (emphasizing that the process does not establish new rights, but simply reaffirms pre-existing rights).

223. See *id.* at 195 (highlighting the focus of adjudication).

resulting in an accurate land register.<sup>224</sup>

The determination of land rights through adjudication presupposes that the land parcels have been defined either prior to or concurrent with the adjudication. Adjudication proceeds either sporadically or systematically.<sup>225</sup> The sporadic approach is to adjudicate whenever or wherever there is a demand or other reason for determining the precise land rights concerning a particular parcel.<sup>226</sup> For instance, some countries have required the registration of land title for parcels only when that parcel is transferred. In that way, all parcels are slowly entered into the register.<sup>227</sup> The sporadic approach is piecemeal and haphazard, but low-income countries with significant resource and personnel constraints often are forced to proceed in this manner. The sporadic approach allows the government to defer costs and also makes it easier to pass costs on to beneficiaries.<sup>228</sup> Following the sporadic approach, however, typically means that the land register will not be complete for many years or decades and will be less beneficial both to the government and to landowners as long as registered and unregistered titles remain intermixed in the same locality.<sup>229</sup>

The systematic approach is more methodical and rapid, and is typically compulsory.<sup>230</sup> Adjudication proceeds one area at a time, and all parcels within a given area are entered into the land register at the same time.<sup>231</sup> In the long term, the systematic approach is prefer-

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224. See LARSSON, *supra* note 4, at 101-102 (discussing the objectives of adjudication).

225. See SIMPSON, *supra* note 9, at 195-202 (explaining both sporadic and systematic adjudication).

226. See *id.* at 202-207 (contrasting the two methods of adjudication).

227. See *id.* at 52. England adopted the sporadic approach. See *id.* In 1897, England passed the Land Transfer Act that, in certain areas, made registration compulsory upon transfer. See *id.* In 1925, England adopted compulsory registration upon transfer throughout the country. See *id.* at 45-46. As of recently, however, there was still not a single district where all titles were registered. See *id.* at 52. This extremely slow registration of the English system stands in stark contrast to the universal registration of title achieved in Germany at the turn of the century by a systematic process combined with a period of 18 months for objection. See *id.* at 44-52.

228. See DALE & MCLAUGHLIN, *supra* note 15, at 31-32 (noting some positive traits of the sporadic approach).

229. See SIMPSON, *supra* note 9, at 268.

230. See DALE & MCLAUGHLIN, *supra* note 15, at 31.

231. See *id.* (explaining how parcels are placed on the register by area).

able because it is less expensive due to economies of scale. It is safer because it gives maximum publicity to the determination of land rights within a given area. Finally, it is more certain because adjoining land parcels are investigated simultaneously.<sup>232</sup>

The adjudication process typically involves an adjudication officer in the field who is responsible for making the necessary decisions, a demarcation officer who is responsible for marking out the parcels, a survey officer who surveys the boundaries, and a recording officer who takes note of all decisions reached.<sup>233</sup> One official may undertake more than one of these functions.<sup>234</sup> It is extremely important that maximum publicity is given when adjudication work starts in a given area, that the parties are kept well informed throughout the process, and that adjudication officers work with a committee of local residents.<sup>235</sup>

Maximum publicity includes informing those parties with land interests when adjudication will occur to allow them sufficient time to collect evidence and make their claim.<sup>236</sup> At the time of adjudication, the parties present their claims and the recording officer notes the officer's judgment.<sup>237</sup> At some point, the boundaries must be demar-

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232. See SIMPSON, *supra* note 9, at 194-207 (favoring the systematic approach); see also DOWSON & SHEPPARD, *supra* note 12, at 94. The systematic approach has been used extensively on the African continent. See SIMPSON, *supra* note 9, at 197-202, 268-91. Although the systematic approach is generally preferable if resources are available, a gradual process of decollectivization in some transition economies may make it necessary for such countries to employ the sporadic approach. See *id.* at 204-05. This is especially true when an effort is being made to trace priority rights back to pre-communist owners.

233. See DALE & MCLAUGHLIN, *supra* note 15, at 32 (describing the roles of the multiple individuals involved in the adjudication process).

234. See *id.* (noting that the adjudication, demarcation, and survey officer can overlap in responsibilities, thereby requiring only one individual to complete the entire process).

235. See *id.* at 33 (explaining that announcements over the local radio or in the local press are useful in informing the public). It is crucial that this committee not be dominated by large landowners in a traditional LDC setting or by collective or state farm leaders in a decollectivization environment. See PROSTERMAN & RIEDINGER, *supra* note 22, at 188. Furthermore, local committees assisting land reform programs should not be dominated by local elites.

236. See DALE & MCLAUGHLIN, *supra* note 15, at 33 (recognizing that allowing landowners notice as to the time and day ensures them adequate time for preparing their claims).

237. See *id.* (describing the process of adjudication).

cated and surveyed if they are determined concurrently.<sup>238</sup> The information gathered on the ground must be compared with existing land records and the knowledge of the local committee.<sup>239</sup> The adjudication results should be displayed in a public place and interested parties should be permitted a limited period in which to appeal the decisions.<sup>240</sup> The appeal process should normally occur in the court system, although appeals could be made to an executive official such as a Minister.<sup>241</sup> Once any appeals are settled, the results can be entered into the land register as a definitive statement of the official rights concerning land.<sup>242</sup>

A balance must be sought between having a "perfectly" accurate system, including several possibilities to appeal and a formal judicial handling, and a rapid process with limited appeals, in which the adjudication team's decisions are considered final. The former can impede and, at times, stop the work of title registration.<sup>243</sup> In general, an adjudication system that places courts as the initial mechanism for recourse does not seem to function well.<sup>244</sup> Courts rarely have field organizations and often have many other duties that make it difficult for them to undertake this process.<sup>245</sup>

## 2. Registration of State Grants

The closest approach to a clean slate in land holding occurs when the state disposes of land by statute or by its own initiative.<sup>246</sup> In such

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238. *See id.*

239. *See* LARSSON, *supra* note 4, at 107.

240. *See* DALE & MCLAUGHLIN, *supra* note 15, at 33.

241. *See* SIMPSON, *supra* note 9, at 282 (describing the Kenya Land Adjudication Act of 1968, which provides for appeal to the Minister).

242. *See* DALE & MCLAUGHLIN, *supra* note 15, at 33 (noting that the process may become finalized after appeal judgments are decided).

243. *See* GERHARD LARSSON, *Land Registration in Developing Countries*, in *WORLD CARTOGRAPHY XI* 42 (1971) (warning that a lengthy procedural appeal process can hinder adjudication).

244. *See id.* (suggesting that an adversarial system should not be the first recourse explored in resolving disputes).

245. *See id.* (acknowledging that the process may be overly burdensome for the court system).

246. *See* SIMPSON, *supra* note 9, at 193 (describing the situation in which the state grants itself title as the least complicated since the state does not examine whether any pre-existing rights exist).

cases, the state grants title that is absolute.<sup>247</sup> While it is easy to maintain a record of such grants when they are made, keeping the registry current is only a matter of entering any and all changes in the registry.<sup>248</sup> This is exactly what the initial Torrens systems did in Australia.<sup>249</sup> There was no process of adjudication for the authoritative ascertainment of land rights in Australia.<sup>250</sup> The Crown did not make a grant on the strength of being the registered proprietor, but rather on the assumption that all land not already the subject of a grant was Crown land.<sup>251</sup>

In some countries where the state has historically been the dominant owner of land, the government is currently introducing new forms of ownership and allocating land in new forms.<sup>252</sup> In such settings, the process for determining land rights is typically not complicated and no adjudication is necessary. For example, in Russia, where the government has introduced private property rights in land, no attempts have been made to trace title to pre-communist owners. Therefore, the process for determining title is relatively simple.

### *3. Conversion of Deeds Register (or Recordation System)*

If the country already has some system of deeds registration in place, recourse to adjudication in the field may be avoidable.<sup>253</sup> If the

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247. *See id.* A similar situation exists when the state does not grant absolute title, but grants long-term use rights to land. Land registration systems can and should exist in such cases, especially if the land-use rights are alienable.

248. *See id.*

249. *See infra* notes 251-252 and accompanying text (offering the initial Torrens system in Australia as an example of the state granting title that was absolute).

250. *See* SIMPSON, *supra* note 9, at 193 (noting the conditions precedent in Australia).

251. *See id.* at 194-95. This, of course, ignored any existing customary rights in the land and made the initial implementation of the Torrens system in Australia, in fact, a redistributive land reform because customary rights of native peoples were transformed as legal rights for the Crown. *See id.* This danger still exists in implementing land title registration systems in developing countries. Land title registration should not change existing rights.

252. *See* Andrei A. Baeu, *The Privatization of Land in Russia: Reforms and Impediments*, 17 *LOY. L.A. INT'L & COMP. L.J.* 1, 2-26 (1994) (discussing the evolution of land ownership in Russia from a system that was based on state ownership).

253. *See* DALE & MCLAUGHLIN, *supra* note 15, at 33 (recognizing that adjudication may not always be required, as in cases where there is sufficient recording of the physical boundaries).



deeds registry is fairly complete, and there is adequate mapping of boundaries, a careful examination of the deeds may be sufficient to identify the parcels and their associated property rights.<sup>254</sup> However, even when existing records are fairly complete, some fieldwork is generally necessary.<sup>255</sup> Ascertaining existing land rights by relying more heavily on documentary evidence is quicker and less expensive than a systematic adjudication based on field visits.<sup>256</sup>

#### 4. *Simplifying Determination of Land Rights in Developing Countries*

Because fieldwork costs are relatively high, it is especially important in countries with significant resource constraints to simplify adjudication work and avoid fieldwork when possible.<sup>257</sup> One way to accomplish this is to use older, existing maps as much as possible to arrive at a basic accounting of parcel ownership throughout the territory and then use fieldwork only to fill in needed details.<sup>258</sup> Another strategy is to use aerial photography as much as possible to interpret boundary systems in the office and thus lessen fieldwork.<sup>259</sup> These two methods can be effectively combined.<sup>260</sup>

Less-developed countries may also be able to reduce costs by using provisional registers. If it is difficult or impossible to conclusively determine rights in land, such provisional registers may provide an effective option.<sup>261</sup> The idea is that the registrar issues a provisional title, which becomes valid as a formal guarantee within a stated period of years if no valid claims are asserted against the provisional title.<sup>262</sup> This diminishes the demand for thorough title

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254. *See id.*

255. *See id.*

256. *See* LARSSON, *supra* note 4, at 104-05 (providing a discussion of adjudication relying primarily on documentary evidence); *see also* SIMPSON, *supra* note 9, at 207-12.

257. *See* LARSSON, *supra* note 4, at 150.

258. *See id.*

259. *See id.*

260. *See id.*

261. *See infra* notes 262-263 and accompanying text (explaining the role of provisional registers).

262. *See* SIMPSON, *supra* note 9, at 215 (asserting that the five-year period used in Singapore is adequate, while the twelve-year period in Penang and Malacca is too long). In Germany, when converting from a registration of deeds system to a

searches as well as lengthy and costly legal proceedings. Provisional registers are also useful when it is difficult to show an unbroken chain of ownership transfers. Publication of the grant of provisional title should be done in a manner likely to notify potential claimants. With the use of provisional titles, time often accomplishes the same effect as more costly investigations.<sup>263</sup>

## B. DEMARCATION

Demarcation is a question that includes both legal and technical aspects. In general, the type of procedure and the existing boundary system are of great importance in selecting a system of demarcation.<sup>264</sup> Unfortunately, however, selection of both survey and demarcation methods is often based on technical perfection instead of more important factors, such as available resources, the need to rapidly implement the title registration system, and the degree to which most boundaries are visible on the ground.<sup>265</sup>

Larsson defines two different procedures for demarcation.<sup>266</sup> The first method entails fixing precise boundary positions on the ground in the presence of the parties.<sup>267</sup> If a boundary dispute arises, the boundary is determined by an officer or a court, but includes a right of appeal.<sup>268</sup> After the positions of the boundaries are fixed, they are permanently marked.<sup>269</sup> This method is generally, but not necessarily, combined with accurate ground surveying or large-scale aerial surveying with pre-marking.<sup>270</sup>

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registration of title system, the law allows for preparation of registered titles from the existing records by allowing only 18 months for claims. *See id.* at 217. New Zealand was able to bring all privately owned land onto the title register within 20 years using a 12-year period. *See id.* at 213.

263. For a detailed discussion of the arguments for and against provisional titles, including England's unsatisfactory experience with "possessory titles," see SIMPSON, *supra* note 9, at 212-18.

264. *See* LARSSON, *supra* note 4, at 100 (noting the factors that are given more weight in comparison to other relevant economic factors).

265. *See id.*

266. *See* LARSSON, *supra* note 4, at 98-100.

267. *See id.*

268. *See id.* at 98.

269. *See id.*

270. *See* LARSSON, *supra* note 4, at 98-99 (noting that the monumentation of parcel boundaries is generally achieved either by placing corner beacons and pegs in the ground, constructing linear features such as walls and fences, or by growing

In the second method, the boundaries are determined based on ground features that are noted either from aerial photos or ground surveys. These boundaries are not fixed legally, nor are they physically marked unless the parties insist.<sup>271</sup> The second method is much cheaper and faster in most cases. Often, adjoining landowners will agree on the size and shape of their parcel of property, but are unable to agree on the actual boundary.<sup>272</sup> The first method may invite lengthy and unnecessary disputes.<sup>273</sup> The method chosen should depend on the accuracy demanded or desired by landowners. Owners of large, inexpensive, rural plots are less likely to be concerned about accuracy or physical demarcation than owners of small, high-value, urban plots.<sup>274</sup>

Several other intermediate methods of demarcation exist. It is the practice of some countries to determine, but not to permanently demarcate, boundaries with the landowners present.<sup>275</sup> Instead, physical features such as low ridges, footpaths, and field limits are accepted as sufficient demarcation.<sup>276</sup>

### C. SURVEY

The main purpose of land registration surveying is to record, with some accuracy, the location of parcel boundaries so that disputed or uncertain boundaries can be redefined.<sup>277</sup> Such surveys, however, also provide other benefits, including providing a basis for producing maps that assist in land administration.<sup>278</sup>

Survey methods range from very simple and less expensive to very

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hedges); *see also* DALE & MCLAUGHLIN, *supra* note 15, at 33-34 (discussing monumentation); SIMPSON, *supra* note 9, at 126-29.

271. LARSSON, *supra* note 4, at 98 (describing differences between the demarcation methods). Many intermediate types of demarcation exist in addition to the two main types discussed. *See id.* at 99.

272. *See id.* at 99.

273. *See id.*

274. *See id.* (noting that physical features, such as paths and fields, are usually used in the landowner's presence to set preliminary boundaries).

275. *See id.*

276. *See id.*

277. *See* SIMPSON, *supra* note 9, at 3-12 (discussing the importance, function, and nature of land registration and ownership).

278. *See* DALE, *supra* note 137, at 11 (discussing the uses of cadastral plans).

complex, detailed, and expensive.<sup>279</sup> The choice among surveying and mapping methods generally involves balancing costs and accuracy. As mentioned above, this choice is too often driven by what is technically possible, rather than what is economical and necessary to provide the desired benefits.<sup>280</sup> Considering the degree of accuracy required for land title registration, Larsson states: "[I]t must be admitted that most of the benefits of cadastre/land-registration systems can be achieved even with rather low mapping standards . . . . Even simple large-scale maps make possible the identification of the plot on the ground and thus secure the connection to the land."<sup>281</sup> In fact, excessive precision can have a detrimental effect by creating dispute and conflict where none previously existed and resulting in extra costs and delays.<sup>282</sup>

In recent decades, the use of photogrammetric surveys and other types of aerial pictures has increased the number and types of survey methods available.<sup>283</sup> Several factors must be considered when deciding whether to use aerial pictures. First, making a survey with the help of aerial pictures is typically economical only when fairly large areas can be treated at the same time; that is, when a cadastral survey is done systematically area by area.<sup>284</sup>

Second, the usefulness of aerial pictures depends on topography, cover of vegetation, and the types of boundaries.<sup>285</sup> Hilly areas require more sophisticated and expensive photogrammetric methods

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279. *See id.* at 93-136 (discussing in detail various survey methods). This paper does not address the technical aspects of survey methods, but summarizes issues to be considered in choosing a survey method.

280. *See DALE & MCLAUGHLIN, supra* note 15, at 13.

281. LARSSON, *supra* note 4, at 96. In fact, sometimes it is possible to establish useful records without any determination of boundaries. *See id.* For example, a World Bank project in Dar-es-Salaam, Tanzania, included measures to give urban squatters more secure rights to their homes, and thus, stimulate investments in housing. *See id.* All dwellings were numbered on aerial photographs, and using these numbers as identifiers, records of all accepted squatter units were established. *See id.* The squatter's rights were defined in mutual contracts that did not specifically describe boundaries. In this way, the squatters could support their right to stay in certain locations. *See id.* at 148-49.

282. *See id.*

283. *See id.* at 90-93 (noting methods for detailed surveys).

284. *See id.* at 95.

285. *See id.*

that eliminate errors due to altitude differences.<sup>286</sup> Heavy vegetation cover renders certain boundaries invisible, making it necessary to at least supplement the aerial photography with a ground survey.<sup>287</sup> If the boundaries are not visible from the air, pre-marking or a ground survey must be used. In general, the use of aerial pictures is most advantageous in open country with small, irregular fields having physical boundaries.<sup>288</sup> Much of the agricultural land in Asia, in particular, fits these conditions and as such, aerial pictures are a feasible option for much of the cadastral surveying.<sup>289</sup> Aerial pictures are also likely to be feasible in rural areas with large, regular fields having physical boundaries.

Third, the costs of aerial survey relative to ground survey depends on the wages paid. If wages are low, as they are even for technical specialists in most developing countries, ground surveys may be cost-competitive.<sup>290</sup>

In sum, because balancing the advantages of greater accuracy against higher costs and available resources is a matter of judgment, a flexible attitude is necessary in less-developed countries. The required accuracy should never be determined primarily by standards used in more developed countries or by a desire for technical perfection.

#### D. PRE-ESTABLISHMENT MEASURES

Before actually establishing the land registration system, government officials should undertake a process of assessment and preparation.<sup>291</sup> This process involves several steps including investigating the current situation, analyzing existing problems, defining principal goals, expressing and evaluating the benefits, estimating the costs, implementing pilot studies, choosing principal methods, and choos-

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286. See DALE & MCLAUGHLIN, *supra* note 15, at 113-18 (explaining the difficulty in attaining accurate aerial photos for demarcation).

287. See *id.* at 106-07.

288. See LARSSON, *supra* note 4, at 96 (noting that ground surveys, under these conditions, are expensive because of the irregular boundaries).

289. See PROSTERMAN & HANSTAD, *supra* note 22, at 39 (discussing China's "Household Responsibility System").

290. See DALE, *supra* note 137, at 129-30.

291. See LARSSON, *supra* note 4, at 73 (noting the importance of conducting feasibility studies).

ing priorities.<sup>292</sup>

### *1. Understanding the Current Situation*

The first task is to investigate and understand the current situation. Initial investigation focuses primarily on three areas: (1) existing tenure forms and legal structure; (2) existing land records and maps; and (3) available resources, both capital and human. Without a solid understanding of the current situation in these areas, it is difficult or impossible to assess needs or design a suitable title registration system.<sup>293</sup>

### *2. Identifying Problems*

After reaching an understanding of the current situation, one must evaluate the need for change. Evaluation of such a need includes consideration of the following factors: insecurity of tenure, the need for an equitable land tax, unavailability of banking credits, the importance of implementing agrarian reforms, lack of a functioning land market, and unavailability of an information base to facilitate land use planning and administration.<sup>294</sup> The identification of problems is crucial to assessing the need for title registration, designing a suitable registration system, and assessing the benefits that follow from the implementation of such a system.<sup>295</sup>

### *3. Defining Goals*

Policy makers must also define the principal goals of the land registration system. Is the land registration system to be used simply as a legal record of land rights? Will it also serve the purposes of taxation and tax collection? Or will the information base be organized in a way to serve additional purposes?

### *4. Listing and Evaluating Benefits*

Policy makers must also list and describe the expected benefits.

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292. *See id.*

293. *See id.* at 74.

294. *See id.* at 76 (explaining that the need to improve a cadastral land system often results from one or two problems).

295. *See id.*

This implies a discussion similar to that above in Part II.B of this article, but is limited to listing the benefits that are valid within the specific country context. These benefits should be evaluated, both in general terms and, where possible, in monetary terms.<sup>296</sup>

### 5. *Estimating Costs*

Estimating costs can be as problematic as evaluating benefits. Unlike many other development projects, there is likely to be little or no experience with a land registration operation. Cost figures from other countries should be used with great care since there are likely to be differences in institutional organization, methods used, and market wages. Costs attributed to survey and demarcation are generally the greatest component of total expenditures.<sup>297</sup>

### 6. *Pilot Studies*

Some pilot studies should be implemented in the field before a land registration system is implemented nationwide. While pilot studies have various objectives, they should be designed as field tests of the planned registration system. Careful and constant monitoring of the pilots is crucial to glean information necessary to improve the system. The need for pilot studies to test and refine systems and procedures will almost always outweigh interests of urgency in creating the land registration system.

### 7. *Principle Methods*

In establishing a land title registration system, decision-makers must also decide how to establish the system. Three main methods may be used:

1. Voluntary (sporadic) title registration upon application of the landowner.

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296. See LARSSON, *supra* note 4, at 76 (discussing how the study may be used to convince government officials of the need for change).

297. See *id.* at 77-78 (noting a 1974 Caribbean study where adjudication was combined with a simple method of parcel survey). The survey and demarcation costs were 40 percent and 28 percent, respectively. See *id.*; see also LARSSON, *supra* note 4, at 77-78 (citing L.J. Howells, *The Cadastral Survey and Registration Project in the Caribbean*, CHARTERED SURVEYOR (1974)); DALE, *supra* note 137, at 101-03 (estimating survey costs).

2. Compulsory (sporadic) title registration whenever land is transferred or partitioned.

3. Compulsory (systematic) title registration of all land supported by comprehensive surveys carried out area by area.<sup>298</sup>

Option 1 is often used in developing countries because it is easy to implement, and it is possible to require the landowner to bear all costs.<sup>299</sup> It was also used in England for several decades in the late nineteenth century.<sup>300</sup> However, this method has proved largely ineffective.<sup>301</sup> The costs are high (per parcel) and, more importantly, it can be decades before any appreciable amount of land is registered. The effectiveness of any title registration system depends on the proportion of land parcels with registered titles.

Option 2 is similar to option 1, but is less time consuming.<sup>302</sup> It is effective in two broad cases: (1) where a chain of ownership is well established and the parcels are, or can be, well defined;<sup>303</sup> and (2) in areas covered by good topographical maps that can be used as registration maps.<sup>304</sup> Option 3 involves much lower costs per parcel because all parcels in an area are dealt with at the same time.<sup>305</sup> This option also allows for registration of an appreciable amount of land in a much shorter time period. It requires more resources up front, which often is a limiting factor. The resource limitations, however, can be dealt with in two ways. First, foreign aid resources can help fund the establishment of the registration system. Foreign aid funds, which typically must go toward specific projects that can be accomplished in a relatively short time period, are more likely to be used for a systematic method of establishment than a sporadic method.

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298. See LARSSON, *supra* note 4, at 80; see also SIMPSON, *supra* note 9, at 89-191.

299. See LARSSON, *supra* note 4, at 81.

300. See SIMPSON, *supra* note 9, at 42-45 (discussing the 1862 failure of the English registration of land title).

301. See DALE & MCLAUGHLIN, *supra* note 15, at 32 (noting that without some measure of compulsory adjudication, registration will generally fail).

302. See LARSSON, *supra* note 4, at 81 (indicating the differences between land registration options).

303. See *id.*

304. See *id.* (explaining that Option 2 is useful where boundaries follow visible features on the ground).

305. See *supra* notes 228-244 and accompanying text (discussing systematic adjudication).



Second, systematic registration can be restricted to specified areas and extended only as fast as resources become available.

### 8. Priorities

It is necessary to decide whether the registration system is to cover the entire country or only selected parts.<sup>306</sup> Selection of priority areas depends on the problems the registration system is intended to solve. If the primary goal is to solve agricultural problems, rural areas with intensive, commercial farming might be considered first. If the primary goal is to facilitate an urban land market, effort might be directed toward major cities. If the primary goal is to reduce disputes, then areas with high degrees of litigation or unregulated squatting might be chosen first. In any case, it is wise to delay implementation in areas that pose difficult conditions with regard to such factors as land tenure or survey methods until the process is well established.<sup>307</sup>

## CONCLUSION

Foreign aid donors and developing country governments spend billions of dollars each year on land registration projects.<sup>308</sup> The politically controversial nature of redistributive land reform efforts caused many foreign aid donors and governments to shift their focus on land issues from structural reform policies to policies aimed at strengthening existing land rights.<sup>309</sup> Land registration systems contribute toward solving production, credit, poverty, and employment

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306. See LARSSON, *supra* note 4, at 82 (discussing that when setting priorities, it is necessary to determine in which regions or districts the process should start).

307. See *id.* at 82-83. Similarly, Dale & McLaughlin note that in a recent World Bank-supported land registration project in Thailand, priority was given to: "(1) areas where registering titles was expected to help in accessing credit for agricultural improvements; (2) areas with large amounts of undocumented land; (3) areas with a major effort to eradicate poverty; and (4) areas where the number of boundary disputes were high." DALE & MCLAUGHLIN, *supra* note 15, at 44.

308. See DALE & MCLAUGHLIN, *supra* note 15, at 2 (noting that the United States alone will likely spend \$90 billion between 1986 and 2000 on land registration-related projects). The authors further state: "For Third World countries, the potential for spending . . . on development of their own systems is limited only by their lack of available funds." *Id.*

309. See LARSSON, *supra* note 4, at 1-2 (discussing the need for land information).

problems. Land registration systems, however, will not address the fundamental problem of landlessness common to many developing countries. Furthermore, land registration systems, by themselves, will not transform insecure or otherwise inadequate tenure arrangements.<sup>310</sup> Land registration is not a solution to the most fundamental land problems, but should instead be an element of a larger strategy to improve conditions for the rural poor.<sup>311</sup>

Developing country governments should seriously study the why, when, what, and how of land registration. The answers are likely to be different for each country due to unique histories, cultures, geographies, legal systems, economies, and development processes. The framework for confronting the questions, however, need not be unique.

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310. See West, *supra* note 57, at 212.

311. See *id.* at 211-212.