Evaluating Land on a Continuum of Land Rights

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SUMMARY

The paper describes a structure for evaluating different land tenure forms on a continuum of land rights and evaluating the process of transforming from one tenure form to another on this continuum. There is a large body of empirical work which measures the outcomes of individual private property supported by land titles. Due to the negative consequences of individualised tenure in situations where the critical success factors for titling to work are missing, the continuum metaphor has emerged as one alternative view of lasting land tenure security.

What is lacking is empirical work on evaluating tenure forms that are alternatives to individual ownership, and a framework for structuring the different types of evaluations which serve different purposes and users. The paper presents a structure for these different types of evaluations which is tied to different types of theory, on the assumption that this should lead to improved rigour in both tenure evaluations and the empirical foundation for different tenure related theory. A range of evaluation types include: (1) evaluations which report on the status of a situation alone, (2) evaluations which report on status with some explanation for diagnostic purposes, (3) evaluations which explain a situation and predict what might occur, which can provide the basis for design and action, and (4) evaluations which use the first three types to evaluate land or tenure administration projects and programmes.

The benefit of linking each evaluating category to a category of theory is to make it possible to establish where and how a particular evaluation should be used and, importantly, how it should not be used.

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1. INTRODUCTION

The continuum of land rights is gaining traction globally as a metaphor to guide policies and strategies to improve equity in land tenure and land transactions, and to increase official recognition of different tenure types that provide various levels of tenure security. What should accompany this are ways of evaluating different tenure types on a continuum in terms of the social and economic costs and benefits that may follow their official recognition. What should also be evaluated are the processes of transforming from one tenure type to another, and the total impact of a legal tenure regime that recognises a number of tenure forms. This last point is important. Increasing the number of legally recognised tenure forms increases the complexity of the procedural law, the tenure administration system and the institutional and regulatory framework. The question then is what should be taken into account when introducing alternative land tenure, administration and institutional systems, and how do we evaluate the processes, structures and impacts as these changes are introduced?

The continuum of land rights describes a situation (*a continuum of land rights scenario*) where, in a particular country, region or area, different tenure forms incorporating a range of interests exist simultaneously. The situation is changing and transforming, and landholders change between tenure forms over time. The rationale behind the continuum as an initiative to drive land tenure policy is that tenure forms other than ownership may be better suited to local circumstances at a particular time, providing the enabling conditions for them to function effectively exist. Tenure forms other than ownership or near ownership (e.g. freehold, long term leases) may hold lower levels of risk of some of the possible negative consequences associated with private ownership and the land titling systems that give effect to it (Barry 2015). In addition, a significant proportion of land around the world in which people have an interest is not registered, and much of that land falls outside of any statutory protection at all (e.g. rural customary land, aboriginal land). Current registration processes take too long, especially as the inequality gap is ever widening (McLaren 2011), but some form of record of interests in land and statutory support for legitimate interests should reduce the chances of this land being grabbed by elites and the politically connected.

The paper describes a framework for evaluating land on a continuum of land rights. It is a summary of a larger, more detailed work by the authors (Barry and Augustinus 2015). The

framework builds on the land evaluation initiatives that many international agencies have developed for administration projects and international scale initiatives such as the Worldwide Governance Indicators (WGI) and the Land Governance Assessment Framework (LGAF). The framework, drawing on Gregor (2006), uses different categories of evaluation which are linked to the different purposes of theory; i.e. description or status, explanation, prediction, and design and action. This makes it possible to establish where and how a particular evaluation should be used and, importantly, how its results should not be used. For example, one should not design a programme to improve a situation based on an evaluation that reports on the status of a situation alone. Evaluations that measure status only may be used to compare the situation in different jurisdictions (e.g. the WGI), they may form part of a municipal annual report to show the impacts of different programmes and where resources and programmes might be needed urgently. These tend to be quantitative measures, perhaps with some explanatory notes attached to them. To design a programme to improve a situation, an evaluation is required that explains the situation and predicts what might occur given different scenarios. For example, what might happen if we do nothing or what might happen if we implement strategy A, B or C? These may have quantitative scores, but are more likely to have a series of explanatory and predictive statements that will provide the basis for design and action. Drawing on Davis (2011), some continuum scenarios may require evaluations that are part of processes that may be likened to the *kaizen* philosophy as it used in business. That is evaluations form part of the process of continual improvement involving participation by workers, managers, landholders and other stakeholders. In some organisations it may be a daily activity. Statistics may be an important component of these evaluations, providing they contribute to the primary focus of recommendations to improve the situation as a whole.

2. PROBLEM CONTEXTS AND EVALUATING LAND TENURE ADMINISTRATION

Land tenure security is related to a number of factors, and these are complex, political and, often, emotional social relationships. The cause and effect relationships between tenure security and other factors differ from place to place and over time. For example, in one time and place, land tenure security may be a major factor in stimulating economic growth. In another time and place, land tenure security may follow economic growth. Further, a number of other conditions have to be satisfied for both tenure security and economic growth to be realised. If land tenure security and a number of other related factors are measured, this should, at a minimum, provide some indication of what needs to be addressed to improve social progress, economic conditions and land-use planning. Improvement may occur in a climate of what J. K. Galbraith referred to as functional anarchy (Liberhahn, 2007). Our interpretation of this maxim, is that a situation might appear chaotic to a (supposedly) rational observer, but somehow "things get done", but how they get done is not according to the "rational" linear process model which the observer might consider ideal.

A major challenge is that many of the situations where a continuum of land rights should be considered as a guide to policy, law and land tenure improvement strategy may be classed as wicked problem contexts. Adapting Rittel and Webber (1984) and Barry and Fourie (2002), in continuum scenarios, these contexts tend to be characterized by conflict and competition over land and leadership which precipitate fractious local politics. The problems may seem intractable, and where and how to start addressing them is a major challenge. Often, the people involved are poor and have to continually negotiate their continued occupation of their current home, possibly within their community and even within the family. Sometimes they have been displaced as a consequence of conflict, and they are vulnerable to eviction in their current location and to losing their interests in the territory from which they have fled. There are also, however, numerous possible continuum scenarios which are stable or 'tame' problem contexts, or perhaps somewhere between wicked and tame. These include customary lands, aboriginal lands, rural lands where the local social and political situation may be stable but with ambiguous land interests, and lands in which the people with the greatest claim have no statutory recognition of their interests. Strategies to improve all of these situations, tame or wicked, need to be evaluated to ensure that interventions are indeed improving the situation, and they need to be evaluated in order to design, plan and implement interventions. In these situations, programmes to improve a situation are likely to examine where the maximum leverage can be obtained by making small improvements in one or more of a number of variables (e.g. improve local-level record keeping, improve accountability and publicity related to land records, increase field inspections, improve access to information), and then re-evaluating what constitutes the problem, establishing a new set of goals, and designing strategies to improve the situation continually as progress occurs in small steps (Rittel and Webber, 1984; Barry and Fourie, 2002). Thus parallels can be seen with the *kaizen* philosophy on quality improvement, which has had a major impact in manufacturing since World War II (Davis 2011). A caution is that only part of what works in manufacturing can be applied to land tenure security improvement. The boundaries of land tenure security improvement problems are far broader and less easily defined, and the complexity of the problem contexts is far greater due to the political and emotional dimensions to them, and the social costs of getting things wrong.

Evaluation has developed as a discipline in recent years. There are two main schools of thought in conducting evaluations and it is not always possible to reconcile these views. One school is grounded in a positivist / realist worldview and the other an interpretive / constructivist worldview. People in these two different schools might view a particular situation very differently, and draw very different conclusions and recommendations in studies of the same situation. The evaluation approach may also be determined by the purposes of the evaluation. As a broad generalisation the positivist approach is well suited to impact assessment, where numerical indicators purport to show the impact of a tenure improvement programme. In contrast in a wicked problem situation where continual small improvements are made, numerical scores may not be meaningful or useful, at least not on their own, and descriptive statements may be a better option.

3. CATEGORIES OF EVALUATION

Empirical work is lacking on evaluating tenure forms that are alternatives to individual ownership, and a framework for structuring the different types of evaluations which serve different purposes and users. This paper presents a structure for these different types of evaluations which is tied to different types of theory, on the assumption that this should lead to improved rigour in both tenure evaluations and the empirical foundation for different tenure related theory. A range of evaluation types include: (1) evaluations which report on the status of a situation alone, (2) evaluations which report on status with some explanation for diagnostic purposes, (3) evaluations which explain a situation and predict what might occur, and (4) evaluations which use the first three types to evaluate land or tenure administration projects and programmes in terms of progress against project and programme implementation plan metrics, their impacts and what may be learned from them.

Mapping evaluation categories to categories of theory (Gregor, 2006), the framework uses four evaluation categories which are based on an evaluation's purposes, how much the evaluation should explain in terms of those purposes, the scale (national, regional, settlement) and the units of analysis (e.g. settlement type, type of landholder such as owner, lessee, migrant, women, youth, etc.).

3.1 Category 1: Evaluations of Status Only

Category 1, status-only evaluations are diagnostic studies, as opposed to predictive studies, and are useful for reporting impacts of a programme if no explanation is required. Status-only evaluations explore the "what is" question only. An indicator or set of indicators shows that a particular status exists. It does not seek to explain, predict or offer recommendations for design and action. Causal relationships among phenomena are not described, and no attempt is made at prediction. For example, the WGI measure the quality of governance in a country without analysing and attempting to explain why that measure is what it is. At the country level, indicators are likely to be based on measures of particular variables in highly generalized or aggregated form, and at a grand scale for country level indicators. They can be used to compare situations in different countries, jurisdictions or regions. Related examples of these types of evaluations at the macro scale include the Worldwide Governance Indicators (WGI), the Social Progress Indicators (SPI), and the Global Land Indicators (under development) and evaluations that generate indicators for the Sustainable Development Goals (SDGs).

3.2 Category 2: Evaluations that Measure Status with Some Explanation

Category 2 evaluations are also diagnostic studies, but they explore the "what is" question and explore the "why" question superficially. Evaluations in this category are likely an extension of category 1 diagnostic studies. They incorporate a modicum of explanation of the relationships that underlie the numbers and theoretical statements, but in general they do not delve into the structures and processes that are causal to those relationships. For example, an evaluation may report a correlation between two variables. Why they are correlated is not necessarily explored. That requires more detailed work. At a town or city scale, category 2 evaluations may measure metrics related to *inter alia* economic development, livelihood opportunities, health, education, sanitation, fresh water provision, land taxation metrics, environmental concerns, transportation planning, and service delivery, among other variables. Correlations between tenure type and these variables may indicate whether programmes to improve tenure security and these variables is improving the quality of life in the town or city as a whole.

The Land Governance Assessment Framework (LGAF) might be considered a category 2 evaluation. It is promoted as a diagnostic tool (Deininger *et al,* 2012), and therefore should not be used for purposes other than that. The theoretical premise underlying LGAF is similar to WGI, but the LGAF processes are far more detailed and explanatory than WGI. However, on their own the results are not a prescription for design and action, as they are not comprehensive and lacking in detail. They point to where more work needs to be done to find out how to improve a situation.

A micro level example of a category 2 evaluation can be found in Barry and Roux (2016) where, based on case studies in South Africa's state-subsidised housing programme, a classification of the effectiveness of a land tenure form and the land tenure administration system that is supposed to support it can be classified as weak, semi-weak, semi-strong or strong. A set of evaluations using this classification scheme is useful for politicians, policy makers and managers to compare different projects, identify problem areas and prioritise programmes to improve. It does not, however, indicate what should be done.

Thus, category 1 and 2 evaluations might be used to compare evaluations in different locations and identify locations where things are working well and others where they are not. The also lend themselves to categorical maps and GIS across cities, regions and countries. If applied in this way, they may point to tame and wicked problem contexts in different locations.

3.3 Category 3: Evaluations that Explain and Predict

Category 3 evaluations are explanatory and predictive as opposed to diagnostic studies. They address the "what is, how, why, when, and what will be" questions. Such an evaluation offers explanations of the relationships in the situation being evaluated. It also offers predictions of what might occur in the situation being evaluated if particular strategies are implemented (or not implemented). These may then lead to some form of design and action to improve the situation. For example, a survey of experts might ask what causes the levels of corruption in the land sector and what is likely to occur if changes are made to some of the underlying causes. As part of a category 3 evaluation, the responses should be both explanatory and predictive.

The theory underlying them expressed in a form that might be relevant to land tenure management is as follows.

> *Hypothesis: Under a certain set of conditions, if a certain policy and accompanying strategy or set of strategies are implemented, then we can predict that a particular set of benefits (or detriments) may result.*

Category 3 evaluations are more likely in a continuum of land rights scenario, may take a number of forms, and be conducted at both a micro and at a broader, macro or regional level.

3.4 Category 4: Evaluations of Programmes and Projects

Category 4 evaluations apply a set of category 1, 2 and 3 evaluation processes and instruments to programmes and projects. There is a wealth of literature on project management and how to evaluate projects. International agencies such as the World Bank Internal Evaluation Group, USAID and the European Union have a wealth of documents on these. A challenge in evaluating continuum scenarios using a typical project management approach is that they are designed for tame problem contexts and the measurement of outcomes against predetermined objectives. They need to be adapted to wicked and tame-wicked contexts; e.g. by more frequent evaluations and more frequent project planning and rescheduling than might occur in a tame context.

As outlined above, specific impacts such as improved tenure security and broader impacts associated with improved tenure security such as improved livelihood opportunities, access to health, transport and education may be measured as part of these project and programme evaluations. These are likely to be category 1 or category 2 type evaluations.

3.5 Criteria for Choosing an Evaluation Category and Methodology

An evaluation category and the methodology to generate it should be chosen that best suits the purposes of that evaluation and the particular circumstances of a situation. It should be feasible, which means there are trade-offs between the time available to do the evaluation, the costs and available funding, and the quality of the results. Evaluations are real life measurements, not a laboratory experiment, and dealing with insurmountable constraints such as the availability of important data should form part of risk management and contingency planning. Care should be taken not to use a diagnostic evaluation (categories 1 & 2), for example, for design purposes as diagnostic results will be inadequate to ensure a robust design or reform of a system.

Adapted from Mark *et al* (2006), the following should inform the choice of evaluation category, the choice of methodology and the evaluation methods:

(1) *Purposes* – what are the purposes of an evaluation and what are the most important questions that the evaluation can address? The land sector is well known to have a multiplicity of actors with appreciably different needs, all with different purposes for an evaluation. For example, the government might want an evaluation to ensure continued funding, whereas the donor might want an evaluation to introduce more pro poor activities by the government through a new design. The more focused the statement of purpose, the more likely the data collected will actually measure what is supposed to be measured.

(2) *Audiences and users* – who are the audiences and how are they likely to use the evaluation? Land evaluations, like other evaluations, have many audiences, some with common interests and some with competing and vested interests, and the audiences have diverse ideological positions. It is important to agree on which audiences are most important. Given the land governance issues found in many countries, wide stakeholder participation should be considered beyond government and donors.

(3) *Participant biases* – who conducts and who participates in an evaluation and what is the character of their participation? Who is excluded or refuses to participate, and what are the implications of their exclusion? For example, land policy processes have been very frequent in Africa, but few have included refugees as participants despite the fact that Sub-Saharan Africa is host to the largest number of refugees (4.1 million) in the world (UNHCR mid year 2015 report).

(4) *Ideology and paradigm biases* – what are the conceptual framework and world view justifying an evaluation and the characteristics of that world view in designing and analysing an evaluation? There are a number of dimensions to ideological and paradigm biases which have direct land manifestations. The first dimension is the

political, economic and social ideology and development ideology of the people driving the evaluation and those who might use or oppose the findings. A common example, is whether the evaluation is to improve economic growth in the country, address poverty reduction, or to improve human rights? The second dimension relates to the evaluation methodology itself, and the different philosophical/ideological/conceptual approaches to research and views of evaluation. Land evaluations, because of land governance issues – itself an ideological approach based on human rights, have tended to become more participatory in terms of involving a wider range of stakeholders, with an expectation that the results will be publically shared. Often ideologies are linked to coalitions engaged in some kind of power struggle over the land. Communications related to evaluations are value laden and linked to ideological positions and power struggles.

(5) *Leverage points* – where or what are the leverage points for an evaluation to make a contribution? How can an evaluation be used to leverage change? This is particularly relevant for continuum of land rights scenarios in situations where continual small and incremental change is envisaged. Incremental changes in one or more areas may improve tenure security and / or they may improve the creation of the enabling conditions for long-term tenure security.

(6) *Evaluation practice* – what does evaluation practice within a particular evaluation tradition, like the global land sector, look like? Whose interests does it serve? What major questions does an evaluation answer? How are land tenure evaluations performed in each of the four categories above? How have they dealt with the fact that often land issues exist in wicked settings and that evaluation frameworks designed for tame problem contexts might be inappropriate? How have evaluations been conducted during changing situations? What are good examples that can be used? To date evaluations in the global land sector have tended to be dominated by donor interests. While large scale work has been done such as LGAF there are few land evaluations at small scale. While many interpretive land evaluations have been undertaken, the different methodologies have not been published. Moreover they may require a considerable amount of fieldwork (Barry and Roux 2013, 2106).

(7) *Examples* – when considering a set of different evaluation methods for a particular purpose, what do the existing examples of each evaluation approach look like? To date, there are examples of large-scale land evaluations, such as the Land Governance Assessment Framework (LGAF), but very few examples of studies that explicitly seek to evaluate continuum of land rights scenarios.

(8) *Critique – w*hat are the important critiques of the evaluation traditions that are being considered? What are the expected criticisms of a particular method? What are the benefits and limitations? What are future areas for refinement and development? The

new push on land governance has meant that land evaluations are expected to be more participatory nowadays. As this paper has raised, a key area of refinement is for the land sector to better understand different types of evaluations and inform evaluation funders about choices and possible results. Any methods need to include contingency planning given the political nature of land.

(9) *Power considerations* – what are the forces influencing preferences among evaluation purposes and the philosophical/ideological/conceptual basis of an evaluation? Altruistic orientations of an evaluation are to improve a situation, but in reality evaluations often serve for self-interest purposes.

(10) *Value commitments* – what are the value commitments that emerge from an evaluation? Values are ideological, and they concern the relationships an evaluation should have with the world. Thus the manner in which a continuum of land rights evaluation is communicated is likely to be strongly correlated with the ideological position of the people driving the process.

(11) *Risk management and contingency models* – if one model or methodology is found to be unworkable once the evaluation process has started (e.g. if key persons refuse to participate or agencies do not provide the necessary data), what are the contingency options?

The above are general criteria that should be considered in any evaluation associated with the continuum of land rights. They should lead to evaluation results that are robust and used appropriately, even in wicked problem contexts.

4. QUESTIONS THAT DRIVE A CONTINUUM SCENARIO EVALUATION

The following questions should inform the design of an evaluation or set of evaluations in a continuum of land rights scenario:

4.1 Evaluation Purposes

(1) What category of evaluation is required? Should an evaluation (1) merely indicate the conditions at a particular time, i.e. a category 1 or 2 status report, and if such an evaluation indicates that a situation needs to be improved then this is left to further detailed work; or (2) should the evaluation frame a detailed category 3 analysis in order to design strategies for design and action to improve the situation / rectify a problem?

(2) A likely scenario is that meaningful data will be difficult to acquire and may be incomplete or inaccurate in a continuum of land rights scenario. How should this

be managed? What are the implications of biased, incomplete data or data that has been manipulated to advance a particular agenda?

(3)   How will the purposes change? Evaluation purposes are seldom static and one should expect shifts in emphasis in purposes. What needs to be considered in a purpose statement and the continual review of an evaluation programme is how the purposes of that evaluation might change as it progresses. The evaluation process informs and is informed by current thinking.

(4)   At what scale should measurements be made to evaluate a tenure type and how general / detailed should they be (e.g. macro versus micro)?

(5)   How often should measurements be made?

4.2 Land system design

(1)   What are the different development perspectives and the range of end states for tenure forms that lie behind different ideologies? For example, some actors want the continnum of land rights to be a property ladder to freehold. Others consider some alternative forms of tenure as equivalents to freehold. How may the ideological emphasis shift as key agents change and/or knowledge is increased during, for example, land policy processes or when the results of pilot studies become known?

(2)   What should be achieved when providing official recognition to a system of different tenure types along a continuum? What should each tenure type achieve, for whom and for how long? Which tenure types should not be encouraged and why? What are the higher-level development and community planning objectives that need to be served when devising a system of mixed tenures in an area where some of them evolve into other types of tenures as certain conditions are met or conditions in the local social and political, land use planning and administration environment change?

(3)   Where are the progressions from one tenure form to another along a continuum likely to lead? How many tenure forms might emerge and how many of these can be managed? What are the risks of tenure forms emerging that are undesirable from a sustainable cities / rural–urban transition / customary land tenure perspective, and what can be done about them?

(4)   What are the possible unintended consequences of introducing parallel systems of land administration and legal, regulatory and institutional frameworks to give effect to a continuum of land rights scenario?

(5)   In the various organisations and institutions involved in land tenure management, what changes are required in corporate culture and operational procedures? Specific areas include organisation development and change, training, record keeping, communication with the public, and cross-institutional cooperation in areas such as communication, data sharing and work flow management?

5. CONCLUDING REMARKS

Initiatives to evaluate land are gaining momentum. This framework of four categories of evaluation fills a gap in that it provides the theoretical basis for evaluating land tenure for the transformation of structures and processes, and an understanding of continuum of land rights scenarios. Strategies to improve policy, law, land administration and land tenure security from the macro to the micro level should be based on the correct type of evaluations, particularly where there is a high level of uncertainty, complexity and conflict; a situation termed 'wicked problem contexts' in this paper. Moreover, the evaluation should be done with an appropriate level of rigour, bearing in mind the possible consequences of the evaluation results. Ideally, the evidence should be based on numerical scores and descriptive evaluative statements, which should meet a number of validity tests and other quality requirements taking into account the issues raised in this paper.

Continuum of land rights scenarios do not exist in a vacuum and need to be situated in the broader context of sustainable development. At the macro level, this link is recognized in the Sustainable Development Goals for 2030 where a number of the goals explicity or implicity include land such as Goal 1 (poverty reduction), Goal 2 (food security), Goal 5 (gender), Goal 11 (urban), Goal 13 (land degradation). Land indicators for these goals have been developed but will need to be placed within broader land evaluation methodology. The information for these indicators is likely to be derived from category 1 and category 2 evaluations. They are diagnostic evaluations which report on impacts of programmes and projects. At a smaller scale, a city or region may report figures on changes in land tenure types, and changes in access to health, education, sanitation, transportation, employment levels, small business growth and so forth. It may perhaps also report on correlations between the changes in these figures, to provide a picture of its overall performance in poverty alleviation and general service delivery. Category 1 and 2 evaluations also provide figures for analysing situations for strategic planning. They may also form part of ongoing project management evaluations. Thus they may be a starting point for planning and they evaluate the impacts of activities to improve a situation, without fully explaining the figures or the relationships between different figures.

Wicked problem contexts, the setting of most continuum of land rights contexts and possibly a majority of poor people, are unique challenges. They require a good mix of interpretive and

quantitative information. The size and complexity of the land sector can make evaluations difficult. One strategic approach and a way of evaluating is to break up land programmes into numerous small projects and evaluate these projects continually. This would facilitate ongoing strategic rethinking and redesign. However, if this approach is taken it is also important to have an overall vision for the land administration systems, including land use planning, to ensure alignment and coherance over time. This vision should be about what the natural and built environment should look like, what the land tenure security goals are, some tentative planning goals and objectives to accompany it. How that is to be achieved may not be clear. The immediate focus may be on improving tenure security, but the long-term focus should be on a vision of a sustainable natural and built environment. Project and programme planning, and evaluations that inform the process, may include a number of variables such as desirable tenure types, rules for assigning these types, economic development, livelihood opportunities, sanitation, water, environmental concerns, transportation planning, legal, regulatory and institutional frameworks, administration structures and processes, options for long-term tenure types, and such like.

To conclude, the four category evaluation framework should contribute to better evaluation, planning and integration of land tenure concepts in complex situations. It should also lead to evaluation, results being used for the purposes for which they were intended and thus improve the chances of policies, programmes and projects generating the desired outcomes. In many continuum scenarios, grand theories and large-scale programmes and projects are unlikely to generate the desired outcomes and they might well do damage. Improving tenure security in continuum scenarios is analogous to navigating poverty alleviation interventions using a nautical chart as opposed to a road map. The destination, the vision, is known, and there is a general knowledge of the major forces impacting the process. However, continual evaluations of factors that cannot be controlled have to be made and adjustments made to strategies in order to reach the final destination.

6. REFERENCES

Barry, M. and C. Fourie (2002). Wicked Problems, Soft Systems and Cadastral Systems in Periods of Uncertainty: South African Experience. *Survey Review*. 36(285), pp. 483-496.

Barry M and Roux L (2016). Land Ownership and Land Registration Suitability Theory in State-Subsidised Housing in a Rural South African Town *Habitat International,* 53, April 2016, 48 – 54.

Barry M and Roux L (2013). The Case Study Method in Examining Land Registration Usage. *Geomatica.* 67(1), 267 – 281.

Barry, M. (2015). *Property Theory, Metaphors and the Continuum of Land Rights.* Nairobi: UN-Habitat / Global Land Tool Network.

Barry M and Augustinus C (2015). *Framework for Evaluating Continuum of Land Rights Scenarios*, Review Copy 15 September 2015. UN-Habitat / Global Land Tools Network, Nairobi.

Davis, J. W. (2011). *Progressive Kaizen. The key to gaining a Global Competitive Advantage*. New York: CRC Productivity Press.

Deininger, K., H. Selod and A. Burns (2012). *The Land Governance Assessment Framework. Identifying and Monitoring good Practice in the Land Sector*. Washington D.C.: World Bank.

Gregor, S. (2006). The Nature of Theory in Information Systems. *MIS Quarterly*, 30 (3), September, pp. 611-642.

Liberhan R 2007. *Functional Anarchy*. Live Mint, The Wall Street Journal. 11 September 2007.

Mark, M. M., J. C. Greene and I. F. Shaw (2006). *The Evaluation of Policies, Programmes, and Practices.* In Shaw, I. F., J. C. Greene and M. M. Mark (eds.), *Sage Handbook of Evaluation: Policies, programmes and practices*. London: Sage.

McLaren, R. (2011). *Crowdsourcing Support of Land Administration*. London: Royal Institute of Chartered Surveyors.

Rittel, H. J. and M. M. Webber (1984). Planning problems are wicked problems, In N. Cross (ed.), *Developments in Design Methodology*, Wiley, 135-144.

BIOGRAPHICAL NOTES

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