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Cadastral "Reform" - At What Cultural Costs to Developing Countries?

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Abstract

This paper argues that the introduction of western cadastral concepts into communities with different land tenure systems have involved "cultural costs." The paper discusses these cultural costs and concludes that cadastral reformers need to re-design their product to fit the communities.

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1 Introduction

> National land laws are usually justified in the name of agricultural "development." Their introduction . . . has often followed the disparagement of indigenous land tenure systems as "constraints" to commercialization which needed to be removed. "Experts," then, propose land tenure "reforms" designed to sweep away the constraints.
> [Reyna and Downs 1988, 9]

Cadastral reform refers to planned and programmed changes to the cadastral system in a specific jurisdiction designed to improve its performance. Williamson [1990, 11] notes that it is "concerned with improving the operation, efficiency, effectiveness and performance of the cadastral system in a state or jurisdiction." The word "reform" implies that a cadastral system already exists and changes are being introduced to improve it.

Conditions which necessitate change, and what constitutes improvement will depend on actual jurisdictions. Some of the reasons for reform would include (for a more detailed discussion of reasons for cadastral reform, see, for example, Williamson 1990; Dale 1990; Robertson 1990; Fitzgerald 1990):

- changes in tenure arrangements as a result of social and/or political reforms, as is now taking place in Eastern Europe;
- exploiting new and more efficient technologies, e.g., use of electronic data and information processing devices;
- a realisation that the existing system does not meet the requirements of the administrators of land-based and land-related resources;
- the need to improve the ease and security of transactions in land as a means of fostering economic and social development.

Of the above and other reasons for cadastral reform, the reasons most relevant and cited for developing countries are the latter two: the need to facilitate the administration of land resources, and to make land holdings more secure so that land owners can obtain development funds on the basis of their land titles. While better administration of land is a desirable objective, the interests of the administrators are not always aligned with the

interests of the owners of the land. Also, the standard used to measure these "improvements" have been foreign, western-focussed standards that may not fit the cultural environments they were being introduced into and the expected "development" may not necessarily materialise.

This paper raises questions relating to cultural costs incurred in adopting European styled cadastral systems in non-European jurisdictions. The paper examines the relationship between the cadastral and the land tenure systems — from a western point of view, since the concepts did not exist in "developing" jurisdictions. Next the paper examines customary land tenure with examples from Africa and New Zealand. Then follows a section on the main cultural costs involved in cadastral "reform." The paper concludes with a recommendation that it is not the cadastral system which should be reformed, rather, reformers should emphasise the need for information for development, which will normally include tenurial information.

2 The Cadastral System as a Component of the Land Tenure System

Land tenure is the collection of relationships which exists between the members of a society by virtue of their occupation and use of land. It embraces:

> institutional arrangements pertaining to property rights and duties. It also refers to the division of decision making among tenure groups, as owners and users of land combined with other means of production. These institutional arrangements may be legally established, customary, or enforced by a combination of both. They define the rights of property owners and users. [El-Ghonemy 1990, 81-82]

Land tenure systems embody the arrangements whereby individuals or organisations gain access to economic or social opportunities through land. The various institutions of land tenure are instrumental in shaping the pattern of income distribution within a community [Ratcliffe 1976, 21]. It is therefore an aspect of the social system, and, "especially in agrarian societies, exerts a considerable influence on the structure and function of social systems" [Gadalla 1962, 12]. A system of land tenure establishes and maintains the size of the proprietary land units, a degree of flexibility and security to use the land and incentives and opportunities for the use. It concerns the complicated collection of rights to use space. These rights and privileges are curtailed by certain restrictions. The rights relating to land ownership include [Ratcliffe 1976, 22]:

1. a surface right which permits a landowner to enjoy the current use of the land;

2. a productive right which allows an owner to make a profit from current use of the land;

3. a development right allowing the owner to improve the property;

4. a pecuniary right whereby a landowner benefits financially from development value both actual and anticipated;

5. a disposal right allowing an owner to dispose of the land.

All these rights may vest in one person or different rights may vest in different persons. Also the rights and privileges are subject to restrictions imposed by law, custom or nature. There are therefore restrictive rights which vest in the society at large, and other individuals in the community. For example, the physical contiguity or proximity of one unit of land to another creates obligations on a landowner, and a complementary right, in the neighbour, and vice versa.

The operation of a land tenure system is therefore dependent on the institution of property because the rights have no meaning if they cannot be enforced. The rights are enforced by society or the state [Macpherson 1978]. The land tenure system therefore includes components for the enforcement of the rights by the society and the general administration of the system. These components may include tools for maintaining information about both the nature of the rights and the extent of the land in which they exist. In literate societies, this administrative component will usually include a system for maintaining a methodical record of the interests in parcels of land in the jurisdiction. If this record is public, and meets other criteria, it is called the cadastre, and the facilities and resources employed in its maintenance constitute the cadastral system. They include:

- resources, techniques and methods for delineating and demarcating the parcels of land within which the interests exist,

- the cadastral record — the graphical and textual data describing the land parcels and the interests in them, and

- an identification code for linking the record with the physical parcel.

In theory, the introduction of a cadastral system is not supposed to create new interests in land, nor abolish existing ones. It is only supposed to ascertain and record the interests recognised by the land tenure arrangements. Reform of an existing system should be expected to have even less effect on the land tenure arrangements. However, components in a systemic relationship respond to changes in neighbouring components. The cadastral system is part of the overall land tenure system. Cadastral reform is designed to improve the operation and efficiency of the cadastral system. It therefore affects the administration of, and transfer of interests in land. It may lead to more secure title or faster land transactions. More secure title and easier transactions may translate into more economic activity on the land. It therefore provides more incentive and opportunities for landowners to invest, with pecuniary advantages. These in turn may translate into income redistribution and changes in power relationships derived from the ownership of land.

In practice, therefore, changes in cadastral arrangement do affect the land tenure arrangements. This is in spite of declarations that "registration of title is a system of record and not a new substantive land law" [Dowson and Sheppard 1956, 72]. In fact, land registration laws have been used to effect changes in property rights and "[the Torrens system was intended] to get rid of much of the obscurity and complexity inherent in English land law" [Simpson 1976, 168]. Simpson suggests that title registration "is particularly needed in those countries where it is necessary to unify the law applying to those titles granted by Government in the days of colonial rule and those titles which have developed under customary law (or in spite of it)." Reform of the cadastral system should therefore consider possible effects on the land tenure system. This paper argues that some of these changes are not necessarily positive in developing countries.

3 Modernising Customary Land Tenure

3.1 Customary Land Tenure

Customary land tenure is the system of land holding and land use which derives from the operations of the traditions and customs of the people affected. Customary law derives from the accepted practices of the people and the principles underlying such practices. Another source of customary law is from rules made by chiefs in response to specific situations, e.g., draught or war, which once accepted by the people become "custom" even after the situation which prompted the rule has passed. In some countries, the colonial authorities established customary courts and other local authorities which had the power to

declare customary laws. With the introduction of the modern state and associated legal traditions, much of legal custom has evolved into case law and enacted law, and some principles which were established by legislation have filtered back into the "custom." A suggested definition of customary land tenure is:

> The rights to use or to dispose of use-rights over land which rest neither on the exercise of brute force, nor on evidence of rights guaranteed by government statute, but on the fact that they are recognized as legitimate by the community, the rules governing the acquisition and transmission of these rights being usually explicit and generally known though normally not recorded in writing. [quoted in Simpson 1976, 223]

The unwritten nature of customary laws, including those relating to land, is changing "in view of the rapid advance in education and literacy, and also in the mechanics of record-keeping ..." [Simpson 1976, 222]. Armstrong [1992] used the term "traditional" to refer to those aspects of customary laws which "they have been told were the customs of their people in the past."

The most important feature of traditional land tenure is the predominance of communal ownership of whatever rights exists in any land. A question that naturally arises is the nature of the rights of each member of the land owning group in the communal property. Does each person hold a separate individual interest over the whole land or an aliquot portion of it? Or does the community constitute a land owning corporate entity? Nwabueze [1972, 53-54] contrasts the rights of members of the community with those of co-owners or joint tenants under English law:

> There is perhaps no rule of customary law that is more firmly established than that no member of a land-owning community or family has a separate individual title of ownership to the whole or any part of the communal land. Indeed the constitution of the community, village or family for purposes of land ownership makes such a view of the nature of communal ownership quite untenable. ...
>
> The alternative of regarding the community, village or family as a corporate entity, distinct from its members, must also be rejected. With regard to the community or village it is necessary to distinguish its social from its political aspects. ... It is the community or family as a social unit which is pre-eminently important for this purpose; in this capacity the

> community, village or family is not a corporate entity in law, but merely a society or collection of persons with a common interest in land, all of whom are jointly, severally and directly liable for debts properly incurred on behalf of the land. [Nwabueze 1972, 53-54]

Another important feature of traditional land tenure are the variations in the rights and concepts which exist in different localities. In some traditional societies, land "was considered a natural endowment in the same category as rain, sunlight and the air we breathe" [Moyana 1984, 13]. Because of this view of land, it has been held by some writers that sale of land was forbidden. However, there is a more convincing argument that "though outright alienation was uncommon in the past, it was not positively forbidden by customary law" [Nwabueze 1972, 55]. Moyana [1984, 13] suggests that there was "no limit to the amount of land one could cultivate as land was always available in large quantities." The population was scant then and the needs of the community then were simple and concerned mostly with subsistence.

Another reason why alienation of communal land was not encouraged was due to the fluctuating and mythical constitution of the community, village or family. Okoro [1966] reports that Gboteyi, the Elesi of Odogbolu testified that "land belongs to a vast family of which many are dead, few are living and countless members are still unborn." A similar view is expressed by Sarbah on Fanti (Ghana) customary law:

> ... customary law says they who are born and they who are still in the womb require means of support, whereof the family land and possessions must not be wasted or squandered. [Sarbah, quoted in Okoro 1966, 3]

An important point of difference between various communities is the concept of ownership and of what is owned. Still following from the concept of land as natural endowment, it was sometimes "associated with sacredness as such Shona terms as 'pasichigare' and 'Dzivaguru' which are commonly used in Shona religious circles would suggest" [Moyana 1984, 13]. In Nigeria, land was the subject of allodial or absolute ownership, in contrast to qualified ownerships or estates in English law. However, the Privy Council observed that the term ownership is loosely used in West Africa: "Sometimes it denotes what is in effect absolute ownership; at other times it is used in a context which indicates that the reference is only to rights of occupancy" [Nwabueze 1972, 26]. Also, because of the communal nature of the ownership, and the rights of future generations, whatever right a group has in land is infinite and perpetual in duration.

3.2 Africa: Evolution or Mutation?

The cadastral system exists as a component of the land law and/or land administration system. In customary land tenure jurisdictions, the rules governing the rights, privileges and obligations regarding land use, and the administration of the land were usually not recorded. Transfers of interests in land were usually accompanied by ceremonies and/or feasts which make such transfer "public" knowledge. Concepts relating to cadastral system, as the colonial administrators knew them, did not exist in the cultural complex of the societies. The existing land tenure concepts did not make for easy administration by the colonisers. One of the main motivations for land reform is to facilitate the administration of land. The traditional land tenure systems, with its local variations and uncertainty of all the members of the land owning group, therefore qualifies for "reform." The indigenous land tenure arrangements were therefore interpreted in European terms or, where they could not be interpreted, replaced with new European arrangements.

These European-inspired law codes and concepts, including land registration laws, did not provide for many rights which existed under traditional land law. These customary rights could not be accommodated by the wholesale introduction of western-styled land registration systems. It was recognised that while some of these rights might appear to be harmful to economic development, many of them were found to be so strongly entrenched in the social organisation of the communities that a summary abolition of them might almost destroy the very fabric of society, and might throw up far greater social and economic problems than it could hope to solve:

> It is preferable that the natural evolution of land tenure should not be arbitrarily interfered with, either on the one hand by introducing foreign principles and theories not understood by the people, or on the other hand by arresting progress in evolution, by stereo-typing by legislation primitive systems which are in a transitional state. Each advance should be duly sanctioned by native law and custom, and prompted by the necessity of changing circumstances ... [Lord Lugard, quoted in Obenson 1977]

This "unileal evolutionism" philosophy was predicated on the belief that the changes meant progress because it can "be traced in every civilization known to man," wrote Sir F.J.D. [later lord] Lugard in The Dual Mandate in British Tropical Africa [quoted in Shipton 1988, 96]. This philosophy was reflected in the land laws introduced in West Africa by the

British, where elders and traditional administrators were called as expert witnesses on traditional law and customs.

Of all the supposed ills of the customary systems of land tenure, the feature considered most serious was group or communal ownership of land, and private ownership was considered progress to be encouraged. Communal ownership, however, is very resilient and would not evolve away. Two main reasons account for its resilience. First is the kinship and lineage organisation of society whereby descendants of a common ancestor live together and discourage "immigration" into their community. The second is that "access to land in most of rural Africa continues to be determined by indigenous systems of land tenure" [Bruce 1988]. The most important source of land rights is by inheritance. Before the introduction of the European concept of testacy, which is still not very commonly observed, a man's land rights upon his death either devolved upon his children as family property or reverts to a communal pool for reallocation by the responsible authorities. Nwabueze [1972, 45-46] notes that, in Nigeria, the devolution of the property upon children "applies with equal force even where the property has been acquired and held by the intestate under English law. The operation of this rule imposes a severe limitation upon the process of individualisation; for it means that whatever progress is made in one generation is stultified in the next."

It is therefore not surprising that the natural evolution approach will not be supported by all. Simpson [1976, 226] suggests that because "the pace of political, social and economic change in the modern world has been so rapid that there simply has not been time for evolution", it may "prove necessary to replace customary law rather than wait for it to evolve." This latter approach was followed in Kenya where "in the 1950s, the decision was taken, as a matter of major Government policy, to convert customary tenure to full individual ownership in order to promote the agricultural development which the uncertainty of customary tenure inhibited" [Simpson 1976, 200].

The usual outcomes have tended to be the provision of dual systems in which some lands are held under customary tenure while others are held under "modern" tenure. Land owners are encouraged to "convert" to the "modern" system in order to gain certain advantages, like access to development loans. The result is that informal arrangements, outside the ambits of the law, generally develop as people strive to get the best of the old and the new. The cadastral system does not only have to deal with concepts not provided

for in the original design, but also with these new developments, which even the people cannot interpret.

3.3 New Zealand: Possession vs Ownership

Communal ownership of land in contemporary times has come to denote wealth and associated status in the community. It is rarely a sign of anything more than an arbitrary social standing. In other times and places, for example pre European occupation of New Zealand, land has been associated with Mana. Mana is,

> the enduring, indestructible power of the gods. It is the sacred fire that is without beginning and without end. ... In modern times the term has taken on various meanings, including the power of the gods, the power of ancestors, the power of the land, and the power of the individual. [Barlow 1991]

Barlow goes on to say, ... "mana whenua [whenua, meaning land] is the power associated with land; it is also the power associated with the ability of the land to produce the bounties of nature. When the world was created, the gods implanted this procreative power within the womb of Mother Earth. By the power of mana mauri all things have the potential for growth and development towards maturity. There is another aspect to the power of land: a person who possess land has the power to produce a livelihood for family and tribe, and every effort is made to protect these rights."

It is paramount that the present meaning of "power" is not confused with the meaning of the word in the context of Barlow's quotes. The difference is subtle but important. Māori power has more to do with mana, respect, responsibility and leadership for people rather than power for the exclusion and dominance of people. Power is a responsibility not to be used to dominate others and render them subservient. So it is wrong to assume that land ownership (guaranteed by the state) within a modern cadastral system will enhance mana. Quite the reverse. Land ownership is guaranteed to the extent that it precludes ownership by others; which is the reverse of the intent of Mana Whenua..
There is a recognition that colonialists have failed to understand the important nuances of indigenous possession of land. Crocombe, writing in "Land Tenure in Oceania" (p16) edited by Lundsgaarde, comments that,

> A common problem following European contact is that the colonizing group grasps the vital pattern but does not fully understand (or consciously ignores) all the subsidiary processes at work in the system. [quoted in Manatu Māori 1991, 13]

Crocombe goes on to depict a series of rights of access, of use, of control, of transfer and so on which may be found in tribal societies. Such a typology provides a much better fit with what is known of pre Pakeha Māori land tenure usage than the word ownership in English practice, with its connotations of the exclusive exercise of all rights over the property in question.

In part these concerns have been addressed by the Māori Land Court and the acceptance of Māori land. Māori land being land under the jurisdiction and administration of the Māori Land Court for the possession (avoiding the word "ownership") by Māori. Its registration is administered under the Māori Land Act and is a separate system running in parallel with the Torrens System.

There may be an irresponsible tendency to comment on the success or otherwise of this duality but Stokes provides a poignant warning:

> It can not be assumed that one can move into the Māori world and ferret out interesting information which is then recognised and published for the edification of the world at large. It can not be assumed that research is as simple as that in the Pakeha world either. However, too many Pakeha researchers fail to see or understand that there are other dimensions to the value of knowledge; that the perceived purpose of the research may be irrelevant in Māori terms; that the Māori "guinea pigs" provide answers (if they cooperate at all), which they think the researcher wants, out of politeness and hospitality; or may even occasionally deliberately distort responses according to a Māori logic not perceived or understood by the researcher. [Stokes 1985]

For an in-depth understanding of Māori land and land related culture the reader is referred to the seminal work by Kawharu [1977].

4 Issues Relating to Cultural Costs

4.1 Acculturation and Cultural Cost

Culture refers to the "complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by [a person] as a member of society" [quoted in Harris 1985, 114]. It refers to, among other things,

> prevailing modes of dress; routine living habits; food preferences; the architecture of houses and public buildings; the layout of fields and farms; and systems of education, government, and law. Thus, culture is an all-encompassing term, which identifies not only the whole lifestyle of a people but also the prevailing values and beliefs. [de Blij and Muller 1986, 136].

Culture is not static. Simpson [1976, 226] points out that "all societies would develop or adapt older institutions to cope with new situations." These changes occur especially when a society comes into contact with other societies with different cultural traits. In such contacts, traits of the stronger culture are usually adopted by the weaker. The weaker culture may only undergo minor changes, or it may be substantially changed. During acculturation, as the process is called,

> certain societies have been fortunate enough to be able to select those elements of an alien culture to be adopted, but others have experienced acculturation through superimposition. To a greater of lesser degree, the recent history of much of America, Africa, Asia, and Australia has been a history of Europeanization, as the beliefs, values and practices of European cultures were imposed on indigenous societies. [de Blij and Muller 1986, 149]

A cultural cost is incurred when the adoption of an alien culture trait results in a net disadvantage for the weaker society. Thus when a society gives up its nutritionally balanced diet for the "richer" diet of a dominant culture, they may incur a cultural cost when dietary illnesses previously unknown in the society start occurring. Colonialists introduced European culture traits in developing countries mostly to facilitate their administration, but also because they regarded some of the culture traits of the colonies as inferior. Among the European culture traits introduced were language, religion, and land law and tenure arrangements. These changes have exacted some cultural costs on the people.

4.2 Facilitation of Credit

Most land reform policies are occasioned by a need to improve agricultural productivity. And among all arguments cited for land tenure reform, facilitation of agricultural credit is the most common. "The argument is that having private titles will help farmers develop their holdings by giving them something to mortgage as collateral for loans" [Shipton 1988, 119-20]. Field research in Kenya, where this policy was officially pursued, shows that farmers still refuse, "on principle or on economic calculation, to entertain the notion of land mortgages" [Shipton 1988, 120]. While European cultures have well-developed credit institutions and citizens are encouraged to borrow to establish credit-worthiness from proper management of borrowed funds and regular repayments, African cultures frown on excessive borrowing because in some cultures, a man's personal debts are inherited by his children: "The duty to repay those debts not settled by the executors passes to all those who inherit property from the deceased" [Lloyd 1962, 287]. It is therefore frowned upon for one to incur debts which will outlive them.

Moreover, interests in land being communally owned, a debt properly tied to the land would be the responsibility of all the members of the land owning group. Such loan has to be used in such a way as to benefit all members of the group. Though the living members of a land owning group have the right to exploit the land and sometimes to alienate it outright, the rights of the unborn are still respected and one would not tie a debt to something they own with another without the other's permission.

The possibility of a cultural cost involved in this push for a culture of land-secured credit is the high possibility of loss of the land. Shipton observed that much of the agricultural credit given against land collateral has been used for non-agricultural purposes. Not only are these purposes non-agricultural, they are nonproductive and therefore cannot service the debts. Some of the uses for which the loans are commonly put include paying children's school fees, financing a marriage ceremony, building a residential (not rent-yielding) home, securing expensive medical treatment and buying a new car. The result is an ever-worsening debt crisis, creating, rather than alleviating, poverty. The flip side of the mortgage doctrine is the possibility of foreclosure on failure to repay the debt. In the event of a foreclosure, it is not only the borrower of the land, but also the various relatives, living and yet-unborn, who will be deprived of their various rights in the land. This possibility of foreclosure also increases the likelihood of land concentration which is discussed below.

4.3 Land Concentration

Land concentration refers to a process of "accumulation of control or ownership of land or its resources, or any increase in access to these, for one group or category of persons at the expense of another or others less privileged" [Shipton 1988, 93]. Land is an important instrument of wealth, especially in areas, like developing countries, where the major source of income is from agricultural output [Koo 1982]. Berry [1988, 54] notes that:

> the effects of concentration of land ownership on economic growth and income distribution depend on the structure of the markets. If concentration permits land users to exploit economies of scale, output will grow. However, if concentration serves to create or reinforce monopoly power, enabling large landowners to extract higher rents or to control market prices (for land, commodities, or services), it may lead to inefficient resource allocation and levels of output below what the economy is capable of producing.

Berry points out that the above argument of neoclassical economic theory (along with arguments of other standard paradigms, e.g., classical Marxist theory) is based on an assumption of a particular role of the state which does not hold in Africa. Land concentration in Africa seems to have resulted in monopoly and associated increase in poverty for the deprived.

The most important force responsible for land concentration is the commercialisation of agriculture. The introduction of cash crops increases the value of some land due to proximity to the market or biophysical properties. Bruce [1988, 40] notes that in these circumstances, "competition for land increases and inevitably some members of the community, because they are more powerful or wealthy or aware, move faster than others." While economic theories of land distribution are based on the assumption that market forces will determine access to land, El-Ghonemy [1990, 141] hypothesises that "land ownership is more commonly secured by institutional means than by market mechanism." He explains that institutional means include:

> non-market arrangements such as inheritance, inter-family marriage, regulatory legislation for land redistribution, grants by the State or its sovereign, land grabbing by virtue of social power and official status, and other concessional arrangements between the State and plantation holders.

At independence, Kenya embarked on a programme of Africanization of the farm structure with financial assistance from the British Government, the Commonwealth Development Corporation and the World Bank. The programme resulted in new large landowners who were members of Parliament, Cabinet Ministers, senior civil servants, and urban businessmen. While these groups have the influence and/or money to exploit the new opportunities, they are not necessarily the best agricultural entrepreneurs. The point is that the introduction of a land market, which is one of the reasons often cited for introducing a cadastral system, does not solve the problems of poverty associated with land concentration in agrarian economies. More pertinent to cadastral reform, Shipton [1988, 106] reported the presence of wealth biases in the adjudication process in Luoland in Kenya. Officially, the adjudication committee were unpaid. However, disputants provided with food and drink on days they met. Poorer farmers who could not afford the entertainment backed away from their disputes.

4.4 Individualisation of Land Ownership

Individualisation or privatisation refers to processes which convert the ownership of land from the traditional land owning group to individual ownership. As already mentioned, a common feature of indigenous land tenure systems in developing countries is the group ownership of land by different forms of community organisations. Equally common to most land reform proposals for developing countries is the belief that this group ownership is bad and has to be replaced by individual or private ownership. One of the arguments against communal ownership is the difficulties in determining who has the proper authority to conduct transactions in the land, and for people who want to borrow money with land collateral to obtain the necessary consent of the members of the group. Moyana [1984, 7] points out that the success of any land-tenure system must be judged by the degree to which it satisfactorily meets the needs of the people it is designed to serve. These difficulties must have been the intension of the ancestors who devised the system, because they seem to have been designed to protect the rights of the unborn generations as well as of the dead. Okoro further explains that:

> Group property ensures group unity, solidarity and interdependence. These characteristics were more significant in the not-so-distant past when might and strength rather than the rule of law were instruments for the preservation of life and property, not only of the individual but of the community. [Okoro 1966, 3]

Individualisation of land ownership therefore threatens the social unity and interdependence in land owning groups. The introduction of modern lifestyles and the rule of law has not removed the need for such unity and interdependence, especially at the extended family level:

> The hooks of the extended family cut into the hearts and pocketbooks of almost every African. ... With its labyrinthine web of rights and duties, the extended family is a day-care, social security, and welfare system. It babysits the children of working parents and keeps the elderly from feeling useless. It feeds the unemployed and gives refuge to the disabled and mentally ill. ... This system of commerce and welfare does not follow free-market precepts, Marxist dogma, or the rule of law. It is governed by blood, of tradition, of guilt. With Africa stumbling through its third decade of hard times ... the extended family functions as a kind of home-grown glue. It holds together the world's poorest and most politically brittle continent. [Harden 1990, 63]

The above observation is especially relevant in the light of the economic structural adjustment programmes now being adopted by, and sometimes forced on, developing countries which make it results in a reduction of whatever social services had been available.

Though, as Simpson [1976, 232] points out, registration of title does not necessarily connote individualisation and provisions have been made in registration laws to accommodate family land, there is a misconception that registration implies individualisation. In addition, the strict principle of adjudication is not always followed and registration laws may be used to implement a policy of individualisation.

While individualisation may happen due to natural evolution, it is usually hastened by acculturation and land registration laws are used to implement or hasten the transition. "'Individualization' may be developing spontaneously, but registration of title formalizes it, and may indeed encourage it, even though specific provision can be made to retain family ownership" [Simpson 1976, 173]. Among the "natural" causes of individualisation are changes in farm crops, partition of land by the children of a deceased, outright grant of land to one's child or to "a foreigner." Whether individualisation occurs naturally or is imposed by law, several arguments are raised in its favour. Shipton [1988, 98] lists the arguments commonly given to support individualisation as facilitation of credit, security of tenure,

dispute reduction, scope for personal enterprise and soil conservation. These arguments focus on the micro-economic issues of efficiency. This economic efficiency of productivity has been achieved at a cost in terms of social equity, distribution of wealth and cultural values.

4.5 Gender Issues

The introduction of foreign land tenure systems also presents additional disadvantages for women who are already disadvantaged by the predominant patriarchy in the world at large. Studies suggest that women produce about 60-80% of the food in Africa [UNECA 1975], while men control the land on which the food is grown. This is true because "control" has been defined in western terms. Though the women's access to land was, and still is, principally by marriage, and would be described in western terms as indirect rights, those rights were protected by the group ownership of the customary tenure. Depending on the cropping system, women did have controlling rights to some farmlots. However, by adopting western land tenure arrangements, these rights were lost because the western land tenure systems are not equipped with the vocabulary to describe these "indirect" rights. How would one describe, in western land tenure language, the rights of the senior wife in a polygamous household, to the various farmlots which she apportions to her co-wives for use on an annual or semi-permanent basis, or the powers of the umuokpu (the "council" of married daughters of an extended family) to influence decisions, some of which may bear on land use, in the households of their "brothers"?

Because of the predominant patriarchy in the whole world, the rights which men in traditional societies had in land were easier to translate into, and interpret in, western terms and came to be recognised as the rights which existed in land, leaving the women out. Shipton [1988] found that the manner in which adjudication is conducted may also have work against women. In Luoland of Kenya, the refreshments given to the unpaid adjudication officers were prepared by women, leaving the men to discuss the existing rights in land without representation.

5 What is Needed?

What is needed has been hinted at by Dale [1990, 7] when he recommended, after discussing the deficiencies of title registration, that "[t]he key to evolution is to abandon

registration of title and to register the land itself, since that is the one permanent feature in the environment." Dale continues:

> Since the land is permanent, the list of owners can be held separately and provided that there are sufficient reporting procedures, such lists can be kept up to date without affecting the land. The multiplicity of owners can be held within a well structured data base, each share being cross referenced to the list of owners and to the basic spatial unit.

This paper would go further and recommend that what is needed in developing countries is not registration, per se, be it of title or land. What is needed is information for development and administration; land information comes by the way. It is contended that one reason why many well-meaning and well-planned land registration projects do not achieve the desired objectives is that in adopting these foreign ideas, emphasis has been in "what" processes and procedures are involved in a cadastral system, rather than in "why" a cadastral system is necessary. In developed countries, the questions relating to the necessity of cadastral systems must have been asked centuries ago and are no longer relevant. Cadastral systems can now be taken for granted and emphases have therefore appropriately shifted to improving it.

Should developing countries necessarily copy every "development" in "developed" countries? What really is development and how will cadastral systems help in achieving it? Negatively, development is concerned with the elimination of "malnutrition, poverty, disease, urban slums, rural stagnation ... " and positively, it is the process "aimed at fulfilling mankind's [sic] highest aspirations" [Clarke 1985].

Whether one adopts the negative or positive definition, the key role of a cadastral system in developing countries would be as an information system, providing information for long term planning and for the management of the resources associated with development. While most of the resources being managed is land-based, the information required to manage them is much more than tenure and ownership information. A complete information system is needed which includes layers relating to land use suitability, soil classification, rainfall statistics, drainage systems, elevation and, of course, ownership. It would include other data sets not related to land, e.g., personnel, educational and welfare requirements. While in some jurisdictions, the emphasis may well be on ownership information, in others, it may be on the "other" information. Information requirements will be jurisdiction dependent and will therefore vary according to the main economic activities

and/or priorities of the jurisdictions. Where investment in survey infrastructure has been made, western cadastral survey principles could continue to be adopted in defining the units of land for collecting the land-related data for the total development information system.

6 Conclusion

This paper has discussed the cadastral system as a component of the overall land tenure system. Its role has been presented as an administrative component of the social relationships arising from access to and use of land in a community. It is argued in the paper that the cadastre as conceived in western societies does not provide for land tenure arrangements in developing countries. Cadastral reform programmes have been driven by technical surveying principles, without consideration for the "cultural costs" to the communities.

What is needed is a concept of the "cadastral system"—if we insist on calling it that—which concentrates not on arrangements for land taxation and conveyancing, but rather on information for national and regional development. Designers of information systems should be able to design systems for development information which do not require the introduction of expensive survey infrastructure and new land tenure concepts. Though organisational restructuring accompanies the introduction of information systems, the clients are not advised to change their business in order to use the designer's pre-conceived notion of the role of the system, rather the information system is tailored to the "business objectives" of the clients. Feet are not trimmed to fit into the shoes, rather the pair that's too tight is returned to the dealer and exchange. It is time to re-think the cadastral concept as it relates to developing countries.

References

Armstrong, A.K. 1992. Struggling Over Scarce Resources: Women and Maintenance in Southern Africa. Harare: U of Zimbabwe P.

Barlow, C. 1991. Tikanga Whakāro. Key Concepts in Māori Culture. Auckland: Oxford University Press.

Berry, S. 1988. "Concentration Without Privatization? Some Consequences of Changing Patterns of Rural Land Control in Africa." In Downs and Reyna 1988, 53-75.

Bruce, J.W. 1988. "A Perspective on Indigenous Land Tenure Systems and Land Concentration." In Downs and Reyna 1988, 23-52.

Chin, J. J. 1971. Original Land Titles in Hawaii. Private publication Jon Jitsuzo, (Library of Congress Cat. Card 61-17314).

Clarke, R. 1985. Science and Technology in World Development. Oxford: Oxford UP; Paris: UNESCO.

Dale, P.F. 1990. "International Trends in Cadastral Reform—or Registration of Title, Is It Time for a Change?" In Jeyanandan and Hunter 1990, 2-7.

de Blij, H.J., and P.O. Muller. 1986. Human Geography: Culture, Society and Space. New York: Wiley.

Downs, R.E., and S.P. Reyna, eds. 1988. Land and Society in Contemporary Africa. Hanover: U P of New England.

Dowson, E., Sir, and V.L.O. Sheppard. 1952. Land Registration. 2nd ed. London: HMSO.

El-Ghonemy, M. R. 1990 The Political Economy of Rural Poverty: The Case for Land Reform. London: Routledge.

Enriques, G. et al. 1988. Ka Laahui Hawaii—The Sovereign Nation of Hawaii, A Compilation of Legal Materials, Honolulu: Native Hawaiian Land Trust Task Force.

Fitzgerald, F. 1990. "Implications of Cadastral Reform for Land Information." In Jeyanandan and Hunter 1990, 208-20.

Gadalla, S.M. 1962 Land Reform in Relation to Social Development: Egypt. Columbia: U of Misouri.

Harden, B. 1990. Africa inventing itself. New York: Norton

Harris, M. 1985. Culture, People, Nature: An Introduction to General Anthropology, 4th ed. New York: Harper and Row.

Jeyanandan, D., and G.J. Hunter, eds. 1990. Proc. National Conference on Cadastral Reform '90. Melbourne: Department of Surveying and Land Information, The U of Melbourne.

Kawharu, I. H. 1977. Māori Land Tenure—Studies of a Changing Institution, Oxford: OUP.

Koo, A.Y.C. 1982. Land Market Distortion and Tenure Reform. Ames: Iowa State UP.

Lloyd, P.C. 1962. Yoruba Land law. London: OUP.

Macpherson, C.B. 1978. "The Meaning of Property." Property: Mainstream and Critical Positions. Ed. C.B. Macpherson. Toronto: U of Toronto Press. 1-13.

Manatu Māori. 1991. Customary Māori Land and Sea Tenure—Ngā Tikanga Tiaki Taonga Oo Neherā, Wellington, New Zealand: Manuta Māori (the Ministry of Māori Affairs).

Moyana, H.V. 1984. The Political Economy of Land in Zimbabwe. Gweru, Zimbabwe: Mambo Press.

Nwabueze, B.O. 1972. Nigerian Land Law. Enugu: Nwamife Publishers Ltd; Dobbs Ferry, NY: Oceana Publications, Inc.

Obenson, G. 1977. Land Registration in Nigeria. Lagos: U of Lagos.

Okoro, N. 1966. The Customary Laws of Succession in Eastern Nigeria. London: Sweet & Maxwell.

Ratcliffe, J. 1976. Land Policy: An Exploration of the Nature of Land in Society. London: Hutchinson.

Reyna, S.P., and R.E. Downs. 1988. Introduction. In Downs and Reyna 1988, 1-22.

Robertson, W.A. 1990. "Cadastral Reform—Why?" In Jeyanandan and Hunter 1990, 201-207.

Shipton, P. 1988. "The Kenyan Land Tenure Reform: Misunderstandings in the Public Creation of Private Property." In Downs and Reyna 1988, 91-135.

Simpson, S.R. 1976. Land Law and Registration. London: Surveyors' Publications.

Stokes, E. 1985. Māori Research and Development, A research paper prepared for the Social Sciences Committee of the National Research Advisory Council.

UNECA (United Nations Economic Commission for Africa). 1975. "Women and National Development in African Countries: Some Profound Contradictions." The African Studies Review 18(3): 47-70.

Williamson, I. 1990. "Why Cadastral Reform?" In Jeyanandan and Hunter 1990, 10-15.