

Toward a 2015 Vision of Land

Jim Riddell

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Abstract

This chapter analyses the contributions of the invited authors in terms of major global trends in land use. Our existing institutional arrangements will have to make major innovations to handle the way land resources are being traded and exploited today. The chapter examines the new conceptual tools and ideas that are emerging to address the type of land administration needed for sustainable land use.

About the Author

James “Jim” Riddell was born in Molalla, Oregon. He took his Ph.D. in Anthropology and Geography at the University of Oregon with a special interest in land issues. He joined the University of Wisconsin first at the Oshkosh Campus and then at Madison and became one of the Program Faculty at the Land Tenure Center. In 1987 he took a leave of absence to become Senior Land Tenure and Settlement Officer at FAO, in Rome. Later he was asked to stay on as the Chief of FAO’s Land Tenure Service. He Retired from both the University and FAO in 2000. Since retirement he has continued to advise governments on public land policy and has served both as a faculty member and a course coordinator at the International Center for Land Policy Studies and Training.

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Toward a 2015 Vision of Land

Why The Themes in This Book

The previous chapters have covered a range of topics that at first glance might appear only marginally related. We have had chapters on urban sprawl, land taxes, the economics of genetically modified crops, land law and the dynamics of what constitutes what we mean by land and natural resources and asked Ian Williamson to write about the future of spatial data analysis. At first glance it might appear to be a *potpourri* of papers collected at random from a conference.

This, however, would be the wrong conclusion. Each of the authors and their selected topic were carefully recruited by the ICLPST and the Lincoln Institute¹ to address the theme of what will be our vision of land in less than a decade's time. 2015 is the target date that the members of the United Nations have agreed to for real progress in meeting the Millennium Goals². The achievement of these goals will, quite naturally, involve new and innovative uses of land. This chapter has the task of braiding together these seemingly diverse visions into the coherent message we first set out to illuminate. Hopefully our efforts will go beyond the temptation to try and predict the future of land policy and administration. Such efforts are almost always wrong and provide little more value than humorous examples of speculative thinking to future generations. Thus we have kept our time horizons fairly close – 2015—which is less a prediction and more of a prescriptive essay.

It takes no crystal ball to clearly see that we are in the midst of a series of fundamental processes that are changing forever the nature of the human – land equation. In this volume we have focused on: public finance, local economic development, institutional reform, and the impact of technology on land administration. Cross-cutting all these is the need to find the institutional means to manage competition for local resources that is becoming more global every day. As the chapters by Bromley and Bebbington make clear, the competing demands for the use of land causes us to see the earth and its resources in new ways. Thus, as “land” is an ever changing concept it is land tenure and resource tenure that is our unit of analysis, not “land” per se. The fundamental policy question that faces us in “toward a 2015 vision of land” is how are decisions to be made in who has the rights to how much, for how long and for which purposes.

Globalization of Essential Resources

During the rapid economic growth that has characterized the early years of the present decade, we have had our attention focused on a globalization of the market place. So many of the products that used to be made in Japan, Italy, Taiwan or the United States are now made in China, Malaysia, Honduras or places many consumers would have difficulty finding on a world map. This is, however, just the tip of the iceberg. Much more important for the person interested in “land” is the globalizing trends in natural

resource use and control on the one hand and the transactions in these resources, on the other.

First is the fact that we already know that essential resources such as water and air are parts of global natural systems. The earth's water system cannot be defined by any national boundaries. It involves oceans, rainfall that respects no human defined boundary and rivers that can only be marginally controlled. In the last century we built on the very elegant water and riparian rights regimes that had been elaborated over the centuries as a very special branch of land tenure. Perhaps the biggest development was to shift our analysis of water systems to examinations of whole water basins. This led to the realization that water law would have to be much more attuned to transboundary issues, as there was hardly a major river basin system in the world that did not involve two or more national as well as multiple sub-national jurisdictions. The last quarter century has witnessed rapid progress in water registries and water rights markets by global firms.

The globalization of transactions in resources like water that have traditionally been viewed as free goods (eg., belonging to God in all major schools of Islamic law) will become the norm in this century. Thus it is not surprising that many land administration specialists are working on various approaches to water markets, water user fees and taxation systems for allocation, affluent discharges and so forth. These market mechanisms have become well established almost under the radar of most citizens. This also includes the growing awareness that the oceans that make up three quarters of the globe are no longer sustainable as an open resource. Thus, it is not surprising that ocean resource cadastres and registries and similar innovations are an exciting area of research, as well as legal and land administration institutional development.³

We all know that water is one of the resources that are sure to cause transboundary and international conflict in the coming decades if we are not successful in finding institutional means of allocation. The global warming debate is about the same transboundary nature of the atmosphere. The air we breathe, the emissions we discharge and the shared threat and hence responsibility is something that will go on long after 2015. The point that we wish to emphasize here is that land and natural resource administration is already becoming global, fortunately so far through scientific debate, arms length negotiations on treaty agreements and open markets.

Demographic Concentration and an Urban World

This is the year when the demographers at the United Nations have declared that there are now more people living in urban centers than in rural communities. This reversal of the historic demographic relationship between rural and urban is accompanied by the just as dramatic dominance of urban culture and its values. There is hardly a village so rural that it does not today have some member who lives in an urban setting. And everywhere rural populations are demanding inclusion in those institutions that until recently were urban based. The youth in rural households know the same music that is listened to by their urban cousins, try to wear the same clothes and share the same values. Rural songs are

reworked in urban centers and emerge on the radios, I-pods and party nights in villages that have no historical connection to their place of origin.

At the same time as we are witnessing the acceptance of urban cultural values by rural residents, we are also witnessing the declining relative importance of rural economy. When the first Regular Session was offered by ICLPST in 1969 the world was predominately rural, both in terms of population and culture. Indeed, the collaboration between the Lincoln Institute and ICLPST was primarily concerned with land reform in those days. This was because it was widely recognized that agriculture was the “engine of growth”. Dr. Lin Kuo Ching has outlined for us how in the ensuing years Taiwanese agriculture has gone from its prime position to a relatively small component in terms of national GDP. This is a phenomenon that is evident almost everywhere today. Furthermore, in Taiwan nowadays, as in the US, the EU, Japan and many other OECD countries, close to 80% or more of the income of existing farm families comes from off-farm sources. The Engine of Growth today is clearly the city, not the agricultural sector.

Thus, we have before us the really serious problem for Twenty-First century policy makers of how to make any kind of rural economy work. All the rich nations outside the CAIRNS group have had to resort to subsidies and other interventions just to keep anyone plying agriculture. There seems to be little agreement, theoretical or practical, for how to create a viable rural economy in the present age. Yet the chapter by Evenson demonstrates that there is no bypassing sound agricultural development. Those countries that have most neglected basic research on food crops, who have missed out on the Green and genetic revolutions are also those with the poorest and most food deficit populations. It has been popular in some circles to attribute evil intentions to the efforts of plant scientists to improve our basic food and material crops. But, as Dr. Evenson’s chapter on *Environmental Planning for Sustainable Food Supply* makes very clear, it is not how you “feel” about something that is important; it is what you “know” about it that counts. He points out that, since the First Green Revolution, even with its shortcomings, food prices have been falling at about 1% per year. In addition, the cost of production has also been falling by a slightly greater amount due to improved technologies.

Thus, those policy makers who have been convinced of the “prudence” of taking a wait and see attitude to adopting the genetic revolution in the agriculture of food and fiber have doubly consigned their rural producers to a lose – lose state of affairs: the cost of production and what the harvested crops are worth.

In addition, it has become an urban legend in all OECD countries that genetically modified crops are a major threat to biodiversity as they potentially will out perform and outbreed existing varieties. As Professor Ming-Chien Chen⁴ (陳明健) pointed out in his discussion of Dr. Evenson’s chapter, in 1900 there were over one thousand varieties of rice being cultivated in Taiwan. Today there is only a handful.

The chapter by Evenson emphasizes over and over again that one has to distinguish between the first faltering steps of the initial stages of the Green Revolution and subsequent modification as the lessons learned resulted in new and better science. The

same is true of the genetic revolution in agriculture. In the first phase, it is true that much focus was placed on finding exogenous genetic material that could be inserted into the DNA of existing high-performing varieties of common crops. Dr. Evenson's chapter discusses these. The reader has to realize, however, that agricultural science is not sitting still. Today the next phase of genetic "engineering" is focusing on attributes within the genetic make-up with an entire genus of a plant.

This new approach is the result of the falling cost of genetic sequencing. Now, it is more economical to look at all of the myriad varieties of say wheat or rice for what are the attributes that one would want for a crop in a given location, or for a given target set of customers (e.g., wheat products for sufferers of celiac diseases, for example). What this means is that the efforts by organizations such as FAO to preserve genetic material from all the world's food crops moves from being the avocation of a few scientists to a major new resource.

Diversity in genetic material is the one bright spot in the world's food economy. People everywhere are, thanks to a global economy, voting with their stomachs. In OECD countries, organic food is the fastest growing segment of consumer expenditures on groceries. It may come as a surprise to many food activists, but the green and genetic revolutions are compatible with the family run organic farms. High value natural food production requires a density of management that is not cost effective for the large industrial farms. Finding ways to grow a greater variety of foods, even food staples like wheat or rice, has catered to what appears to be an ever elastic market for food conscious consumers. No longer satisfied with just white rice, growing numbers of food-aware shoppers are opting for red rice, spelt wheat breads and other foods largely unknown to their parents, but perhaps recognizable to their great grandparents. The green and genetic revolutions that produced the "factory farms" have also made possible a closer fit between the economy of agricultural production and the urban market for diverse agricultural products that are produced through intensive agriculture on family farms.

To make things even more interesting, the future shape of urban growth is in flux. We can note, on the one hand, the huge literature that has grown up around the "centrifugal" growth represented in urban sprawl, and the rise of mega cities. UN Habitat, in its on-going Urban Land Tool Network estimates that the world's slums are growing by at least 50,000 persons each day and their figures say that on the day that this book appears in print, roughly one billion of the earth's inhabitants will be slum dwellers (www.ultk.net). On the other hand, the resulting costs of congestion, energy, commuting time and delivery of basic services has resulted in "centripetal" policy forces calling for more dense living arrangements. From the land tenure policy perspective we have no clearer long term answers for the growing urban half of humanity than we do for the shrinking rural half.

The chapter by Gerrit Knaap makes the case for a planning discourse in addition to efforts to get prices right. This is essentially a counter argument to the position of one school of economic thought that holds that the market and pricing can optimize urban growth if distortions are removed. For example: A) Under pricing of undeveloped land.

B) Under pricing of automobile travel. C) Public infrastructure is under priced and we can use impact fees that equal the marginal cost in each case. Knaap's argument is that if urban expansion or falling density is the problem, there is no theoretical reason why pricing is necessarily a superior approach to direct control.

The chapter takes a social welfare approach to urban sprawl. "...many of the attributes that define urban form – besides density- have impacts on household utility and thus social welfare. Much of urban growth is shaped by public investments in roads, sewer, parks, etc. which are largely unaffected by price systems. Pricing is important, but not sufficient. Also, it is not so easy to get prices right for all the attributes. Analysis of Portland Oregon urban growth looking at TAZ (traffic analysis zone) over time shows that "...transportation infrastructure is clearly a major determinant of urban form". It is hard to imagine how gasoline taxes, etc., would have much of an effect on street network design. In addition, networked parks, greenways and natural areas are becoming increasingly important to the decision of where to reside in the United States. Something more than pricing is at play in land use policy formation in a modern democracy. In his prepared comments Professor Feng summarized it thus: "One way of combining the advantages of the pricing and planning approaches is to make pricing for the planned or regulated land use."⁵

Dr. Knaap's argument is further amplified by Professor John C.Y. Lin's chapter. The concern in this paper is how one creates more density of use of existing urban environments. This is desirable not only to prevent sprawl effects, but also due to the extremely high land prices in Taiwan, as outlined in the chapter by Dr. Lin Kuo Ching. John's work suggests that there will be greater reliance on a redevelopment methodology. This approach is an outgrowth of the work on urban regeneration. The Taiwan situation makes the driving force of this tactic a way to optimize social and economic costs through two types of conservation: Cultural conservation and Nature conservation. This entails making better employment of existing land uses. There are certain problem areas to overcome in this method. The first is that it is usually more expensive to rebuild than it is to finance new construction. Another problem is an uncertainty of the response by the market. After all, regeneration as its name implies is an investment in a declining value area. Old facilities are less compatible with current demands for access, parking and convenience.

Thus, John argues that increasing the density of both use and investment in decaying urban centers, brownfields or environmentally fragile areas will not take place without government offering an incentive to balance out the additional costs. While not discussed in any of the chapters in this book, the reader can readily appreciate the relevance of this argument to the lives of the billion human living in the world's slums. To put it another way, current UN data indicate that even before 2015 fully one third of city dwellers will be living in inadequate housing with no, or only partial basic services (Ulrik Westman, UN Habitat, personal communication; www.ULTK.net).

The predisposition in developed democracies is that government will be called upon by the voting publics to play a more assertive role in confronting the negative effects of urban growth. This trend is associated with another that we all have observed and that is a demand for increased participation by voting publics in the decision making process. Luger and Maynard in their chapter analyse the growing trend for local government to take an active role in trying to attract new business through incentives as well as strategic investments in education, etc. As they point out using data from the US, to be competitive in the 21 Century State and Local government (SLG) must achieve a certain level (critical mass) in research and development centers (Top universities and so forth) as well as provide a high level of those factors that go into what constitutes people's perception of a good quality of life.

However, this trend of local government's proactive efforts to enhance its competitive position vis-à-vis other localities in attracting knowledge based industry is much more complex when we examine it against a larger background. Dr. Yu-Hung Hong of the Lincoln Institute looked at the same US data. What the data also show is that while people are voting for proactive development strategies by local and state government in the United States, the actual proportion of R&D investments by all levels of government (national, state and local) have actually fallen during the first half decade of this century. What has taken up the slack is a rapid increase in research and development financed by the private sector. As Dr Hong says: "These data imply that if municipalities want to promote R&D, the cooperation from the private sector is imperative." Given their limited financial capacity, communities compete with each other in terms of incentives such as tax abatements and land grants discussed by John Lin.

Dr Hong raises an even bigger issue in regard to land use and administration in the early decades of the present century. What is the role of these scattered local initiatives in the context of a global economy? For instance, the United States accounts for around 38% of the world's total R&D. In spite of this, around half is devoted to "defense" related research that may or may not ever have any civilian applications. Furthermore, in the US, government investment in R&D is overwhelmingly devoted to biomedical research. And as Dr. Hong suggests, it is not very likely that every competing municipality can become a major player in the biomedical field. Finally, total R&D investment as a share of GDP in the US is flat; it is rising in countries like China, Japan and South Korea.

Consequently, policy makers at the local level are faced with very hard choices. On the one hand voters want better urban environments, and businesses, especially knowledge-based enterprises, tend to locate where urban quality of life is already well established. On the other hand, achieving improvements in metropolitan design requires local government to make expensive "lumpy" investments, whether this is done through regeneration and smart urban planning or through finding a way of harnessing the private sector. These so called lumpy investments in such things as upgrading and expanding municipal sewage systems, traffic corridor development, as well as providing the incentives for the private sector to participate in science parks, urban renewal and conservation projects all require large initial outlays. Thus, we have the planning dilemma that is part and parcel of an urban world. The voters want their parks and

bicycle paths, as well as preservation of a surrounding countryside, and those municipalities that have them are more attractive to investment, yet the same voters rebel against increased taxation needed for the initial investments to prime the pump.

A major source of local government's funding comes from property taxation. The first part of this book devoted considerable space to discussing the innovation foreseen in public financing, valuation, appraisal and taxing real property. Here, our concern is with the method in the use of data on land and its role in policy making. The foundation of almost all of our current records on land had their origin in taxation. The physical dimensions of real property were recorded in ancient times and were preserved in such records as the *capitatio terrena* of Rome and the *katastikhon* of the Byzantine empire. The Venetian Republic borrowed this name for its *catastico* (property register). Originally therefore cadastral and other records of rights in real property were seen as basically fiscal instruments. Land registration as an institution of recording the transfer and transactions concerning registered parcels evolved in tandem with the development of private rights at the end of Europe's feudal age. The fact that so much of our current development effort in land administration concerning countries in transition and developing economies has to do with institutions that responded to changes in one of the world's many cultural traditions is a point to which we will return below. At this juncture, however, I would like to direct the reader's attention to the issue of what is happening to land tenure data and the new uses to which it is being put.

Almost all of the data on 'what is where and where is what' was, by the nature of its technology and maintenance, largely hidden from public view in all but a handful of jurisdictions, until the beginning of this century. Property records in a land registry were consulted by professionals only when a major transaction transpired, when a legal action was initiated or in regards to devise ment. Otherwise these records largely took up space, in the off chance they were needed "just in case". Property maps used for taxation purposes were kept in another database, normally under the control of a different agency. In spite of the tremendous expense that society invested in these official property records, their accuracy was never tested. Indeed, it has long been known in the profession that the best data on property and who lives where is in the records of the utility companies. Furthermore, data on natural resources are to be found in numerous other data sets that are scattered among various agencies and private sector enterprises (maps on water quality, maps on soil types, forestry maps, fisheries maps, mineral maps and so forth). Once again most of these data were not available to the public when they were asked to vote on land administration and land use issues.

What changed are both the technology and the way we look at land administration data. The computation power of modern graphic systems supported the development of GIS technologies that allowed the ability to integrate diverse spatial datasets. Suddenly projected urban expansion could be mapped onto any number of environmental data sets. The spatial databases of the built-up environment could now be contained in the same database that was used for nature conservancy.

Ian Williamson has long been one of the leaders of this revolution. He argues that sustainable development objectives cannot be achieved unless natural and built environmental data are integrated. This development in spatial data infrastructures has been paralleled by an effort to revitalize democracy by more intimately connecting citizens to their government through e-government. Therefore, it was only natural that the mostly “dead” paper in the land registry/cadastre office be included in transparent government. In his chapter, Professor Williamson asks us to go beyond e-government. His chapter introduces the concept of iLand and its use in a global economy. iLand is a vision of integrated, spatially enabled, land information available on the Internet. iLand enables the “where” in government policies and information.

For instance, he asks how land administrators and policy makers in a given jurisdiction can have the capability of seeing the international context of land information and its importance to their national government in presentation of its investment face to the world. iLand can be that tool. It is seen as an integral part (I suspect he would maintain the missing part) of future e-governance. This kind of accessible data will be both a key resource and a major institutional revolution in having informed voter participation in the debates on urban planning that we discussed above.

Professor Williamson concludes his chapter with the statement: “Unfortunately, unless land information systems are refocused on delivering transparent and vital information and enabling platforms, modern economies will have difficulty meeting sustainable development objectives and achieving their economic potential.”

In this statement, Dr. Williamson puts his finger on an important relationship between globalization in trade with the need to be able to transact in diverse jurisdictions. Therefore it is not surprising that the land registries in the leading players in the global economy are becoming to look very much alike. Those jurisdictions in which the land administration institutions are the most transparent and the most secure are also those that tend to attract the most investment. For example, in his comments on Williamson’s paper during the conference, Professor Tien-Yin Chou 周天穎⁶ was able to point to how many of the ideas proposed for iLand were in the process of being implemented in Taiwan.

There is, however, something even more fundamental going on. Land information is rapidly becoming part of the new economy. Let us take just a moment to analyze the transition that is taking place. Land information, like that contained in most LIS of the past quarter century has been viewed as a necessary expense, born by the taxpayer, for the benefit of all. We are used to seeing teams with total stations and GPS receivers at the side of the highway, out in the nature preserves, strung along rivers and so forth. Where did that data go, who used it and for which purposes was to all extents and purposes something of a mystery to anyone out side the specific project with which it was associated. Only graduate student researchers, tax watchers or land investors had the tenacity to shed any light on “what is going on”. The data have been traditionally locked away in surveyors’ field books, planning maps and proposals for land use change. It has always been the proposed new use of the land that had all the value and attracted the investment; the data collection was just a necessary expense.

Today it is the information that is rapidly becoming the more valuable commodity. The value, however, depends on the coverage and completeness. The more complete the LIS the more users we will have of that data and the more users of the data, the more value the data has in the new economy! Once companies like Google, Microsoft and others began offering the capacity to zero down from a satellite image to any place on the face of the globe, new data uses and revenue streams were created. So far this has turned out to be a virtuous circle. The more transparent the data and the market the more participants are attracted and hence the economic value keeps growing.⁷

So, in looking towards 2015, is it the land tenure institutions we need to look to for development models, or the land information data sets? The chapters by Bebbington, Bromley and Bruce make clear that simply importing property law and institutions from Europe, North America, or one of the Asian Tigers is not necessarily conducive to economic development. In his chapter on the role of the multilateral Development Banks in directing the change in the legal foundations of land administration, John Bruce sees these efforts much stimulated by Hernando de Soto's work, especially his "The Mystery of Capital", and his concept of vitalizing "dead capital". John effectively argues that de Soto's line of reasoning is an over simplification. "Over ambitious and bungled property rights reforms can sow normative confusion and seriously decrease security of tenure, a lesson learned from early land privatization reforms of the 1960s in Kenya and elsewhere, but largely disregarded in the rush to formalize land rights".

An example of where good intentions but lack of any understanding of the local reality led to bad policy in a legal reform and natural resource project is illustrated by the case where Mongolia's 2003 Land Law undid the community access commons of the 1994 law and in effect returned pastureland to the status of an open access resource. There is still much work to be done in getting customary rights recognized and integrated into land administration. As Professor Hsu points out in his prepared comments, in the case of Taiwan the imposition of a land registry by the Japanese from 1900 to 1945 was not evolutionary, but revolutionary. It required a complete paradigm shift in the way people see and use land.⁸ As he says, it is a political process. Indeed, land rights issues have never been fully resolved in Taiwan and the Government has established a Ministry to address the land claims of the decedents of the pre-Han inhabitants of the island.

Projects by influential agents such as the Multilateral Development Banks can be an essential catalyst in piloting the conditionality of legal reform. This is because most countries now have up-to-date laws "on the books" somewhere. The problem is that there is also layer upon layer of law and legislation reflecting every development fad from earlier historical eras. A housecleaning is needed, but often resisted by those who make a living off of the confusion (often lawyers and notaries, but also inter ministry turf conflict). As his chapter stresses, getting the legal foundations for sustainable use of land needs much care and reassessment to get real ownership by a country and its institutions.

Daniel Bromley's chapter helps make clear why this is the case. His argument is that there can never be a single concept, or idea of land. Following the philosopher Pierce,

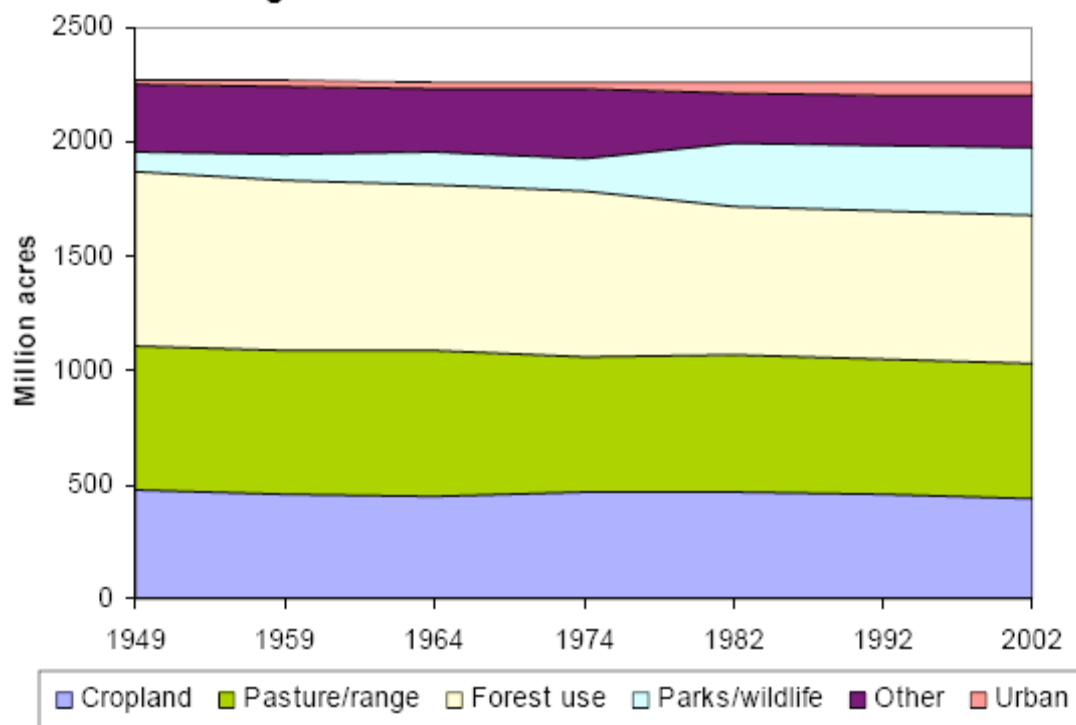
Bromley postulates that “...land is nothing but the effects that land has on us—and the implications that land holds for us.” On the surface this can sound like a “just so” statement. In the way that Bromley develops this concept it is an extremely powerful tool for understanding why land issues will require complex analysis in the future.

We are currently in an intellectual state of mind in regard to land where the answers seem to be in hand before any data is collected. The vast amount of research that led up to the “Washington Consensus” clearly brought the importance of getting institutions right back into the spot light. Since there are no rich countries with poorly working land tenure institutions (e.g. land registries and cadastres) and there are no poor countries with good working ones, it seems so obvious; we only need to duplicate the good institutions found in OECD countries. This, however, accepts that a concept of land that gave rise to these institutions must be, in essence, the correct one from a development perspective.

Unfortunately, this “easy” answer falls short on at least two counts. The first and most obvious is that land tenure reform following the given formula of registration of private rights in real property have fallen on barren ground in much of the world, for the reasons given in the chapter by Bruce. The second reason is that a globalized competition for natural resources changes the way we see land. The answer to the question of what is the best use of a given area is not the same as it was in Ricardo’s day nor is it the same as it was just a decade ago.

In an extensive comment on Bromley’s chapter Gregory Ingram agrees that although the view of land in the post-industrial United States is perhaps becoming valued as a consumption asset (as a provider of environmental and ecological services), the actual distribution of land use had remained remarkably stable over the past half century.⁹ As the data cited by Ingram shows, although the land converted to urban uses has quadrupled in area, it is still a very modest 2.7 percent of all land in 2002. Also consistent with the idea of land as a consumptive asset is the fact that the area devoted to Parks and Wildlife has tripled to 13.1 percent. What Ingram takes from these data is that the “...change is indeed evolutionary, and it proceeds by introducing more “asset classes” in the land portfolio and not by replacing them.” What has changed dramatically, however, is the market value of different categories of land during this same period. In comparing the monetary value of urban residential land relative to farmland and land devoted to commercial (non-residential) uses, we see that these three categories were about the same in 1975. By 2005, the market value of residential property accounted for approximately seventy-five percent of the total market value of all three categories.¹⁰

Figure 1. Land use in the United States



Source: R.N. Lubowski, et al., "Major uses of land in the United States, 2002." USDA, EIB #4, May, 2006.

From Ingram's comments paper (page 1)

This change in market value is another way of expressing Bromley's point. The land resources can remain more or less proportionally the same, but the value people place on them can change dramatically. This is certainly to be expected as publics in democracies absorb and debate scientific studies on earth resource sustainability. National parks were created to preserve natural beauty, and to provide recreation. However, as the costs of non sustainable natural resource uses become to be felt by a greater proportion of humanity, we can foresee the day when the role in local and global economy of forests, coastal ecosystems, glaciers, and forth, can be priced like petroleum, minerals, fish catches, and lumber.

The implications of this line of reasoning are really quite profound. This is because we are talking about choices that are going to have to be made and the way in which they will be made will be at the core of the future of modern society. For example, it is not too difficult to imagine in the new term future a decision that the value of a forest as a reservoir of Green Water¹¹, as a sump in carbon sequestration, as an air purifier, etc., is greater than its traditional economic uses is one that has to be made above the individual level. That is, the incremental change in the perception of land (as well as water, etc.) lead eventually to a societal redefinition of land tenure. Society imposes new rules on who had the rights to use which resources for which purpose and for how long. Since these types of decisions take place at the supra-individual level, they become political. This brings us full circle back to the arguments of the Knaap and Lugar/Maynard

chapters that no matter what our theories of pricing tell us, people as participants in the political process will insist on a role in deciding the new tenure rules of natural resource allocation and use.

This process is well illustrated in the chapter by Bebbington where large scale international investments offer to change forever the existing land tenure relationships and hence the very meaning of the land upon which people live. Ultimately the residents, the national policy makers and international interest groups all have to face the fact that there are many competing definitions of what “land” means in a specific place and time. In the case studies that he presents, the reader is introduced to the complexity of how a piece of land is conceptualized. Is it the resource that lies under the soil that determines the “best” value? Or, indeed it is the value of an area as an environmental resource in an age of global warming that is the more valuable? Or, is it something else that will effect our “...conception of the object”, to use Pierce’s words?

Bebbington’s chapter is especially important because it analyses the manner in which a carefully studied group of land users are changing how they look at land and what it means to them. His analysis allows us to begin to understand the complex interplay of multiple processes that are taking place simultaneously. One, how land is used has a direct bearing on the kinds of social relationships that people have. These are quite different when we contrast those of the board room of the mining company, the professional activities of the geologists and engineers who draw up the design for the mine, the policy makers in the capital responding to pressures from many fronts on a global scale and last but not least the diverse social reality of the people living in the area where “land” as a resource is being redefined with or without their participation. In addition, this short list leaves out all the new kinds of social relationships that never existed before the technology of the information age. Key to our understanding of the processes is the fact that today the social capital of the residents in the affected area also includes NGOs, environmental advocates as well as numerous experts who live in places and who have livelihoods very different from themselves.

Conclusion

Unfortunately the Century has not gotten off to a good start and there is less agreement on how to go about resolving fundamental resource allocation decisions that there was at the end of the previous century. The number of major players in our globalized economy continues to grow. Both China and India are predicted to overtake the US as the most prolific users of natural resources during this century. While public attention will in the short term be focused on petroleum and whatever is the scarce commodity of the day, the long term land tenure policy choices will surely concern those natural resources that are vital to human life. These resources are also part of a global system. Thus no society is in complete control of its water and air nor can it protect itself completely from environmental contamination, pandemics, global warming and on and on as science uncovers new dangers (as well as opportunities). An island city state like Singapore, that is a model of good land administration, is just as vulnerable, if not more so, to the

misinformed land use practices of the slash and burn farmers of Sumatra than are the policy makers in Jakarta.

That the authors met to share ideas in Taiwan is significant. Taiwan has benefited greatly from a strong reliance on the market to inform policy discourse. In light of what is going on in other parts of the world, we have to be aware that had the same meeting been held in Latin America, there would have been a much larger debate on role of market pricing in the formation of land tenure and land administration policy. At the turn of our present Century there was near universal acceptance that “neoliberal”, private property models were a necessary foundation to development. However, the last five elections in Latin America show that this consensus no longer holds. During the brief interval of years between the printing of this book and 2015, our target date, it will be interesting to see how great a bifurcation we will have in policy debates between proponents of some new social property model and the informed consensus that has guided the arguments we have presented here. The fall of the Berlin Wall in 1989 is sufficient distance in time that a whole new generation of scholars will arrive on the scene who never experienced the social property models of the last century.

Demographers tell us that we live in world where more people live in cities than in the vast countryside. Yet we also learn that one in three of these urban residents do not have access to adequate water, waste and hygiene and live in deplorable physical conditions. The profound irony is that as deplorable as these slums are, they are preferable to life in the rural economy. Yet any improvement in the lot of the vast majority of humankind will rest with the land policy decisions made concerning the sustainable use of rural resources. It is where cities, farmers and miners get their water, air, food, and natural resources. It is over these rural resources that the great policy debates will have to be resolved.

On the one hand it is rather depressing that we have arrived at this stage and find that the way we lived in the Twentieth Century is not sustainable in any conceivable mid- to long term time horizon. On the other hand it is also an exciting time for the student of land tenure. It is clear that we need to get back to basic research and to collect data on what the real situation is rather than rely on answers that evolved out of conceptions of land that are no longer in tune with our awareness.

End Notes

¹ This book and the conference which preceded it is the result of the long collaboration between the International Center for Land Policy Studies and Training (ICLPST) and the Lincoln Institute of Land Policy. The timing for bringing together the authors of the chapters was the milestone of the 100th Regular Session of a course collaboratively organized by the two institutions.

² The Millennium Summit was held 6 -8 September 2000 at the UN Headquarters in New York. “The Millennium Development Goals (MDGs) are the world’s time-bound and quantified targets for addressing extreme poverty in its many dimensions-income poverty, hunger, disease, lack of adequate shelter, and exclusion-while promoting gender equality, education, and environmental sustainability. They are also basic human rights-the rights of each person on the planet to health, education, shelter, and security” (Millennium Project, 2006).

Goal 1: Eradicate Extreme Hunger and Poverty
Goal 2: Achieve Universal Primary Education
Goal 3: Promote Gender Equality and Empower Women
Goal 4: Reduce Child Mortality
Goal 5: Improve Maternal Health
Goal 6: Combat HIV/AIDS, Malaria and other diseases
Goal 7: Ensure Environmental Sustainability
Goal 8: Develop a Global Partnership for Development

³ The massive effort to get international agreement in 1982 for the wording of the Convention on the Law of the Seas (UNCLOS-III) was a significant achievement of the Twentieth Century. It had enough signatories to come into force in 1994. What had hitherto been subject to “gunboat” diplomacy was now placed into an institutional framework of arms-length negotiations with the final result having the force of international law. From a land administration perspective, a major achievement was to establish the rights of states to the sea up to the continental shelf. The land administration responsibilities of a country like New Zealand, for example, grew twenty-fold upon its accession in 1996. Since UNCLOS III set the convention for the passage of ships and aircraft over the seas bordering member nations, it is hard to see how a global economy would have been possible without it.

⁴ Dean of College of Management Hsuan Chuang University

⁵ Comments on the Sprawl of Economics, Cheng-Min Feng, Professor, Institute of Traffic and Transportation, National Chiao Tung University

⁶ GIS research Center, Feng Chia University

⁷ It should be mentioned here that land registries and cadastres are expensive public undertakings. Dale and McLaughlin argue that a complete modern cadastre costs several hundred million US dollars to create from scratch (Dale, Peter and John McLaughlin 2000, OUP, Chapter 5). These figures conform to our work at FAO. Thus, a very relevant part of “normal” land registration planning was to look for ways to recover costs through filing fees and so forth. When the Dutch Cadastre and the Austrian Cadastre went public they found that the demand for data was so great that nominal fees for data access by mortgage banks, notaries, real estate agents in addition to property owners curious about their property, more than paid for state of the art systems. Such an open cadastre has value only to the degree to which it is complete and accurate.

⁸ Property Rights Reform or Property Rights Revolution? Shih-Jung Hsu 徐世榮, Professor, Department of Land Economics, National Chengchi University, Taiwan

⁹ Comment by Gregory Ingram on “Land and Economic Development: New Institutional Arrangements for the 21st Century,” by Daniel Bromley

¹⁰ **Ingram’s comments paper** cites: Karl Case, “The Value of Land in the United States: 1975-2005,” presented at a conference on Land Policies for Urban Development, Lincoln Institute of Land Policy, Cambridge, MA., June 5-6, 2006. for this data.

¹¹ Green Water is that water that is held in the ground, plant life, etc and it constitutes somewhere between 60 and 70 percent of all precipitation. This concept of water is contrasted with “Blue Water” which is found in our oceans, rivers and lakes. (FAO 1996 The Critical Role of Water in Agriculture. Rome. Also, Fourth World Water Forum, 2006. Mexico)